Court File No. T-294-25

**FEDERAL COURT**

BETWEEN:

UNIVERSAL OSTRICH FARMS INC.

APPLICANT

- and -

CANADIAN FOOD INSPECTION AGENCY

RESPONDENT

APPLICATION UNDER THE *FEDERAL COURTS ACT*,
R.S.C. 1985, C. F-7, S. 18.1

**SOLICITOR'S CERTIFICATE RE EXPERT WITNESS**

I, Michael D. Carter, Solicitor for the Applicant, Universal Ostrich Farms Inc., hereby certify that the statement in writing of Dr. Byram W. Bridle dated March 3, 2025 sets out his proposed evidence as an expert witness to be given at the hearing of the within proceeding.

DATED at White Rock, British Columbia, this 3rd day of March, 2025.

Cleveland Doan LLP
1321 Johnston Road
White Rock, BC V4B 3Z3

MICHAEL D. CARTER
ALYONA KOKANOVA

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Solicitors for the Applicant

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## CERTIFICATE CONCERNING CODE OF CONDUCT FOR EXPERT WITNESSES

I, Dr. Byram W. Bridle, having been named as an expert witness by the applicant, Universal Ostrich Farms Inc., certify that I have read the Code of Conduct for Expert Witnesses set out in the schedule to the *Federal Courts Rules* (and attached hereto) and agree to be bound by it.

Date: February 28, 2025

Dr. Byram W. Bridle, PhD
Office Room #4834; Lab Room #3808
Building #89 (NW corner
Gordon/McGilvray)
Department of Pathobiology
Ontario Veterinary College
University of Guelph
50 Stone Road East
Guelph, ON N1G 2W1

# Code of Conduct for Expert Witnesses

## General Duty to the Court

**1** An expert witness named to provide a report for use as evidence, or to testify in a proceeding, has an overriding duty to assist the Court impartially on matters relevant to his or her area of expertise.

**2** This duty overrides any duty to a party to the proceeding, including the person retaining the expert witness. An expert is to be independent and objective. An expert is not an advocate for a party.

## Experts' Reports

**3** An expert's report submitted as an affidavit or statement referred to in rule 52.2 of the *Federal Courts Rules* shall include

**(a)** a statement of the issues addressed in the report;

**(b)** a description of the qualifications of the expert on the issues addressed in the report;

**(c)** the expert's current *curriculum vitae* attached to the report as a schedule;

**(d)** the facts and assumptions on which the opinions in the report are based; in that regard, a letter of instructions, if any, may be attached to the report as a schedule;

**(e)** a summary of the opinions expressed;

**(f)** in the case of a report that is provided in response to another expert's report, an indication of the points of agreement and of disagreement with the other expert's opinions;

**(g)** the reasons for each opinion expressed;

**(h)** any literature or other materials specifically relied on in support of the opinions;

**(i)** a summary of the methodology used, including any examinations, tests or other investigations on which the expert has relied, including details of the qualifications of the person who carried them out, and whether a representative of any other party was present;

**(j)** any caveats or qualifications necessary to render the report complete and accurate, including those relating to any insufficiency of data or research and an indication of any matters that fall outside the expert's field of expertise; and

**(k)** particulars of any aspect of the expert's relationship with a party to the proceeding or the subject matter of his or her proposed evidence that might affect his or her duty to the Court.

**4** An expert witness must report without delay to persons in receipt of the report any material changes affecting the expert's qualifications or the opinions expressed or the data contained in the report.

## Expert Conferences

**5** An expert witness who is ordered by the Court to confer with another expert witness

**(a)** must exercise independent, impartial and objective judgment on the issues addressed; and

**(b)** must endeavour to clarify with the other expert witness the points on which they agree and the points on which their views differ.

UNIVERSITY of GUELPH

ONTARIO
VETERINARY COLLEGE
DEPARTMENT OF PATHOBIOLOGY

March 3, 2025

***Re: Expert Report***

Dear Alyona Kokanova, CLEVELAND DOAN LLP, White Rock, British Columbia, Canada,

I acknowledge receipt of your request to provide my expert scientific medical opinion for a legal case being heard in the province of British Columbia regarding Universal Ostrich Farms Ltd. Please find attached a report that outlines my concluded expert opinion.

Sincerely,

Byram W. Bridle

Dr. Byram W. Bridle
Associate Professor of Immunology and Virology
E-mail: bbridle@uoguelph.ca

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## AFFIDAVIT OF BYRAM WAYNE BRIDLE

I, Dr. **Byram Wayne Bridle**, PhD, Associate Professor of Immunology and Virology, solemnly, sincerely, and truly declare and affirm:

**Rule 52.2**

1 I have reviewed rule 52.2 of the Federal Courts Rules and agree to be bound by it.

2 On February 26, 2025, I received a letter from Alyona Kokanova at Cleveland Doan LLP, requesting my expert opinion for a case involving Universal Ostrich Farms, located in British Columbia. It contained multiple materials facts, with additional evidence appended, and posed two questions for me to respond to.

**Issues Addressed in the Report**

3 In formulating my expert opinion, I relied upon the following twenty-one material facts that were provided to me:

(i) Universal Ostrich Farms Ltd. ("UOF") is located at 301 Langille Road, Edgewood, British Columbia (the "Property").

(ii) The Property is approximately 10 kilometres northwest of Edgewood, British Columbia.

(iii) According to Statistics Canada, the 2021 Census Profile of Edgewood lists a total population of 235 people.

(iv) The nearest population centres are Vernon, at over 90 kilometres by air, and Castlegar, at over 70 kilometres by air.

(v) UOF raises ostriches at the Property.

(vi) As of February of 2020, UOF was raising about 250 ostriches on the Property.

(vii) At that time some ostriches in the herd became sick. Tissue samples were taken from a deceased ostrich and were sent for analysis. A report from the BC Animal Health Centre returned positive results for "Proteus sp., Pseudomonas aeruginosa and E. coli (non-haemolytic)".

(viii) Ten ostriches died around February 2020.

(ix) In the following year UOF began increasing the size of the herd, including by purchasing some ostriches from other producers.

(x) As of December 1, 2024, there were approximately 450 ostriches being raised at the Property (the "Herd").

(xi) On about December 10, 2024, representatives from UOF began noticing some ostriches in the Herd were showing signs of illness.

(xii) In the coming week ostriches began to die from apparent illness.

(xiii) On December 30, 2024, representatives from the Canadian Food Inspection Agency ("CFIA") attended at the Property and took swab samples from two of the dead ostriches.

(xiv) CFIA tested using the Avian Influenza matrix and H5H7 PCR test, and the test result was positive for the H5N1 type of Avian Influenza.

(xv) On December 31, 2024, CFIA issued a written Requirement to Quarantine, which was amended on January 2, 2025, January 12, 2025, and January 24, 2025.

(xvi) UOF has been complying with the requirements of the quarantine.

(xvii) Between about December 12, 2024, and January 15, 2025, 69 ostriches died of the H5N1 type symptoms.

(xviii) As of February 11, 2025, no ostriches died of H5N1 symptoms since January 15, 2025.

(xix) The only ostriches of the Herd that died of H5N1 type symptoms belonged to the group of ostriches that did not experience the pseudomonas infection in 2020.

(xx) Four ostriches have died of non-H5N1 type symptoms in January 2025. Three of these ostriches slipped on the ice and injured themselves, and one ostrich was caught in a fence.

(xxi) As of February 11, 2025, the remaining ostriches were not showing any signs of illness and appear healthy.

4 I was also provided with the following documents:

(i) Animal Health Centre medical report labelled AHC Case: 2410316.

(ii) CFIA lab test labelled 2025DCS-0000000033-4.

(iii) CFIA's email dated February 14, 2025, wherein the CFIA agent answered question #2 regarding testing the ostriches.

(iv) Universal Affidavit of Dr. Cathy Furness dated January 30, 2025.

5 All additional evidence relied upon in this report is provided as embedded citations.

**Questions to be Answered**

6 I have been asked to provide an expert opinion on the following two questions:

(i) Is stamping-out the only and/or most effective strategy for dealing with H5N1 in poultry or are there effective alternatives to the stamping-out policy when an animal, such as an ostrich, contracts H5N1 that would address the risk of H5N1 spreading to humans and other animals?

(ii) Can you please review Dr. Cathy Furness' Affidavit and comment on the risks the Universal Ostrich Farms' ostriches pose to the Canadian public and to other animals?

7 These questions to be answered are well within my realm of expertise.

**Qualifications of Dr. Byram Wayne Bridle**

8 I am an Associate Professor of Immunology and Virology in the Department of Pathobiology at the Ontario Veterinary College, University of Guelph, Guelph, Ontario, Canada. I have been conferred the degrees of Hon.B.Sc. in biomedical sciences (with distinction), M.Sc. in immunology, Ph.D. in immunology and completed a postdoctoral fellowship in viral immunology. I am both an immunologist and virologist. Both sciences are foundational to public health and the study of infectious diseases.

9 I also teach in several courses at the undergraduate, graduate, and post-graduate levels on the topics of immunology, virology, and cancer biology, for which I have received multiple prestigious awards. I teach veterinary immunology to students enrolled in the Doctor of Veterinary Medicine program at the Ontario Veterinary College, University of Guelph.

10 I have published extensively in the peer-reviewed scientific literature within my areas of expertise.

11 I have been granted millions of dollars in funding to facilitate research at the University of Guelph.

12 My research, teaching and service responsibilities are at the interface of human and animal health. A long-term emphasis of my research program has been on immune responses to viruses, which has been funded by the Natural Sciences and Engineering Research Council of Canada.

13 I have published on the topic of avian immunology[1], and avian viruses like avian orthoreovirus[2], and specifically on the topic of avian influenza[3,4,5]. I have also published on the broader topic of influenza and its relevance to both human and animal health[6].

14 I have established pre-clinical mouse model of influenza in my laboratory to study interventions to prevent or treat this disease.

15 I routinely handle viruses in my research program. Consequently, I have extensive expertise in biocontainment, testing, and research methods related to viruses.

16 I hold multiple patents related to viruses, including several specific to avian viruses. Notably, I have a patent pending for a novel fully synthetic reverse-engineered avian orthoavulavirus-1, and I am an inventor on a patent in the United States of America for using avian reovirus, avian orthoavulavirus-1, avian pox virus, chicken parvovirus, infectious bursal disease virus, and duck hepatitis A virus to treat cancers[7].

17 In February 2019, I was invited by the Canadian Institutes of Health Research ("CIHR"), which is the federal agency in Canada that provides funding for medical research, to serve a three-year term on their Viruses and Viral Pathogenesis grant review panel. Based on exceptional performance in this role, I received the prestigious honour in November 2020 of being invited to join the CIHR College of Reviewers and have received multiple distinctions for being rated as one of their top peer reviewers.

---

[1] Bridle BW, Julian R, Shewen PE, Vaillancourt JP, Kaushik AK. T lymphocyte subpopulations diverge in commercially raised chickens. Can J Vet Res. 2006 Jul;70(3):183-90. PMID: 16850940; PMCID: PMC1477934.

[2] Kozak RA, Hattin L, Biondi MJ, Corredor JC, Walsh S, Xue-Zhong M, Manuel J, McGilvray ID, Morgenstern J, Lusty E, Cherepanov V, McBey BA, Leishman D, Feld JJ, Bridle B, Nagy É. Replication and Oncolytic Activity of an Avian Orthoreovirus in Human Hepatocellular Carcinoma Cells. Viruses. 2017 Apr 24;9(4):90. doi: 10.3390/v9040090. PMID: 28441762; PMCID: PMC5408696.

[3] Alqazlan N, Astill J, Taha-Abdelaziz K, Nagy É, Bridle B, Sharif S. Probiotic Lactobacilli Enhance Immunogenicity of an Inactivated H9N2 Influenza Virus Vaccine in Chickens. Viral Immunol. 2021 Mar;34(2):86-95. doi: 10.1089/vim.2020.0209. Epub 2020 Nov 25. PMID: 33236974.

[4] Alqazlan N, Emam M, Nagy É, Bridle B, Sargolzaei M, Sharif S. Transcriptomics of chicken cecal tonsils and intestine after infection with low pathogenic avian influenza virus H9N2. Sci Rep. 2021 Oct 14;11(1):20462. doi: 10.1038/s41598-021-99182-3. PMID: 34650121; PMCID: PMC8517014.

[5] Alqazlan N, Alizadeh M, Boodhoo N, Taha-Abdelaziz K, Nagy E, Bridle B, Sharif S. Probiotic Lactobacilli Limit Avian Influenza Virus Subtype H9N2 Replication in Chicken Cecal Tonsil Mononuclear Cells. Vaccines (Basel). 2020 Oct 13;8(4):605. doi: 10.3390/vaccines8040605. PMID: 33066282; PMCID: PMC7712974.

[6] Chan L, Alizadeh K, Alizadeh K, Fazel F, Kakish JE, Karimi N, Knapp JP, Mehrani Y, Minott JA, Morovati S, Rghei A, Stegelmeier AA, Vanderkamp S, Karimi K, Bridle BW. Review of Influenza Virus Vaccines: The Qualitative Nature of Immune Responses to Infection and Vaccination Is a Critical Consideration. Vaccines (Basel). 2021 Sep 1;9(9):979. doi: 10.3390/vaccines9090979. PMID: 34579216; PMCID: PMC8471734.

[7] Patent #10829786

18 I have served as an expert witness in the following cases:

(i) Superior Court of Justice, Province of Ontario; Her Majesty the Queen in Right of Ontario v. Adamson Barbeque Limited & William Adamson Skelly; Court File No. CV-20-00652216-0000.

(ii) Court of Queen's Bench of Alberta; Brian Follett, Matt Chalupnicek, Kris Chlebek and Kaitlin King v. Dr. Verna Yui, President and Chief Executive Officer, Alberta Health Services; I do not have a court file number.

(iii) Federal Court of Canada; The Honourable A. Brian Peckford, Leesha Nikkanen, Ken Baigent, Drew Belobaba, Natalie Grcic, and Aedan MacDonald v. The Minister of Transport and The Attorney General of Canada; Court File No. T-168-22-ID-1.

(iv) Superior Court of Justice, Province of Ontario; Mariana Costa, Crystal Love, Alexandra Badowich and Angela Mandekic v. Seneca College of Applied Arts and Technology; Court File No. CV-22-00675035-0000.

(v) Court of Queen's Bench of Alberta; Annette Lewis v. Alberta Health Services, University of Alberta Hospital, Dr. Rhea Varughese, Dr. Dale Lein, Dr. Justin Weinkauf, Dr. Ali Kapasi, Dr. Kieran Halloran, and Dr. Alim Hirji; Court File No. 2112 00417.

(vi) Superior Court of Justice, Family Court, Province of Ontario; Pamela Kate Marie McIntyre versus Matthew John O'Brien Mooney; Court File No. FC 135-2020.

(vii) The Court of Appeal for Saskatchewan; Olena Mykolayivna Schemenauer versus. Evan Joseph Schemenauer; Court File Nos. C.A.C.V. 3903 of 2021, C.A.C.V. 3904 of 2021, and C.A.C.V. 3908 of 2021.

(viii) Court of Queen's Bench of Alberta; Gracelife Church of Edmonton, James Coates, Donna Klay, Allan Neill, and Achnes Smith v. The Province of Alberta as Represented by the Minister of Health, The Chief Medical Officer of Health, and Alberta Health Services; I do not have a court file number.

(ix) Hearing Tribunal for College of Chiropractors of Alberta; College of Chiropractors of Alberta versus Dr. Curtis Wall; Court File No. [not applicable].

(x) Superior Court of Justice, Province of Ontario; National Organized Workers Union versus Sinai Health Network; Court File No. CV-21-671579.

(xi) Superior Court of Justice, Province of Ontario; Sarah Harjee, Evan Kraayenbrink, Hibah Aoun, Sarah Lamb, Sam Sabourin, Jackie Ramnauth, Mark McDonough, Linda McDonough, and David Cohen versus Her Majesty the Queen in Right of Ontario; Court File No. CV-21-00670360-0000.

(xii) The High Court of New Zealand, Wellington Registry; NZDSOS Incorporated and NZTSOS Incorporated versus The Minister for COVID-19 Response, The Director-General of Health and Attorney-General; Court File No. CIV-2021-485-000595.

(xiii) The High Court of New Zealand, Wellington Registry; DCB ersus The Minister of Health, The Group Manager of the New Zealand Medical Devices Safety Authority (MEDSAFE) and The COVID-19 Response Minister; Court File No. CIV-2022-485-013.

(xiv) Superior Court of Justice, Family Court, Province of Ontario; This was a dispute about whether a child should receive a COVID-19 vaccine; I was not provided with a court file #.

(xv) Superior Court of Québec, Family Practice Division; This was a dispute about whether a child should receive a COVID-19 vaccine; I was not provided with a court file #.

(xvi) The High Court of New Zealand, Wellington Registry; New Health New Zealand Incorporated versus The Minister for COVID-19 Response and Attorney-General; Court File No. CIV-2022-485-379.

(xvii) The High Court of New Zealand, Wellington Registry; Te Whatu Ora, Health New Zealand, Te Toka Tumai versus Cole Savage-Reeves and Samantha Savage; Court File No. CIV-2022-404-2237.

(xviii) College of Nurses of Ontario and Sarah Choujounian-Abulu, Ontario, Canada. I do not have a court file number.

(xix) Michael Jackson versus the Crown, Saskatchewan, Canada. I did not have a court file number.

(xx) Brian Rybchuk versus GlaxoSmithKline Inc., Saskatchewan, Canada, court file #QGB-RG-01723-2022.

(xxi) Taryn Mototsune versus The College of Physicians and Surgeons of Ontario, Ontario, Canada, court file #CV-22-00683996-0000.

(xxii) Joanne Marie Moranino versus Barry Michael Smug, Ontario Court of Appeal, Ontario, Canada, court file #FC-23-438.

19 **Annexed** and marked **Exhibit "A"** is a copy of my Canadian Common Curriculum Vitae (CV).

**Background: Influenza Viruses and Influenza as an Infectious Disease**

20 Influenza viruses can cause a respiratory illness known as 'influenza' (or 'the flu" for short) in some people and animals that they infect.

21 Note that infection with a virus does not automatically equate to having a disease. A person or animal needs to have clinical signs and/or symptoms to be diseased. However, infection is a prerequisite for disease.

22 For influenza to be spread from one person or animal to another, a sick host must be actively shedding infectious viral particles (also called infectious virions). If no infectious virions are being shed, there is no risk of transmission of the disease.

23 Pathogenic influenza viruses are endemic in Canada.

24 People routinely get infected with human influenza viruses every year. Those whose innate physical and immunological barriers fail to rapidly clear the infection quickly enough can get the flu, and most cases are concentrated in what is colloquially known as the 'cold and flu' season, which spans the late-Fall to early Spring seasons in Canada.

25 Whereas human influenza viruses are adapted to infect and replicate in people, there are other influenza viruses that are adapted to infect and replicate in other species, including birds.

**Background: Influenza Viruses and Genetic Drift**

26 Influenza viruses have a propensity to change over time. A major feature of the life cycle of a virus involves replicating, or making copies of itself, inside the cells of a host animal. Part of this requires copying the genetic blueprint that the virus carries. This blueprint, better known as the 'genome' of the virus, is used to manufacture all the proteins needed to make the physical viral particle. These particles enclose a new copy of the genome to form a complete, new virus. However, when the blueprints (genomes) are copied, small errors are often introduced. This is because the protein required to copy the genome, also known as the viral polymerase, is inherently error prone. It randomly introduces mutations into new copies of the genome. This results in a 'swarm' of viruses during an infection, which will include rare variants with minor mutations. This is a survival mechanism. Should any of these mutations confer a survival advantage when environmental pressures are applied to a virus, one of these fitter mutant variants can become the dominant species over time, and less fit variants will go extinct. Consequently, viruses will slowly mutate over time. This phenomenon has been given the name 'genetic drift'.

**Background: Influenza Viruses and Genetic Shift**

27 Influenza viruses can also experience sudden and relatively large changes in their genetic structure due to a different phenomenon called 'genetic shift'. This occurs only rarely when two different influenza viruses find themselves replicating inside the same cell. Under this unusual circumstance, the two fundamentally different viruses can potentially swap 'chunks' of genetic material. This can result in the immediate generation of an influenza virus that is substantially different from either of the parental viruses. It would take the process of genetic drift much longer to achieve the same degree of genetic change.

**Background: Avian Influenza Virus**

28 There is a subset of influenza viruses, known as type A influenza viruses, that predominantly infect birds.

29 The predominant natural animal reservoir for type A influenza viruses is wild aquatic birds, including but not limited to ducks, geese and gulls, where this virus is endemic, meaning that it constantly circulates among this population.

30 The influenza viruses that predominantly infect birds will henceforth be referred to avian influenza viruses", or "AIV".

31 AIVs in reservoir populations often only cause mild disease. Many of these infected birds would present with only subtle clinical signs.

**Background: Why H5N1 Avian Influenza Virus ("H5N1 AIV") is a Concern[8,9]**

32 AIVs that cause the disease known as influenza in birds can be sub-divided into two main categories: low pathogenic AIV and highly pathogenic AIV. The former may be non-pathogenic (not cause any disease) or cause only mild disease in birds. However, highly pathogenic AIV has the potential to cause severe disease in birds and severe disease is usually associated with substantial shedding of infectious viral particles through physical mechanisms that promote transmission of large bolus doses of virions, such as coughing and sneezing.

33 Although AIV mainly infects birds, it can also infect mammals, sometimes including people.

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[8] Alexander DJ. A review of avian influenza in different bird species. Vet Microbiol. 2000 May 22;74(1-2):3-13. doi: 10.1016/s0378-1135(00)00160-7. PMID: 10799774.

[9] Darrel K. Styles, Yvonne Nadler, 38 - Avian Influenza: A Brief Overview of the Pathobiology and Current Status in Domestic and Nondomestic Species, Editor(s): R. Eric Miller, Nadine Lamberski, Paul P. Calle, Fowler's Zoo and Wild Animal Medicine Current Therapy, Volume 9, W.B. Saunders, 2019, Pages 262-266, ISBN 9780323552288, https://doi.org/10.1016/B978-0-323-55228-8.00038-2. (https://www.sciencedirect.com/science/article/pii/B9780323552288000382)

34 Highly pathogenic AIV can be potentially deadly if it gets transmitted to immunologically naïve domestic poultry, meaning that the infected birds lack immunity to the virus. There may also be the risk of highly pathogenic AIV getting transmitted to people. It is generally accepted that AIV represents a low risk of serious disease in people, especially those who are healthy. Although rare, it does have the potential to be fatal in people with frail immune systems and those with multiple co-morbidities that lack any pre-existing immunity against the virus.

35 Variants of influenza viruses are defined based on subsets of proteins they express in the outer portion of the viral particle. Specifically, two of the surface-exposed proteins are known as the hemagglutinin ("H") and neuraminidase ("N"), respectively. The different subtypes of these proteins have been given numerical designations. Therefore, variants of AIV can be identified based on which H and N proteins they have.

36 Categorization of an AIV being 'highly pathogenic' is functionally based on its ability to kill 75-100% of domestic poultry within highly susceptible flocks (usually chickens), and/or its propensity to cause systemic disease, which means signs of illness that extend beyond the respiratory tract.

37 Generally, AIVs are defined as being of low pathogenicity of the fatality rate is substantially less than 75% and any signs of disease are localised, which usually means being limited to the respiratory tract.

38 Highly pathogenic AIVs seem to be limited to those expressing H5 or H7 hemagglutinin proteins. With that said, expression of H5 or H7 should never automatically confer a label of high pathogenicity because there are also low pathogenic variants that express these two versions of the hemagglutinin protein. In fact, most AIVs expressing H5 or H7 are of low pathogenicity.

39 So, the presence of H5 and H7 is indicative only of the potential for the virus to have a highly pathogenic phenotype. Further testing would need to be done to determine whether a H5 AIV or H7 AIV is of low or high pathogenicity.

40 For example, if H5-positive, this additional testing would normally involve sequencing the H5 gene to assess a specific region, known as the 'cleavage region'. If the cleavage region contained what are known as 'multiple basic amino acids', this would meet most regulatory definitions for highly pathogenic AIV.

41 One of these highly pathogenic variants of AIV expressing H5 with a multi-basic cleavage site emerged in an outbreak in commercial poultry in Asia back in 2013-2015. It also expressed the N1 protein so it is known as the H5N1 variant of AIV, and it can be highly pathogenic in domestic poultry, and can even cause severe disease in some wild birds, and can also represent a low risk for people.

**Background: The Types of Birds and How they are Farmed Influences Pathogenicity of AIV**

42 Intensively raised commercial chickens and turkeys have a propensity for generating variants of H5 and H7 AIVs introduced by wild birds that become highly pathogenic within these domestic flocks.

43 This correlates with indoor housing of massive numbers of birds, in highly confined spaces, under extremely stressful conditions that are potently immunosuppressive and far from the natural conditions these animals are adapted for. This is confounded by the fact that historical breeding strategies for intensively raised commercial chickens and turkeys has neglected to account for harmful impacts on their immune systems, resulting in populations with immunogenetic bottleneck restrictions.

44 The result of these immunologically neglectful practices tends to be flocks of chickens and turkeys where some infectious diseases like AIV can run rampantly through them.

45 In contrast, more genetically diverse domestic birds that are housed over a larger area, especially with access to the outdoors, that have not been intensively bred for the sole purpose of maximizing commercial production parameters like egg yield and muscle mass, tend to be more resistant to infectious diseases. This is because they have more diverse immunogenetics, experience much less stress-induced immunosuppression, and they get exposed to sunlight of sufficient strength for at least part of the year to facilitate the natural production of vitamin D, which is an essential micronutrient for optimal functioning of the immune system.

**Background: Placing Risk of Genetic Shift of H5N1 AIV into Context**

46 One of the major concerns with infections of birds with H5N1 AIV is the potential for genetic shift to occur, resulting in the emergence of a novel variant that may have enhanced transmissibility and lethality for domestic animals and/or people. However, it is important to place this risk into an appropriate context.

47 First, a bird would need to be infected simultaneously with two different influenza viruses.

48 Second, both viruses would have to get inside the same cell. This would be a rare event because of the principle known as 'viral exclusion' or 'superinfection exclusion'[10]. Most viruses, after infecting a cell, render it difficult for a second virus to infect the same cell. This is a mechanism that is designed to avoid sharing of resources and potential combinations with other viral species to ensure survival of the virus as it currently exists.

[10] Sims A, Tornaletti LB, Jasim S, Pirillo C, Devlin R, Hirst JC, Loney C, Wojtus J, Sloan E, Thorley L, Boutell C, Roberts E, Hutchinson E. Superinfection exclusion creates spatially distinct influenza virus populations. PLoS Biol. 2023 Feb 9;21(2):e3001941. doi: 10.1371/journal.pbio.3001941. PMID: 36757937; PMCID: PMC9910727.

49 If genetic shift does occur, there can be three potential outcomes: First, it could have a neutral effect on the virus. In this case, the net effect of the changes failed to impart any functional consequences. Second, it could render the virus less fit for survival so that it goes extinct, or the genetic alterations could be outright lethal to the virus. Third, it could produce a virus with enhanced pathogenicity and/or transmissibility.

50 So, when talking about birds serving as mixing vessels of potentially more dangerous variants of AIV, the risk is extremely low, as demonstrated by the relatively few historical outbreaks around the globe.

**Testing for AIV: Limitations and Nuances of PCR Testing and the Need for Functional Testing**

51 "PCR" testing refers to 'polymerase chain reaction' testing. It can be used to help identify whether a virus or portions thereof are present within a sample. A polymerase is a protein that can copy DNA, which is a genetic blueprint. If DNA is in a sample, when a scientist adds a polymerase, a few other ingredients, and then uses a special machine called a thermocycler to cycle the ingredients through various temperature settings, new copies of the DNA will be made. With each 'cycle' that the PCR test is run, more copies of the genetic blueprint will be made if the targeted blueprint is present. Once a threshold number of copies appear in the sample, they can be detected. Think of it like a photocopier. From a great distance, you might not be able to tell if a single copy of a page has been made. However, once you have a stack of five hundred pages sitting on the output tray, they can be readily detected and you know for sure that the photocopier is churning out copies. In short, PCR is a method that scientists can use to determine whether a portion of a particular genetic blueprint is present in a sample, but only if this method is employed properly.

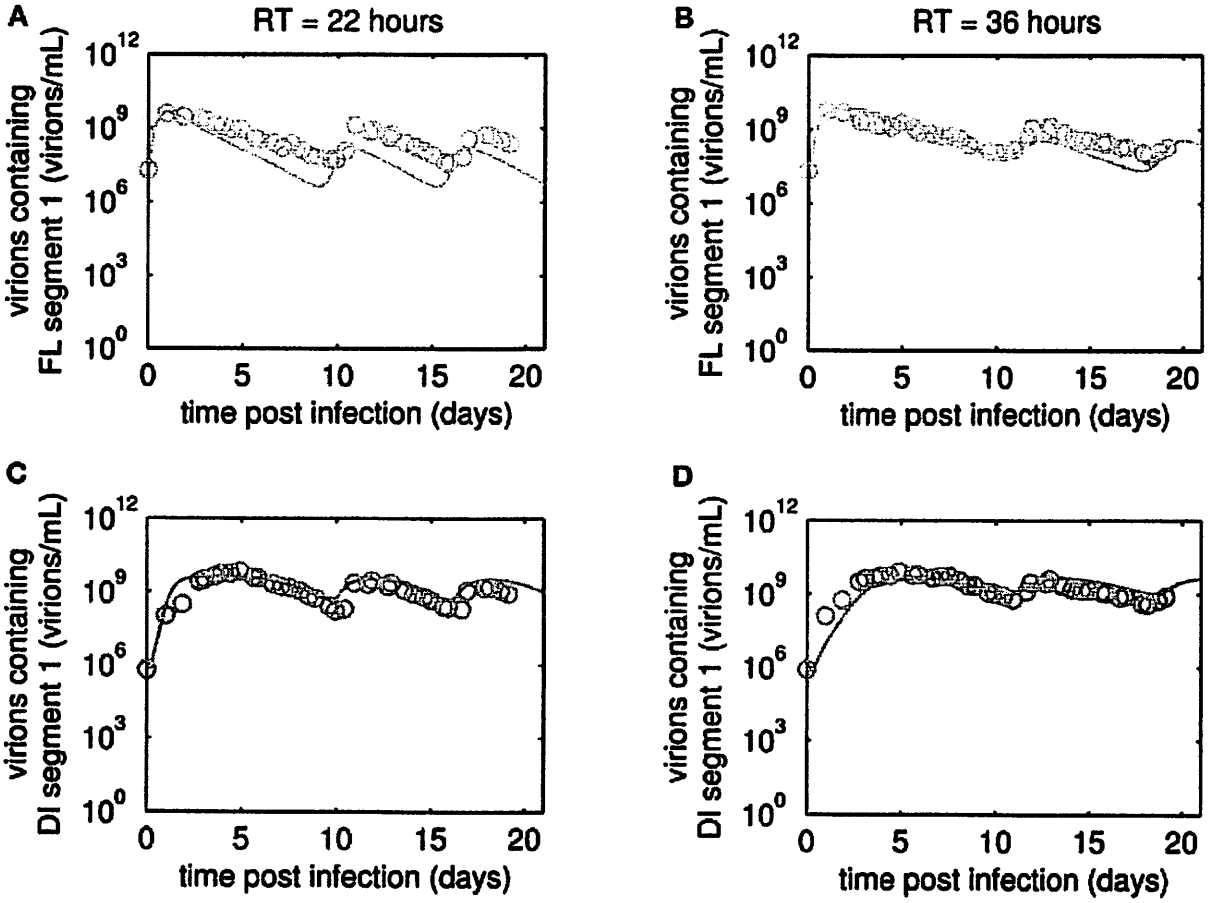
52 In the case of AIV, its genetic blueprint is not made of DNA. Instead, it is made of a related structure called 'RNA'. Therefore, to use the PCR test to determine whether portions of an RNA-based virus like AIV is present in a sample requires one additional step at the beginning. Specifically, a 'reverse transcriptase' is used to convert the RNA from AIV into DNA, portions of which can then be detected with the PCR test.

53 So, technically speaking, for AIV, the specific test used to detect portions of its genetic blueprint is called a reverse transcriptase polymerase chain reaction ("RT-PCR").

54 It is important to note that RT-PCR testing does not differentiate between intact and partially degraded viruses, nor replication-competent (live) and defective (dead) viral particles, and only intact replication-competent viral particles have the potential to facilitate disease transmission. Consequently, it is important to always use a functional test in parallel with RT-PCR so the results can be interpreted in the context of risk of transmissibility of disease.

55 When influenza viruses replicate, most of the resultant virions are defective and cannot facilitate transmission of disease[11]. In a representative study by Tapia, *et al.*, the number of replication-competent (infectious) and defective (non-infectious) influenza virions were quantified under ideal cell culture conditions. Note that under field conditions (*i.e.*, infection of a host), the environment is sub-optimal for viral replication. So, this study likely underestimates the ratio of competent-to-defective virions. Understanding this nuance, the results were as follows:

56

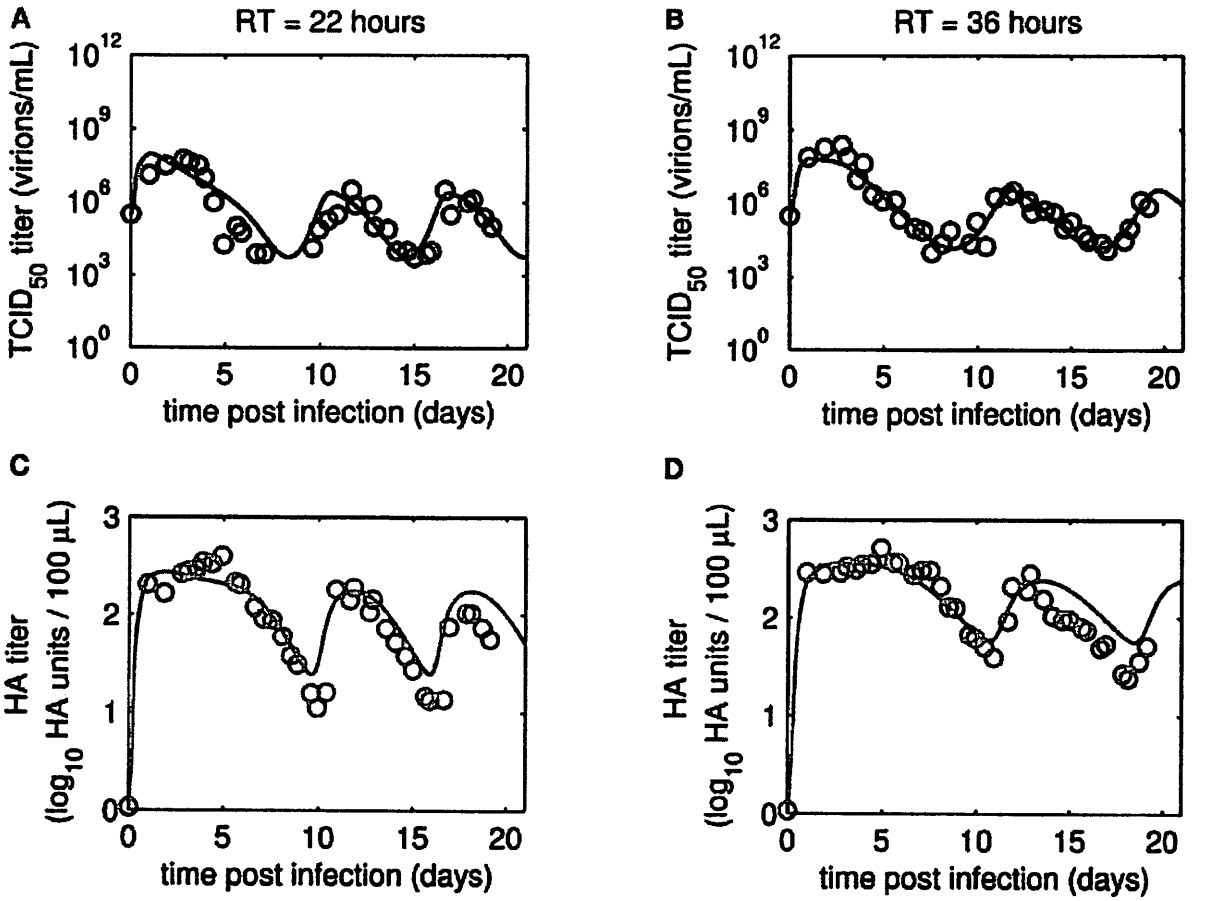



57 ...these graphs show the quantity of influenza virions based on RT-PCR testing, which identifies total virions (both replication-competent and defective). If we look at the 22-hour timepoint in panel A as an example, the total number of virions peaked at 4.0e9 virions/mL (as reported in the text of the published paper).

[11] Tapia F, Laske T, Wasik MA, Rammhold M, Genzel Y, Reichl U. Production of Defective Interfering Particles of Influenza A Virus in Parallel Continuous Cultures at Two Residence Times-Insights From qPCR Measurements and Viral Dynamics Modeling. Front Bioeng Biotechnol. 2019 Oct 18;7:275. doi: 10.3389/fbioe.2019.00275. PMID: 31681751; PMCID: PMC6813217.

58 Then there is this figure...

59




60 Panels A and B quantified the influenza virus using what is called a Tissue Culture Infective Dose-50% ("$TCID_{50}$") assay in which one identifies the dose that kills ~50% of the cells being cultured in a well. It is a functional virology assay, so it quantifies replication-competent (infectious) virions. Because of how this assay works, the $TCID_{50}$ dose is an over-estimate of the actual number of infectious virions. So, one must apply a conversion factor to estimate 'Plaque-Forming Units' ("PFU"), which is a much more accurate approximation of the total number of infectious virions (because one replication-competent virion will form a plaque [clearing] in a cell monolayer). This conversion rate of 0.67x to go from $TCID_{50}$ to PFU is routinely used in the peer-reviewed scientific literature[12,13,14].

[12] Karber G. Breitag Zur kollektiven behandlung pharmakologischer reihenver- suche. Archiv fur Experimentelle Pathologie und Pharmakologie 1931;162:480–3.

[13] Wulff NH, Tzatzaris M, Young PJ. Monte Carlo simulation of the Spearman-Kaerber TCID50. J Clin Bioinforma 2012;2:1–5.doi:10.1186/2043-9113-2-5pmid:http://www.ncbi.nlm.nih.gov/pubmed/22330733

[14] Bryan WR. Interpretation of host response in quantitative studies on animal viruses. Ann N Y Acad Sci 1957;69:698–728.doi:10.1111/j.1749-6632.1957.tb49710.xpmid:http://www.ncbi.nlm.nih.gov/pubmed/13488325

61 If we look at panel A in the figure above, the $TCID_{50}$ peaked (as per the text in the published paper) at 5.6e7 virions/mL. This converts to 5.6e7 x0.67 = 3.752e7 PFU/mL.

62 So, under ideal conditions and at the peak, the culture yielded (per mL) 4.0e9 total virions, but only 3.752e7 of them were replication competent. That is a 106:1 ratio of competent versus defective virions. Expressed another way, only 0.9% of the virions were potentially infectious.

63 To place this into a context, it is only a minority of viral particles shed by birds that are actively infected with AIV that are capable of causing disease.

64 In an RT-PCR assay, in which amplification of viral genomes is close to exponential, this represents a difference of ~6 to 7 cycles to detect competent versus incompetent virions. And this is in a best-case scenario for the virus (*i.e.*, optimal cell culture). This difference may be amplified under real-world conditions.

65 This is why there should always be determination of a second, much lower cycle threshold cutoff where one gains confidence that infectious virions may be present. And it is another reason why RT-PCR on its own should never be used to assess risk of transmission.

66 Another point to consider with RT-PCR tests is how the limit for cycle thresholds is set to define the upper cut-off for a positive result. This requires careful calibration because excessive cycling risks erroneous amplification of non-specific background material that can result in false positives. This is yet another reason why cycle thresholds should be reported alongside test results, with a clear indication of what the upper limit was and how it was established. Positive results at or near the upper limit may be less reliable.

67 In addition to the potential for false positive tests, true positive results can also be obtained from genomes of viral particles that are no longer infectious. An example of the latter would be a bird that mounted an effective immune response and may have remnant replication-incompetent viral particles or partially degraded viral genetic material inside relatively long-lived white blood cells that have killed the virus. These cells are known as 'phagocytes' and are part of the immune system. Indeed, following clearance of viral particles from the body, full and/or partial genomes can remain for up to several weeks inside these phagocytes. Phagocytosis (or 'eating') of viral particles is a mechanism to kill and remove the virus from the body. These phagocytic cells tend to hang on to these 'killed' virions so that they can potentially activate other immunological effector cells, including B cells that produce protective antibodies. As such, these phagocytes can be a source of viral genomes that could be amplified by a PCR test. However, these genomes would not have the potential to cause influenza in another animal. Instead, it would be evidence that the infection has been successfully resolved. Persistence of whole or partial viral genomes that are not associated with infectious particles is well-

documented[15,16,17]. A positive RT-PCR test for the presence of AIV, on its own, is not proof of the presence of infectious virions. This requires additional functional virology data.

68 Testing conducted at the biocontainment level-3 and -4 laboratory in Winnipeg, Manitoba, co-operated by the CFIA and Public Health Agency of Cananda has demonstrated how functional virology assays should be used to establish lower cycle thresholds for RT-PCR assays to highlight samples that are likely to have infectious viral particles[18].

69 To facilitate assessment of results of RT-PCR testing, the cycle threshold at which positive results were obtained should be disclosed, since this can correlate with viral burden. Samples from sick animals with infectious virions typically generate positive results at lower cycle thresholds than those from animals with low viral burdens and lacking substantial numbers of infectious particles. It is the recommendation of global health care agencies that cycle threshold numbers be reported to facilitate this type of nuanced and more informed assessment of risk. For example, the World Health Organization has noted that "Most PCR assays are indicated as an aid for diagnosis, therefore, health care providers must consider any result in combination with timing of sampling, specimen type, assay specifics, clinical observations, patient history, confirmed status of any contacts, and epidemiological information"[19]. Further, they recommend to "Provide the [cycle threshold] value in the report to the requesting health care provider".

**Testing to Assess Risk of Transmission of AIV**

70 A bird can only present a risk of transmitting AIV if it is actively shedding replication-competent, infectious viral particles above the threshold dose needed to bypass the innate physical and immunological barriers of another potential host. This means that functional tests capable of detecting infectious virions are required to assess this risk.

71 Such tests include but are not limited to the gold standard of attempted isolation of the AIV in embryonated eggs. If infectious virus particles are present this will typically result in death of the embryonic chick and amplification of the number of virions, which can facilitate additional testing such as genomic sequencing. Successful isolation of the virus would be indicative of the presence of

[15] Lin, W.H., Kouyos, R.D., Adams, R.J., Grenfell, B.T. & Griffin, D.E. Prolonged persistence of measles virus RNA is characteristic of primary infection dynamics. Proc Natl Acad Sci U S A 109, 14989-14994 (2012).
[16] Bin, S.Y. et al. Environmental Contamination and Viral Shedding in MERS Patients During MERS-CoV Outbreak in South Korea. Clinical infectious diseases : an official publication of the Infectious Diseases Society of America 62, 755-760 (2016).
[17] Owusu, M. et al. Human coronaviruses associated with upper respiratory tract infections in three rural areas of Ghana. PloS one 9, e99782 (2014).
[18] Bullard, J. et al. Predicting Infectious Severe Acute Respiratory Syndrome Coronavirus 2 From Diagnostic Samples. Clinical infectious diseases : an official publication of the Infectious Diseases Society of America 71, 2663-2666 (2020).
[19] https://www.who.int/news/item/20-01-2021-who-information-notice-for-ivd-users-2020-05. (accessed March 3, 2025).

infectious viral particles in the original sample. In turn, this would be suggestive of risk of transmission of the virus to other animals.

**Assessing the Evidence Provided to Me**

72 I was provided with several pieces of evidence to review. Since I was specifically asked to comment on the affidavit written by Dr. Cathy Furness, I will defer that to last. Here, I will comment on the twenty-one material facts that were provided to me, "Animal Health Centre medical report labelled AHC Case: 2410316", "CFIA lab test labelled 2025DCS-0000000033-4", and "CFIA's email dated February 14, 2025, wherein the CFIA agent answered question #2 regarding testing the ostriches".

**Assessing the Evidence: Twenty-one material facts**

73 The property where UOF is located is geographically isolated and ostriches are land-based birds, so the risk of direct transmission of AIV to other domestic birds or people is low. The primary risk would be via wild birds or people in direct contact with the ostriches, but both can be mitigated through standard biosecurity and quarantine protocols, which were appropriately implemented. Risk of transmission is zero if/when virus shedding has ceased.

74 There is epidemiological evidence that the 250 ostriches housed on the Property in 2020 survived an infectious disease outbreak at that time. The outbreak was not defined as involving AIV, but there is also no evidence that a role for AIV was excluded and viral infections can often potentiate infections with other pathogens.

75 A second outbreak occurred recently, in December 2024.

76 The fact that the recent outbreak of disease, which included fatalities, was limited to the more recent stock of ostriches is remarkable and strongly suggests that the birds that had been on the property in 2022 had likely been exposed to an AIV that resulted in cross-protective immunity against the current H5N1 AIV, since these birds did not get sick during the most recent outbreak. Naturally acquired cross-reactive immunity would be the most reasonable explanation for why these ostriches were resistant to the recent outbreak.

77 There is evidence that the most recent outbreak was caused by an H5N1 AIV.

78 The ostriches were appropriately quarantined.

79 A total of 69 ostriches died, but four had evidence to suggest they died from causes other than influenza, bringing this number to 64 birds. This means the fatality rate was well below 75%, which is partial functional evidence suggesting that the H5N1 AIV behaved more like a low pathogenic virus in this flock of birds. It is unclear to me whether the disease manifested as a localized (*i.e.*,

limited to the respiratory tract) or systemic disease. The former would be further functional evidence of the disease manifesting as a less pathogenic form in these ostriches, whereas the latter would be suggestive of severe disease. Nonetheless, the disease severity is much lower than what would be expected for the average commercial flock of chickens or turkeys. There was variability in the presentation of disease, which is normal for any population of animals.

80 The resolution of clinical signs in the diseased ostriches followed by the prolonged period with no deaths suggests the influenza has run its course in this flock of ostriches and that they now have state-of-the-art naturally acquired immunity against H5N1 AIV.

81 There is also a high probability that anyone working with the ostriches during this outbreak may have naturally acquired immunity against H5N1 AIV.

82 The totality of this evidence suggests to me that the current risk of transmission of H5N1 AIV from these ostriches is likely very low to zero.

**Assessing the Evidence: Animal Health Centre medical report labelled AHC Case: 2410316**

83 On December 31, 2024, two swab samples appear to have been tested by RT-PCR for the H5 and H7 genes from AIV. I cannot confirm the accuracy of the evaluated sequences in terms of their ability to identify the unique subvariant sequence that was reported. Assuming the primer set(s) were appropriate for the accurate detection of the gene variants that are listed, and that the assay was calibrated and run correctly with cycle thresholds properly rationalized, it appears that both swabs tested positive for the presence of a fraction of the genetic sequence of the H5 protein from AIV. This test is unable to provide any indication of whether this genetic material came from infectious or non-infectious viral particles or portions thereof. It is unclear to me whether this test was able to identify a multi-basic cleavage site in the H5 gene, which would be indicative of a variant of AIV that is highly pathogenic in domestic chickens and turkeys.

**Assessing the Evidence: CFIA lab test labelled 2025DCS-0000000033-4**

84 Two swab samples were shipped from the laboratory in BC on January 2, 2025, and they arrived at the laboratory in Manitoba on January 3, 2025. It appears that two types of laboratory tests were performed, first, RT-PCR, and then attempted isolation of viruses. Positive results were obtained for both samples by both tests. Successful isolation of viruses is indicative of the presence of replication-competent (also known is 'infectious') viral particles in the samples from the two dead ostriches. I do not know which primer sets were used in the PCR assay, nor how many primer sets were used per gene segment, nor whether more gene segments were queried beyond those listed among the positive

results. Consequently, I cannot confirm the accuracy of the evaluated sequences in terms of their ability to identify the unique subvariant sequences that were reported. Assuming the primer sets were appropriate for the accurate detection of the gene variants that are listed, and that the assay was calibrated and run correctly with appropriately rationalized cycle threshold cut-offs, it appears the viruses isolated from the two ostriches were H5N1 avian influenza virus of mixed North American and Eurasian lineages. Only partial genome sequences were obtained from the viruses, but they seem to confirm the assessment that they were the type of AIV that his highly pathogenic in domestic chickens and turkeys.

85 The successful isolation of the virus is indicative of infectious viral particles having been present in the samples.

86 Reporting the cycle threshold at which positive results were obtained would have been helpful, since this can correlate with viral burden. Samples from sick animals with infectious virions typically generate positive results at lower cycle thresholds than those from animals with low viral burdens and lacking substantial numbers of infectious particles. It is the recommendation of global health care agencies that cycle threshold numbers be reported to facilitate this type of nuanced and more informed assessment of risk.

87 Overall, these results suggest that the two dead ostriches that were sampled were infected with H5N1 AIV viral particles of a subtype sharing the North American and Eurasian lineages and that at least some of these viral particles were replication-competent and, therefore, potentially transmissible at the time of sampling.

**Assessing the Evidence: CFIA's email dated February 14, 2025, wherein the CFIA agent answered question #2 regarding testing the ostriches**

88 The CFIA stated, "The entire ostrich herd already meets the case definition for HPAI (confirmed positive results within the epidemiological unit). Because of this, further testing would have no impact on the measures required to meet the goals of eradicating HPAI in domestic poultry".

89 Scientifically, this makes no sense. If the ostriches are currently healthy and not shedding the virus, then they do not have HPAI and the goal has been met, with the bonus that there is now a geographical location capable of impeding the spread of HPAI by wild birds.

90 The CFIA stated that "Some species of birds, including ostriches, can be infected with avian influenza while showing few or no clinical signs of illness. In these cases, the ostriches can appear healthy yet actively shed and transmit the virus while also facilitating potential mutation".

91 This statement fails to recognize that the ostriches at UOF have recovered from an outbreak of H5N1 AIV. There is debate in the scientific literature as to whether pre-symptomatic birds (*i.e.*, birds that are destined to get sick but aren't showing signs yet because the viral burden is too low) can transmit sufficient virions to get others sick. This unlikely to begin with, but is a moot point because the evidence suggests the ostriches have recovered from the outbreak. The scientific literature also suggests that reservoir species may show lesser signs when infected with highly pathogenic AIV than domestic birds, but the concept of being asymptomatic is usually the result of lack of close observation of most wild birds. In this case, there were clear signs of illness among some of the ostriches that have subsequently recovered. I have not been able to find any evidence in the scientific literature to suggest that any birds that recover from HPAI manifest as asymptomatic shedders of infectious AIV particles, which would counter basic immunology because it would mean that this pathogenic virus that was rejected from the body has somehow become part of the normal microbiome of the birds. The evidence before me suggests the ostriches are likely not harbouring any AIV.

92 The CFIA stated, "Mutation is a serious concern because certain mutations can create new strains of the virus and cause the virus to become more pathogenic or likely to infect other birds and mammals, including people. A specific group of mutations that help the virus replicate better in mammals are known to commonly occur during infections in ostriches."

93 I did not see any evidence for this provided by the CIFA. However, I do agree that the principle of genetic shift is an extremely low but real risk during an active co-infection with two influenza viruses, and if a novel variant were to be spread beyond the confines of the outbreak. However, the evidence shows that proper containment measures were instituted during the outbreak and there is no current outbreak, but likely naturally acquired immunity in the flock. Therefore, there is no appreciable risk at this time of the emergence, let alone transmission, of a novel variant.

94 The CFIA stated, "The National Center for Foreign Animal Disease (NCFAD) identified that the current HPAI infection in these ostriches is a novel reassortment not seen elsewhere in Canada during the HPAI 2022 event."

95 It is not unexpected that there would be a new variant circulating in the natural reservoir populations more than two years later. This suggests the novel variant is likely circulating in the wild bird population that spans international borders, and that would be the most likely source for introduction into the ostriches at UOF.

96 The CFIA stated, "The propensity of the virus to mutate combined with the continued existence of a diseased population of birds, such as this ostrich farm, whereby the birds remain a vessel for further

novel viral mutation and inapparent hosts of disease, renders a high public health concern related to the continued survival of the infected birds."

97 This statement fails to recognize the material facts, which indicate there is no current diseased population of birds at UOF.

98 The CFIA stated, "CFIA has adopted a policy of "stamping out", which aligns with international standards including those employed by the World Organisation of Animal Health (WOAH) and ensures that poultry flocks infected with or exposed to highly pathogenic Avian Influenza are humanely destroyed, regardless of whether the animals show clinical signs."

99 This makes no scientific sense unless there is active shedding from birds of enough infectious viral particles to overcome the immediate physical and innate immunological barriers of other potential hosts. The evidence suggests the ostriches are likely virus-free.

100 The CFIA stated, "The stamping out policy necessarily mitigates the risk of further spread of the virus, its opportunity for mutation, and the risk of transmission to humans."

101 This is unnecessary if there is no risk of transmission. The CFIA and the owners of UOF apparently did an excellent job of containing the outbreak, which has run its course, and the evidence suggests the ostriches likely have state-of-the-art naturally acquired immunity against H5N1 AIV. This is a great example of how an outbreak can be managed without having to engage in the ethical and economic harms of unnecessary depopulation. The Terrestrial Animal Health Code of the World Organisation for Animal Health (page 11 of the affidavit of Dr. Cathy Furness) allows for HPAI-free status to be restored to a location after one year of surveillance testing showing an absence of the virus. The ostriches at UOF are likely in an ideal scenario to demonstrate this should they be left on site.

**'Stamping Out' Versus Alternatives to Mitigate Risk of Spread of H5N1 Avian Influenza Virus**

102 There is no doubt that H5N1 AIV can be dangerous both to farmed birds and potentially for people. Consequently, it is important to implement strategies to minimize the risk of it being transmitted.

103 First, it is important to note that there is little that can be done to effectively mitigate the endemic spread of AIV within Canada's wild bird population, which routinely crosses multiple international borders. So, efforts need to focus on domestic birds.

104 The current solution with the ostriches that was put forward by the CFIA is known as 'stamping out' the risk. This was proposed following the historical classification of two dead birds as having had H5N1 AIV.

105 With 'stamping out', a flock of birds is first quarantined to appropriately prevent risk of any actively shed infectious AIV particles getting transmitted to people or animals. Subsequently, this approach would have all birds slaughtered.

106 But this assumes that all the birds have the potential to transmit the virus to other animals or people at the time of slaughter.

107 This is a flawed assumption. This results in animals being killed regardless of whether they are shedding the virus or not and it is unnecessary, useless, and even counter-productive to kill birds that are unable to transmit disease.

108 A viable and superior alternative when there is evidence of naturally acquired immunity is to embrace the validity of gold-standard naturally acquired immunity. Such an approach allows the establishment of a geographical zone that is resistant to the spread of AIV by letting healthy immune birds with long-term immunological memory populate the site instead of repopulating them with immunologically naïve birds that are immediately susceptible to potential re-introduction of AIV.

109 Again, a stamping out policy fails to address the primary problem, which is that AIV is endemic in the wild bird population. Perseverating on this approach while ignoring the value that can be added through naturally acquired immunity results in the historically demonstrated cyclic pattern of slaughtering food-producing animals and replacing them with immunologically naïve stock that will be highly susceptible to both the same and future circulating variants of AIV.

110 Naturally acquired immunity means that an animal is protected against the variant they were exposed to. It also confers cross-reactive immunity against newly emerging variants because these novel variants cannot change enough to completely bypass the breadth of naturally acquired immunity.

111 And even partial cross-reactive immunity means that disease severity and transmission of infectious virions would be reduced, which is superior to having immunologically naïve birds that get severely infected and then shed far more infectious virions.

112 Reliance on wholesale slaughter of farmed animals regardless of their viral shedding and immunological status causes domestic birds to remain isolated from the virological world while AIVs continue to mutate in their wild reservoirs. Exposure of immunologically naïve birds at a later point in time increases their risks of getting infected with these viruses, promotes increased disease severity when this happens, and then maximizes the acute loads of infectious virions to support transmission.

113 A superior approach is keeping flocks that have recovered from infection with AIV to establish a geographical barrier to the future spread of AIV. This is akin to natural vaccination.

114 Wild birds landing in areas populated by domestic birds that are immune cannot easily acquire or introduce H5N1 HPAI viruses. This would help reduce risk of endemic spread in that region.

115 Slaughtering the birds and repopulating them with naïve ones would not only prevent the opportunity to establish this barrier to the spread of AIV it would immediately re-open the potential for it to happen all over again.

116 Further, birds surviving an outbreak with naturally acquired immunity may have enhanced breeding value. They could potentially be used to select breeding stock that are naturally resistant to HPAI.

**Comments on Affidavit Written by Dr. Cathy Furness**

117 After reviewing the affidavit of Dr. Cathy Furness, I have the following comments:

118 The affidavit demonstrates an excellent understanding of the biology underpinning avian influenza. It also provides a strong and reasonable rationale for why it is important to formulate strategies in Canada to effectively mitigate the spread of highly pathogenic AIVs to secure the health, both physical and economic, of animals and people.

119 Paragraph 11 of the affidavit states, "Birds without signs of infection can still actively transmit the virus and facilitate its mutation". And paragraph 21 says, "ostriches typically do not show clinical signs of infection of AI but can nonetheless continue to replicate, mutate, and shed the virus". No evidence is provided. I caution that this likely refers to the scientific debate about two stages of disease. First, there is debate about whether presymptomatic transmission can be a major driver of the spread of infectious diseases. To clarify, this is only relevant to birds at the stage prior to the onset of disease. Second, there is debate about whether immunologically naïve birds can be actively infected with a dangerous virus and not shown any signs of illness yet shed sufficient infectious viral particles to risk making other birds sick. Both are moot points in the current case because the material evidence shows the flock of ostriches did have clear clinical signs of AIV, confirmed by laboratory testing, and they are now in the fully recovered post-disease phase. Birds that have recovered from a disease caused by infection with a highly pathogenic virus do not remain active shedders of infectious viral particles. To do so would mean that the highly pathogenic AIV has become part of their normal microbiome, which would be immunologically preposterous.

120 I agree with paragraph 12 in the affidavit, specifically, that AIV represents a low risk to humans.

121 Paragraph 16 notes the story of a teenager in British Columbia became that became critically ill, presumably from HPAI in the Fall of 2024. It is important to place this into an appropriate context. What was not disclosed is that this teenager had multiple predisposing co-morbidities. One was

substantial obesity, with a body mass index >35[20]. The second was a chronic respiratory issue, specifically, asthma. Each of these, on their own, render an individual at elevated risk for most infectious respiratory diseases, which is amplified when combined. Further, and remarkably, no data were ever presented to rule in or out the possibility of a co-infection. For example, viral infections can render a person susceptible to bacterial co-infections and the latter can then be the predominant drivers of severe disease[21]. Even if this was a case of primary HPAI in a high-risk individual, it is one person in a population of 5,698,430 in the province[22], and would confirm the rarity of potential transmission to people, especially those who are healthy. Also, this person has recovered from the infection.

122 Most of the remainder of the affidavit discussed the 'stamping out' strategy but neglected to discuss the concept of naturally acquired immunity and the benefits that could be garnered by embracing it.

123 Nor is the nonsensical nature of killing animals that are not shedding a virus acknowledged anywhere in the affidavit.

124 In the absence of any scientific citations, I was surprised to see the following stated in paragraph 21, "Additionally, ostriches have potential to contribute genetic mutations to avian influenza viruses that may increase viral adaptability to mammalian hosts". Ostriches are birds, not mammals. I am unaware of any features of ostriches that would render them unique in terms of some kind of ability to potentiate infections in mammals over and above what any other bird could mediate. I was unable to find support for this in the peer-reviewed scientific literature.

125 In paragraph 33, I noted the recognition of the potential value of genetics that may enhance the Canadian poultry industry. I suggest that consideration be given to the potential value of selecting breeding stock from ostriches at UOF that survived the outbreak of H5N1 AIV with minimal clinical signs. These could potentially be used to produce new generations of ostriches with immunogenetics that render them resistant to avian influenza. This could be a valuable avenue of research to help breed disease resistance into Canada's ostriches.

**Risks the Universal Ostrich Farms' Ostriches Pose to the Canadian Public and to Other Animals**

126 The material facts before me suggest the ostriches at UOF have naturally acquired immunity against H5N1 AIV, which would mean they are not harbouring nor shedding infectious virus particles.

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[20] Jassem AN, Roberts A, Tyson J, Zlosnik JEA, Russell SL, Caleta JM, Eckbo EJ, Gao R, Chestley T, Grant J, Uyeki TM, Prystajecky NA, Himsworth CG, MacBain E, Ranadheera C, Li L, Hoang LMN, Bastien N, Goldfarb DM. Critical Illness in an Adolescent with Influenza A(H5N1) Virus Infection. N Engl J Med. 2025 Feb 27;392(9):927-929. doi: 10.1056/NEJMc2415890. Epub 2024 Dec 31. PMID: 39740022.

[21] Prasso JE, Deng JC. Postviral Complications: Bacterial Pneumonia. Clin Chest Med. 2017 Mar;38(1):127-138. doi: 10.1016/j.ccm.2016.11.006. Epub 2016 Dec 13. PMID: 28159155; PMCID: PMC5324726.

[22] https://www2.gov.bc.ca/gov/content/data/statistics/people-population-community/population/population-estimates (accessed March 3, 2025)

127 If they are not harbouring infectious H5N1 AIV, the ostriches do not represent a risk of facilitating the emergence of a new genetic variant.

128 And if they are not shedding replication-competent viral particles, then they would be incapable of transmitting the virus.

129 Consequently, slaughtering them would be unnecessary because the effective implementation of biocontainment and quarantine protocols by the CFIA and owners has already accomplished the goal of mitigating risk of transmission.

130 Therefore, unless evidence is presented that demonstrates active shedding of H5N1 AIV from the ostriches that remain alive, an accurate rendering of the science would conclude that the optimal way to safeguard the wellbeing of people and animals is to let the ostriches at UOF remain there.

131 This would provide a geographical barrier to the spread of H5N1 AIV within British Columbia.

132 This would also provide the option to explore the potential to select high-value breeding stock with unique genetic polymorphisms conferring immunological resistance to highly pathogenic AIV. Such potentially valuable genetics would likely best be identified in the ostriches that most recently populated the farm. This is because the birds that were on the farm in 2022 did not get sick. However, it is unknown whether they did not get sick because they have a superior genetic status as high immune responders or because they had naturally acquired cross-reactive immunity that prevented disease. In contrast, the material evidence suggests that the newer birds did not have historically-derived naturally acquired immunity. However, most of them survived the outbreak that occurred on the farm, with many never even manifesting obvious disease. It is these latter birds (the newer ones presumably without pre-existing immunity that survived the outbreak without becoming diseased) that would best represent the optimal genetics for generating future ostriches capable of mounting superior immune responses against AIVs.

133 Testing now to confirm an absence of H5N1 in the ostriches, repeated one year later would scientifically meet the requirement of the World Organisation for Animal Health, as noted on page 11 of the affidavit of Dr. Cathy Furness, where Article 10.4.3 of the Terrestrial Animal Health Code states, "A country or zone may be considered free from high pathogenicity avian influenza when" "absence of infection with high pathogenicity avian influenza viruses, based on surveillance [...] has been demonstrated in the country or zone for the past 12 months".

134 If the current evidence that is suggestive of acquisition of naturally acquired immunity by the ostriches at UOF should be deemed insufficient, there remain multiple testing options.

135 Testing of nasopharyngeal swabs, or saliva as a second-best option, would be most relevant to demonstrate there is no risk of transmission.

136 Testing of eggs or egg-derived products could be relevant to ensure safety of shipping or using the eggs; to ensure they are virus-free.

137 If RT-PCR testing of the ostriches were to be done, and they were to come back negative for H5N1 AIV, this would be proof that the virus has been eliminated. It is important to note that a positive result, especially after resolution of disease, would not necessarily be indicative of the presence of infectious virions for all the reasons outlined earlier in this report. But it would indicate the necessity for a follow-up functional test such as a virus isolation assay to determine whether infectious virions are or are not present.

138 Also, I have identified a commercial source of rapid antigen test kits for H5N1 AIV that would be ideal for saliva samples or samples from nasopharyngeal swabs[23]. After the company was contacted, they confirmed that their test kit can also detect H5N1 AIV in eggs. This test directly detects viral particles. It is inexpensive and could be used for widespread testing on-site, with results available within approximately fifteen minutes. Any ostrich that tested negative with the rapid antigen test would have evidence that they are not shedding the virus. But, like the RT-PCR test, a positive result would not be proof of presence of infectious virions because this test cannot differentiate between these and non-infectious viral particles. So, a positive test result would indicate the need for follow-up with a functional test.

139 Any bird with evidence of shedding infectious viral particles now that the disease has run its course through the flock, should be humanely euthanized. But, again, this would be an unexpected situation since it would counter basic immunological principles.

140 Additional testing that would provide stronger evidence of naturally acquired immunity in the ostriches would include looking for seroconversion. This is a type of testing that can detect the presence of AIV-specific antibodies in any fluid, including blood, saliva or eggs. There is also what is called a virus hemagglutinin-neutralization assay that his commonplace for viruses like AIV. This routine assay can confirm the presence antibodies capable of neutralizing the virus. Any positive results from these kinds of tests would be strong proof of naturally acquired immunity.

141 Acknowledging the validity of naturally acquired immunity and how it can be harnessed to create geographical locations to attenuate the spread of AIV, alongside populating farms with birds that are immunologically resistant to infection with AIVs would be an optimal combination strategy for the long-term reduction of AIV burden in Canada.

142 This is my concluded expert opinion.

[23] https://reagen.us/product/h5n1/

Byram W. Bridle

Affirmed remotely by Dr. Byram W. Bridle
while on work assignment in Calgary, Alberta, Canada,
on the third day of March 2025

CLEVELAND DOAN
Barristers & Solicitors

**Alyona Kokanova**
Email alyona@clevelanddoan.com
Phone 604 536 5002
File No. 26408

February 26, 2025

**VIA EMAIL**

Dr. Byram W. Bridle, PhD
Office Room #4834; Lab Room #3808
Building #89 (NW corner Gordon/McGilvray)
Department of Pathobiology - Ontario Veterinary College
University of Guelph
50 Stone Road East
Guelph, ON N1G 2W1

Dear Dr. Bridle,

**Re: Medical Scientific Opinion regarding Universal Ostrich Farms Ltd.**

We are the lawyers for Universal Ostrich Farms Ltd. We are writing to request that you provide us with an opinion on a number of matters relating to a potential culling of ostriches.

When preparing your opinion please base it on the facts set out in the "Facts" section of this letter. If you rely on additional facts please describe those facts in your opinion.

**Facts**

1. Universal Ostrich Farms Ltd. ("UOF") is located at 301 Langille Road, Edgewood, British Columbia (the "Property").

2. The Property is approximately 10 kilometres northwest of Edgewood, British Columbia.

3. According to Statistics Canada, the 2021 Census Profile of Edgewood lists a total population of 235 people.

4. The nearest population centres are Vernon, at over 90 kilometres by air, and Castlegar, at over 70 kilometres by air.

5. UOF raises ostriches at the Property.

6. As of February 2020 UOF was raising about 250 ostriches on the Property.

7. At that time some ostriches in the herd became sick. Tissue samples were taken from a deceased ostrich and were sent for analysis. A report from the BC Animal Health Centre

returned positive results for "Proteus sp., Pseudomonas aeruginosa and E. coli (non-haemolytic)".

8. Ten ostriches died around February 2020.

9. In the following year UOF began increasing the size of the herd, including by purchasing some ostriches from other producers.

10. As of December 1, 2024 there were approximately 450 ostriches being raised at the Property (the "Herd").

11. On about December 10, 2024 representatives from UOF began noticing some ostriches in the Herd were showing signs of illness.

12. In the coming week ostriches began to die from apparent illness.

13. On December 30, 2024 representatives from the Canadian Food Inspection Agency ("CFIA") attended at the Property and took swab samples from two of the dead ostriches.

14. CFIA tested using the Avian Influenza matrix and H5H7 PCR test, and the test result was positive for the H5N1 type of Avian Influenza.

15. On December 31, 2024 CFIA issued a written Requirement to Quarantine, which was amended on January 2, 2025, January 12, 2025 and January 24, 2025.

16. UOF has been complying with the requirements of the quarantine.

17. Between about December 12, 2024 and January 15, 2025 69 ostriches died of the H5N1 type symptoms.

18. As of February 11, 2025, no ostriches died of H5N1 symptoms since January 15, 2025.

19. The only ostriches of the Herd that died of H5N1 type symptoms belonged to the group of ostriches that did not experience the pseudomonas infection in 2020.

20. Four ostriches have died of non-H5N1 type symptoms in January 2025. Three of these ostriches slipped on the ice and injured themselves, and one ostrich was caught in a fence.

21. As of February 11, 2025, the remaining ostriches were not showing any signs of illness and appear healthy.

In addition to the facts we provided, please review the following documents:

1. Affidavit of Dr. Cathy Furness dated January 30, 2025;

2. CFIA's email dated February 14, 2025 wherein the CFIA agent answers question #2 regarding testing the ostriches;

3. CFIA lab test labelled 2025DCS- 2025DCS-0000000033-4; and

4. Animal Health Centre medical report labelled AHC Case: 2410316.

which you may deem relevant for the purposes of answering the questions posed for the supplemental report.

**Requested Opinion**

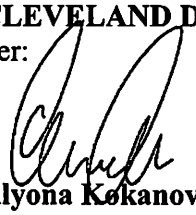
Please provide your opinion for the following questions:

1. Is stamping-out the only and/or most effective strategy for dealing with H5N1 in poultry or are there effective alternatives to the stamping-out policy when an animal, such as an ostrich, contracts H5N1 that would address the risk of H5N1 spreading to humans and other animals?

2. Can you please review Dr. Cathy Furness' Affidavit and comment on the risks the Universal Ostrich Farms' ostriches pose to the Canadian public and to other animals?

Yours truly,

**CLEVELAND DOAN LLP**
Per:



**Alyona Kokanova**.

Canadian Common CV commun canadien

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**Date Submitted:** 2025-03-03 13:25:19
**Confirmation Number:** 1921219
**Template:** Full CV

## Dr. Byram W. Bridle

Correspondence language: English
Sex: Male
Date of Birth: 12/02
Canadian Residency Status: Canadian Citizen
Country of Citizenship: Canada

## Contact Information

The primary information is denoted by (*)

### Address

Primary Affiliation (*)

Room #4834, Building #89
Department of Pathobiology
University of Guelph
50 Stone Road East
Guelph Ontario N1G 2W1
Canada

### Telephone

| | |
|---|---|
| Laboratory | 519-824-4120 extension: 53616 |
| Work (*) | 519-824-4120 extension: 54657 |

### Email

| | |
|---|---|
| Work (*) | bbridle@uoguelph.ca |

### Website

| | |
|---|---|
| Corporate | https://ovc.uoguelph.ca/pathobiology/people/faculty/Byram-W-Bridle |

Canadian Common CV commun canadien

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# Dr. Byram Bridle

## Language Skills

| Language | Read | Write | Speak | Understand | Peer Review |
|---|---|---|---|---|---|
| English | Yes | Yes | Yes | Yes | Yes |

## Degrees

2005/9 - 2011/12

Post-doctorate, Post-doctoral fellowship, Viral Immunology, McMaster University
Degree Status: Completed

Supervisors: Dr. Yonghong Wan, 2005/9 - 2011/12

Research Disciplines: Immunology, Virology

Areas of Research: Vaccine and Cancer, Immunotherapy, Vaccination, Virus, Auto-Immune Diseases, Cerebral Tumors

Fields of Application: Biomedical Aspects of Human Health

2000/1 - 2005/10

Doctorate, Doctor of Philosophy, Immunology, University of Guelph
Degree Status: Completed
Thesis Title: Suppression and modulation of rat immune responses against porcine cells.

Supervisors: Dr. Bonnie A. Mallard, 2000/1 - 2005/10

Research Disciplines: Immunology

Areas of Research: Transplantation and Graft Rejection

Fields of Application: Biomedical Aspects of Human Health

1994/9 - 1997/4

Master's Thesis, Masters of Science, Immunology, University of Guelph
Degree Status: Completed
Thesis Title: The influence of age and strain on the peripheral blood lymphocytes of commercially raised chickens.

Supervisors: Dr. Azad Kaushik, 1994/9 - 1997/4

Research Disciplines: Immunology

Areas of Research: Immune System

Fields of Application: Pathogenesis and Treatment of Diseases

1990/9 - 1994/4

Bachelor's Honours, Bachelors of Science, Biomedical Sciences, University of Guelph
Degree Status: Completed

## Credentials

2018/8

Awarded Tenure, University of Guelph

2018/1

Associate Professor, University of Guelph

2012/1 - 2017/12 Assistant Professor, University of Guelph
Named to the Regular Graduate Faculty in the Department of Pathobiology by the Board of Graduate Studies, University of Guelph.

Research Disciplines: Immunology

Areas of Research: Vaccine and Cancer, Immunotherapy, Vaccination, Virus, Cerebral Tumors, Leukemia, Lymphoma, Auto-Immune Diseases

Fields of Application: Biomedical Aspects of Human Health

## Recognitions

2024/6 Senior International Fellow (Canadian dollar)
FLCCC Alliance
Distinction
I was selected to be a senior international fellow in virology and immunology based on my track record of demonstrating integrity in these disciplines and earning public trust during the declared COVID-19 pandemic when mis- and dis-information was rampant.

2021/5 Recognized as an outstanding reviewer for the Canadian Institutes of Health Research
Canadian Institutes of Health Research
Distinction
CIHR's Review Quality Assurance (RQA) Process recognizes outstanding contributions to peer review. Through feedback and observations from Committee Chairs, Scientific Officers and CIHR staff, the RQA process captures contributions that exemplify the very best of peer reviewers. It is my pleasure to inform you that you are among a select group of reviewers who have been identified through this process as an Outstanding reviewer in recognition of your exemplary contribution to peer review for the Fall 2020 Project Grant competition. Among the 1107 reviewers that participated in the competition, only 12.6% obtained this recognition. On behalf of CIHR and the College of Reviewers, thank you for your selfless generosity volunteering your time and expertise and for your commitment to excellence in peer review. Your institution will be informed of your achievement as part of the College of Reviewers' Institution Activity Report planned to be sent to your institution's Vice-President.

2020/11 Invited to be a member of the Canadian Institutes of Health Research College of Reviewers (Canadian dollar)
Canadian Institutes of Health Research
Honor
"On behalf of the Canadian Institutes of Health Research (CIHR), we are very pleased to invite you to become a member of the College of Reviewers (College). This invitation is made in recognition of your accomplished career, demonstrated track record of excellence, and dedication to peer review."

2020/11
Identified as an outstanding reviewer for the Canadian Institutes of Health Research
Canadian Institutes of Health Research
Distinction
CIHR's Review Quality Assurance (RQA) Process recognizes outstanding contributions to peer review. Through feedback and observations from Committee Chairs, Scientific Officers and CIHR staff, the RQA process captures contributions that exemplify the very best of peer reviewers, such as providing reviews that exceeded expectations, completing additional tasks on short notice, and participating constructively in discussions about applications that were not assigned to them. It is my pleasure to inform you that you are among a select group of reviewers who have been identified through this process as an outstanding reviewer in recognition of your exemplary contribution to peer review during the fall 2019 Project Grant competition. On behalf of CIHR, thank you for your selfless generosity volunteering your time and expertise and for your commitment to excellence in peer review. Feel free to inform the Vice-President of Research or equivalent at your institution on this achievement.

2020/4
Honourary class president of the Ontario Veterinary College's Doctor of Veterinary Medicine class of 2023
University of Guelph
Honor
Voted by class as professor of the year (for teaching immunology)

2020/3
Zoetis Award for Research Excellence - 1,000
Zoetis
Prize / Award
This award recognizes outstanding research effort and productivity.

2019/6
Donation made on behalf of my research program. - 25,000 (Canadian dollar)
Canadian Cancer Society Research Institute
Honor
Hawkesbury Regional Catholic High School, via the Relay for Life Youth program, donated $25,000 to the Canadian Cancer Society in support of my research program.

2019/6
Donation made on behalf of my research program. - 75,000 (Canadian dollar)
Canadian Cancer Society Research Institute
Honor
The Arts and Science Undergraduate Society at Queen's University donated $75,000 to the Canadian Cancer Society to support my research program.

2019/4
Monetary donation made in Dr. Bridle's honour by the DVM class of 2020 to the Down Syndrome Research Foundation.
University of Guelph
Honor
Done in recognition of teaching excellence.

2018/7
Promotion to the position of Associate Professor
University of Guelph
Distinction
Based on meritorious performance as an Assistant Professor, I was promoted to the position of Associate Professor, effective July 1, 2018.

2017/12
Tenure
University of Guelph
Distinction
Based on meritorious performance as an Assistant Professor, I was awarded tenure in December 2017.

| | |
|---|---|
| 2015/6 | Carl J. Norden Distinguished Teaching Award The highest teaching award given by each North American Veterinary College; the recipient is chosen based on a vote of the second, third and fourth year veterinary classes. - 1,000<br>University of Guelph<br>Prize / Award<br>The highest teaching award given by each North American Veterinary College |
| 2015/4 - 2018/3 | Terry Fox Research Institute New Investigator Award - 449,587 (Canadian dollar)<br>Terry Fox Research Institute<br>Prize / Award<br>To provide outstanding young researchers with support as they develop their career as independent research scientists or clinician scientists and to undertake high-quality research into cancer in close collaboration with established research teams. |
| 2015/4 | Was one of three nominees for honourary class president for the Doctor of Veterinary Medicine class of 2018.<br>University of Guelph<br>Honor<br>The honourary class president is voted by the students as the professor of the year. |
| 2014/6 | Junior Investigator Grant Panel Travel Award<br>Canadian Cancer Society Research Institute<br>Prize / Award<br>An travel award provided to successful applicants by the Canadian Cancer Society to attend and observe a grant review panel meeting. |
| 2014/4 | Monetary donation made in Dr. Bridle's honour by the DVM class of 2017 to the Guelph Giants Special Hockey organization.<br>University of Guelph<br>Honor<br>Done in recognition of teaching excellence. |
| 2014/3 | Honourary class president of the Ontario Veterinary College's Doctor of Veterinary Medicine class of 2017<br>University of Guelph<br>Honor<br>Voted by class as professor of the year (for teaching immunology). |
| 2010/12 | Next generation of cancer researchers<br>Ontario Institute for Cancer Research<br>Distinction<br>Featured in the Ontario Institute for Cancer Research 2010 annual report as one of the "next generation of cancer researchers" that is a "rising star" that should be retained in Ontario (see page 20 of report).<br>Research Disciplines: Immunology<br>Areas of Research: Vaccine and Cancer<br>Fields of Application: Biomedical Aspects of Human Health |
| 2010/10 | Best oral presentation<br>McMaster University<br>Prize / Award<br>1st Annual McMaster University Faculty of Health Sciences Post-Doctoral Research Day<br>Research Disciplines: Immunology<br>Areas of Research: Vaccine and Cancer<br>Fields of Application: Biomedical Aspects of Human Health |

2009/3 Poster award
Ontario Institute for Cancer Research
Prize / Award
Award for poster presented at the OICR annual scientific meeting.

Research Disciplines: Immunology

Areas of Research: Vaccine and Cancer

Fields of Application: Biomedical Aspects of Human Health

2009/2 Post-doctoral travel award - 1,500 (Canadian dollar)
5th International Meeting on Replicating Oncolytic Virus Therapeutics
Prize / Award
Travel award to attend the 5th International Meeting on Replicating Oncolytic Virus Therapeutics.

Research Disciplines: Virology

Areas of Research: Vaccine and Cancer

Fields of Application: Biomedical Aspects of Human Health

2008/3 Poster award - 100 (Canadian dollar)
Ontario Institute for Cancer Research
Prize / Award
Award for poster presented at the OICR annual scientific meeting.

Research Disciplines: Immunology

Areas of Research: Vaccine and Cancer

Fields of Application: Biomedical Aspects of Human Health

2005/3 Poster award - 250 (Canadian dollar)
Canadian Society for Immunology
Prize / Award
Canadian Society for Immunology Poster Award for scientific presentation at annual scientific meeting.

Research Disciplines: Immunology

2005/3 D.G. Ingram Travel Award - 400 (Canadian dollar)
University of Guelph
Prize / Award
Travel award to attend the Canadian Society for Immunology annual scientific meeting.

Research Disciplines: Immunology

Areas of Research: Transplantation and Graft Rejection

Fields of Application: Biomedical Aspects of Human Health

2005/3 Poster award - 250 (Canadian dollar)
Canadian Society for Immunology
Prize / Award
Canadian Society for Immunology poster award for presentation at annual scientific meeting.

Research Disciplines: Immunology

Areas of Research: Transplantation and Graft Rejection

Fields of Application: Biomedical Aspects of Human Health

2005/3 Dr. J. Sherman Travel Award - 150 (Canadian dollar)
University of Guelph
Prize / Award
Travel award to attend the Canadian Society for Immunology annual scientific meeting.

Research Disciplines: Immunology

Areas of Research: Transplantation and Graft Rejection

Fields of Application: Biomedical Aspects of Human Health

2004/7 American Association of Veterinary Immunologists Travel Award - 1,000 (United States dollar)
American Association of Veterinary Immunologists
Prize / Award
American Association of Veterinary Immunologists travel award to attend the International Congress on Immunology.

Research Disciplines: Immunology

Areas of Research: Transplantation and Graft Rejection

Fields of Application: Biomedical Aspects of Human Health

2004/1 Graduate Student Recognition Award
University of Guelph
Distinction
Elected by peers to receive the Ontario Veterinary College Graduate Student Recognition Award for outstanding leadership and contributions.

Research Disciplines: Immunology

2004/1 Ontario Veterinary College Travel Award - 500 (Canadian dollar)
University of Guelph
Prize / Award
Ontario Veterinary College travel award to attend the International Congress of Immunology.

Research Disciplines: Immunology

Areas of Research: Transplantation and Graft Rejection

Fields of Application: Biomedical Aspects of Human Health

2003/1 Graduate Student Recognition Award
University of Guelph
Prize / Award
Elected by peers to receive the Ontario Veterinary College Graduate Student Recognition Award for leadership and contributions.

Research Disciplines: Immunology

2003/1 Dr. F. Schofield Korean-Canadian Scholarship - 2,000 (Canadian dollar)
Korean-Canadian Scholarship Association
Prize / Award
Established by the Dr. Schofield Memorial Association of Korean-Canadian, in partnership with the Korean-Canadian Scholarship Association. The scholarship honours Dr. Frank Schofield's active role in the Korean independence movement, as well as his academic and medical contributions in the early 20th century. It is awarded annually to a student who demonstrates scholarship and contributions to academic life.

Research Disciplines: Immunology

| | |
|---|---|
| 2002/9 - 2002/12 | University Graduate Scholarship - 500 (Canadian dollar)<br>University of Guelph<br>Prize / Award<br>To recognize academic excellence.<br><br>Research Disciplines: Immunology |
| 2002/1 - 2002/4 | University Graduate Scholarship - 500 (Canadian dollar)<br>University of Guelph<br>Prize / Award<br>To recognize academic excellence.<br><br>Research Disciplines: Immunology |
| 2001/1 | Ontario Veterinary College Travel Award - 500 (Canadian dollar)<br>University of Guelph<br>Prize / Award<br>Travel award to attend the annual scientific meeting of the Canadian Society for Immunology.<br><br>Research Disciplines: Immunology |
| 1995/9 - 1995/12 | University Graduate Scholarship - 500 (Canadian dollar)<br>University of Guelph<br>Prize / Award<br>To recognize academic excellence.<br><br>Research Disciplines: Immunology |
| 1995/1 - 1995/4 | University Graduate Scholarship - 500 (Canadian dollar)<br>University of Guelph<br>Prize / Award<br>To recognize academic excellence.<br><br>Research Disciplines: Immunology |
| 1990/9 | University of Guelph Entrance Scholarship - 1,000 (Canadian dollar)<br>University of Guelph<br>Prize / Award<br>Scholarship awarded for students entering their undergraduate program with an academic average of >90% in secondary school. |
| 1990/9 - 1994/4 | Canada Scholarship - 8,000 (Canadian dollar)<br>Government of Canada<br>Prize / Award<br>Scholarship to support undergraduate-level university education. Only 1,250 of these scholarships were awarded to men across Canada in 1990. Awarded based on academic merit with semesterly renewal dependent on maintaining high academic standards. |
| 1990/9 | Wellington County Scholarship - 500 (Canadian dollar)<br>County of Wellington<br>Prize / Award<br>Awarded in recognition of academic excellence. |
| 1990/9 | Ontario Scholar<br>Ontario Government<br>Prize / Award<br>Awarded to students who maintained an academic average >80% throughout secondary school. |

1987/9 - 1988/6 Received trophy for highest mark in "Man in Society" course (NSO 4A1) in grade 12 (high school) in the 1987-88 academic year. (Canadian dollar)
Centre Wellington District High School
Prize / Award

## User Profile

Researcher Status: Researcher
Research Career Start Date: 1994/09/06
Engaged in Clinical Research?: No

Key Theory / Methodology: My research crosses the disciplines of immunology and virology. There are two areas of emphasis within my research program: one focuses on human health, the other on basic science. My health-related research is both pre-clinical and translational and aims to develop novel biotherapies for the treatment of cancers. My basic program studies fundamental mechanisms of initiation and regulation of innate anti-viral immunity, with an emphasis on identifying causes of aberrant cytokine storms.

Research Interests: In an effort to destroy malignant cells with minimal bystander damage to normal tissues, I combine two approaches: 1. cancer immunotherapy, which directs the power of the immune system against tumours and, 2. oncolytic virotherapy that utilizes viruses that replicate in and kill only cancerous cells. The exquisite specificity and systemic targeting capability of these two approaches holds promise that some day cancer patients might be effectively treated without the toxicities associated with many conventional therapies. My extensive work with oncolytic viruses has also led to the discovery of a novel mechanism for the negative regulation of complex cytokine networks. This has led to a keen interest in basic aspects of innate antiviral immunity. In summary, my specific interests include: vaccines, oncolytic viruses, immunological tolerance, autoimmunity (to kill cancerous but not normal self), tumour biology, host anti-viral response and antigen presentation.

Research Experience Summary: I am an early-career faculty member, appointed Jan. 3, 2012, in the department of Pathobiology, University of Guelph. Key milestones achieved to date include: 1. Establishing a new viral immunology research program to develop effective new cancer biotherapies and to understand the regulation of cytokine networks in response to viral infections. 2. Using my expertise to fuel local, provincial, national and international collaborations. Research highlights as a post-doctoral fellow at McMaster University inlcuded: 1. Discovering that histone deacetlyase inhibition can enhance an oncolytic booster vaccine while abrogating autoimmune pathology. 2. Developing a novel method to synergize oncolytic virotherapy with cancer immunotherapy. 3. Advancing the field of cancer vaccinology. As a PhD student I developed a strategy to use oral tolerance to modulate host immunity to facilitate xenotransplantation. I also have significant management experience from industry appointments.

Research Specialization Keywords: immunology, virology, treating cancers in the brain, type I interferon signaling, type I interferon, vaccines, cancer, cytokines, regulation of cytokines, immunotherapy, viruses, flow cytometry

Disciplines Trained In: Immunology, Virology

Research Disciplines: Immunology, Virology

Areas of Research: Immunotherapy, Vaccine and Cancer, Cerebral Tumors, Immune System, Vaccination, Virus

Fields of Application: Pathogenesis and Treatment of Diseases, Biomedical Aspects of Human Health

## Employment

| | |
|---|---|
| 2018/1 | Associate Professor<br>Pathobiology, Ontario Veterinary College, University of Guelph<br>Full-time, Associate Professor<br>Tenure Status: Tenure<br>I received tenure in December 2017 and was promoted to the position of Associate Professor, effective July 1, 2018. I specialize in viral immunology and am responsible for training highly qualified personnel, managing a research program, teaching undergraduate, Doctor of Veterinary Medicine and graduate students, and providing community service. |
| 2017/10 | Goalie Coach<br>Guelph Giants Special Needs Hockey Club (affil. with Special Hockey International and Hockey Canada)<br>I am a volunteer coach. I teach children with special needs on the Guelph Giants junior team how to play the goaltending position for ice hockey. |
| 2012/1 - 2017/12 | Assistant Professor<br>Pathobiology, Ontario Veterinary College, University of Guelph<br>Full-time, Assistant Professor<br>Tenure Status: Tenure Track<br>A tenure-track early career faculty position, specializing in viral immunology. Responsible for training highly qualified personnel, managing a research program, teaching undergraduate, Doctor of Veterinary Medicine and graduate students, and providing community service.<br><br>Research Disciplines: Immunology, Virology<br><br>Areas of Research: Vaccine and Cancer, Immunotherapy, Vaccination, Virus, Immune Mediators: Cytokines and Chemokines, Auto-Immune Diseases, Cerebral Tumors, Leukemia<br><br>Fields of Application: Biomedical Aspects of Human Health |
| 2005/9 - 2011/12 | Post-doctoral fellow<br>Pathology and Molecular Medicine, Medicine, McMaster University<br>Full-time<br>Tenure Status: Non Tenure Track<br>McMaster Immunology Research Centre, McMaster University Advisor: Dr. Yonghong Wan Research: Developed expertise in the areas of cancer immunotherapy and oncolytic viruses for the purpose of rationally designing novel vaccine strategies for treating cancers and infectious diseases. Emphases: brain cancer, neuroimmunology, T and B cell biology and a diverse array of research techniques and analytical methods. Strategic collaborations: virologists, immunologists, nuclear imaging scientists who were interested in using brain cancer models as imaging tools, mathematics department (to model biological findings), McMaster Industry Liason Office (intellectual property interests), University of Ottawa, Ontario Institute for Cancer Research. I also gained some experience co-supervising graduate and undergraduate students.<br><br>Research Disciplines: Immunology, Virology<br><br>Areas of Research: Vaccine and Cancer, Immunotherapy, Virus, Cerebral Tumors<br><br>Fields of Application: Biomedical Aspects of Human Health |

2000/1 - 2005/10

Research Assistant
Pathobiology, Ontario Veterinary College, University of Guelph
Full-time
Tenure Status: Non Tenure Track
PhD research project. Advisor: Dr. Bonnie Mallard Collaboration between the University of Guelph and University of Western Ontario. Developed strategies to suppress and modulate rat immune responses against porcine cells in support of xenotransplantation research.

Research Disciplines: Immunology

Areas of Research: Transplantation and Graft Rejection

Fields of Application: Biomedical Aspects of Human Health

1999/7 - 2000/12

Research Project Manager
Pathobiology, Ontario Veterinary College, University of Guelph
Full-time
Tenure Status: Non Tenure Track
Managed a xenotransplantation research project that represented collaboration between the Universities of Guelph, Western Ontario and Toronto and Imutran (former subsidiary of Novartis) for the purpose of breeding transgenic pigs to be used as organ/tissue donors.

Research Disciplines: Immunology

Areas of Research: Transplantation and Graft Rejection

Fields of Application: Biomedical Aspects of Human Health

1999/1 - 1999/6

Quality Control Laboratory Technician
Microbiology Quality Control Laboratory, Schneider's Meats, Ltd., Kitchener
Full-time
Quality control testing in a microbiology laboratory to monitor safety of meat products.

Research Disciplines: Microbiology

1997/5 - 1998/12

Research Project Manager
International Bio-Institute, Fergus, Ontario
Full-time
Obtained GLP (good laboratory practices) certification for research division. Managed veterinary drug efficacy and safety pre-clinical trials for submissions to the Canadian Bureau of Veterinary Drugs and the U.S.A. Food and Drug Administration. Also established a small ELISA (enzyme-linked immunosorbent assay)-based diagnostic laboratory.

Research Disciplines: Veterinary Sciences

Areas of Research: Infectious Diseases

Fields of Application: Pathogenesis and Treatment of Diseases

1994/9 - 1997/4

Research Assistant
Pathobiology, Ontario Veterinary College, University of Guelph
Full-time
Tenure Status: Non Tenure Track
MSc research project. Advisor: Dr. Azad Kaushik Characterized the influence of age and strain on the peripheral blood lymphocytes of commercially raised chickens.

Research Disciplines: Immunology

Areas of Research: Animal

Fields of Application: Pathogenesis and Treatment of Diseases

| | |
|---|---|
| 1994/5 - 1994/8 | Undergraduate Research Assistant<br>Pathobiology, Ontario Veterinary College, University of Guelph<br>Full-time<br>Tenure Status: Non Tenure Track<br>Cloned and sequenced antibody variable region genes from lupus-prone mice in support of an autoimmunity research project. Sequences were subsequently published. Advisor: Dr. Azad Kaushik<br>Research Disciplines: Immunology<br>Areas of Research: Antibodies, Auto-Immune Diseases<br>Fields of Application: Biomedical Aspects of Human Health |
| 1993/5 - 1993/8 | Undergraduate Research Assistant<br>Food Science, Ontario Veterinary College, University of Guelph<br>Full-time<br>Tenure Status: Non Tenure Track<br>Studying the viscoelastic properties of acid milk gels using a nametre. Supervisor: Dr. Arthur Hill<br>Research Disciplines: Biology and Related Sciences<br>Areas of Research: Nutriceuticals and Functional Foods<br>Fields of Application: Industrial Manufacturing and Production |

## Affiliations

The primary affiliation is denoted by (*)

| | |
|---|---|
| (*) 2018/1 | Associate Professor, Pathobiology, University of Guelph |
| 2012/1 - 2017/12 | Assistant Professor, Pathobiology, University of Guelph<br>A tenure-track early career faculty specializing in viral immunology. Responsible for educating students, managing a research program that results in publishing independent academic work in scholarly peer-reviewed journals and providing community service. |

## Leaves of Absence and Impact on Research

| | |
|---|---|
| 2021/1 - 2021/12 | Sabbatical, University of Guelph<br>I was granted a research leave. This is standard practice for an academic faculty member. We are entitled to request a research leave following every six years of service. The purpose is to facilitate re-training in state-of-the-art research and teaching methods. This particular research leave allowed me to focus on research-related activities, including service to the research community during the declared COVID-19 pandemic. To accomplish this, I was relieved of all teaching and local service activities for a period of one year. |

## Research Funding History

**Awarded [n=45]**

| | |
|---|---|
| 2021/4 - 2026/5<br>Principal Investigator | Calming the Cytokine Storm: Elucidating Mechanisms Contributing to Toxic Inflammatory Responses to Viruses, Grant, Operating<br>Clinical Research Project?: No |

**Funding Sources:**

2021/4 - 2026/3 Natural Sciences and Engineering Research Council of Canada (NSERC)
Discovery Grant
Total Funding - 160,000 (Canadian dollar) (Canadian dollar)
Funding Renewable?: Yes
Funding Competitive?: Yes
Funding Reference Number: RGPIN-2021-04069

2024/6 - 2025/5
Principal Investigator

Pre-Clinical Research on the Impact of the Childhood Vaccination Schedule on the Immune System, Grant, Operating
Clinical Research Project?: No

**Funding Sources:**

2024/6 - 2025/5 Donner Canadian Foundation
Operating Grant
Total Funding - 82,614 (Canadian dollar) (Canadian dollar)
Funding Renewable?: No
Funding Competitive?: Yes

2019/3 - 2024/2
Co-applicant

Combined Anti-Angiogenic, Metronomic Chemotherapy, and Immunotherapy in the Treatment of Advanced Stage Ovarian Cancer, Grant

**Funding Sources:**

2019/4 - 2024/3 Canadian Institutes of Health Research (CIHR)
Project Grant
Total Funding - 725,000 (Canadian dollar)
Portion of Funding Received - 100,000
Funding Competitive?: Yes

Co-applicant : Jack Lawler; Sarah K. Wootton;

Principal Applicant : James J. Petrik

2021/9 - 2023/8
Principal Investigator

Oxidative Stress as a Mechanism Causing Off-Target Infections of T Cells with Oncolytic Viruses (student stipend support), Scholarship

**Funding Sources:**

2021/9 - 2023/8 Ontario Veterinary College (OVC)
Master's Scholarship
Total Funding - 30,000 (Canadian dollar)

Principal Applicant : Sierra Vanderkamp

2021/9 - 2023/8
Principal Applicant

Heat- and Cold-Adaptation of Oncolytic Rhabdoviruses to Improve Their Clinical Utility, Grant, Operating

2020/7 - 2023/6
Co-applicant

Characterization of Innate Lymphoid Cells in Canine Blood, Grant

**Funding Sources:**

OVC Pet Trust
Operating Grant
Total Funding - 16,100
Portion of Funding Received - 0
Funding Competitive?: Yes

Co-applicant : Dr. Samuel Hocker;

Principal Investigator : Dr. Khalil Karimi

2020/7 - 2023/6
Co-applicant

The use of SPECTRA OPTIA, Apheresis System from TERUMO, in Veterinary Medicine, Grant

**Funding Sources:**

OVC Pet Trust
Equipment Grant
Total Funding - 40,000
Portion of Funding Received - 0
Funding Competitive?: Yes

Principal Investigator : Dr. Alice Defarges

2022/5 - 2023/4
Principal Investigator

Ontario Graduate Scholarship (awarded to MSc student but declined due to receipt of a scholarship of greater monetary value), Scholarship
Project Description: Studying off-target infection of activated T cells by oncolytic rhabdoviruses

**Funding Sources:**

Government of Ontario
Ontario Graduate Scholarship
Total Funding - 15,000 (Canadian dollar)

2022/5 - 2023/4
Principal Investigator

Canadian Institutes of Health Research Canada Graduate Scholarship (awarded to MSc student), Scholarship
Project Description: Studying off-target infection of activated T cells by oncolytic rhabdoviruses

**Funding Sources:**

2022/5 - 2023/4 Canadian Institutes of Health Research (CIHR)
Canada Graduate Scholarship
Total Funding - 17,500 (Canadian dollar) (Canadian dollar)

2020/9 - 2022/8
Principal Investigator

OVC MSc Scholarship, Scholarship

**Funding Sources:**

2020/9 - 2022/8 Ontario Veterinary College (OVC)
MSc Graduate Scholarship
Total Funding - 30,000 (Canadian dollar)

Principal Applicant : Lily Chan

2020/9 - 2022/8
Principal Applicant

Advancing a Promising Infected Cancer Cell Vaccine Platform into the Translational Research Pipeline, Grant

**Funding Sources:**

Cancer Research Society (The)
Operating Grant
Total Funding - 120,000
Portion of Funding Received - 120,000
Funding Competitive?: Yes

Co-applicant : Dr. Sarah K. Wootton

2017/7 - 2022/6
Co-applicant

Vascular Normalization as a Mechanism to Increase Oncolytic Virus Spread and Efficacy (a sub-project within a Program Project Grant that was awarded by the Terry Fox Research Institute to the Canadian Oncolytic Virus Consortium [$7,396,160]), Grant

**Funding Sources:**

2017/7 - 2022/3 Terry Fox Research Institute (TFRI)
Program Project Grant
Total Funding - 314,460 (Canadian dollar)
Portion of Funding Received - 314,460
Funding Competitive?: Yes

2020/3 - 2022/3
Principal Applicant

Developing Prophylactic Virus-Vectored Vaccines for COVID-19, Grant

**Funding Sources:**

Ontario Ministry of Colleges and Universities
COVID-19 Rapid Research Fund
Total Funding - 231,888
Portion of Funding Received - 231,888
Funding Competitive?: Yes

Co-investigator : Dr. Leonardo Susta; Dr. Sarah K. Wootton

2021/1 - 2022/3
Principal Investigator

Translational Development of an Avian Orthoavulavirus-1-Vectored Vaccine for COVID-19, Grant

**Funding Sources:**

National Research Council Canada (NRC) (Ottawa, ON)
Pandemic Response Challenge Program
Total Funding - 444,000
Portion of Funding Received - 319,000
Funding Competitive?: Yes

Co-investigator : Leonardo Susta; Sarah K. Wootton

2019/3 - 2022/2
Co-applicant

AAV Gene Therapy for the Treatment of Surfactant Protein B Deficiency, Grant

**Funding Sources:**

2019/3 - 2024/2 Canadian Institutes of Health Research (CIHR)
Project Grant
Total Funding - 620,000 (Canadian dollar)
Portion of Funding Received - 30,000
Funding Competitive?: Yes

Co-applicant : Bernard Thébaud; Martin Kang;

Collaborator : Jeffrey Whitsett; Laura van Lieshout; Lawrence Nogee;

Principal Applicant : Sarah K. Wootton

2019/9 - 2021/8
Principal Investigator

Nora Cebotarev Memorial Graduate Scholarship (student stipend funding), Scholarship

**Funding Sources:**

2019/9 - 2021/8 University of Guelph
Nora Cebotarev Memorial Graduate Scholarship
Total Funding - 25,000 (Canadian dollar)

Principal Applicant : Jessica Minott

2020/9 - 2021/8
Principal Investigator

Ontario Graduate Scholarship (student stipend funding), Scholarship

**Funding Sources:**

2020/9 - 2021/8 Ontario Ministry of Colleges and Universities
Total Funding - 15,000 (Canadian dollar)

Principal Applicant : Jessica Minott

2021/5 - 2021/8
Principal Investigator

Andrea Leger Dunbar Summer Studentship (student salary funding), Scholarship

**Funding Sources:**

2021/5 - 2021/8 Ontario Veterinary College (OVC)
Andrea Leger Dunbar Summer Studentship
Total Funding - 9,000 (Canadian dollar)

Principal Applicant : Christina Napoleoni

2018/7 - 2021/6
Principal Investigator

Developing Biotherapies for the Treatment of Canine Cancers, Grant

**Funding Sources:**

2018/1 - 2022/12 Private Donation
private donation
Total Funding - 1,500 (Canadian dollar)
Portion of Funding Received - 1,500
Funding Competitive?: No

2018/6 - 2021/5
Co-applicant

PD-1 Expression on Blood Leukocytes in Dogs with Bladder Cancer, Grant

**Funding Sources:**

2018/4 - 2021/3 Pet Trust Fund (The)
Operating Grant
Total Funding - 27,584 (Canadian dollar)
Portion of Funding Received - 6,896
Funding Competitive?: Yes

Co-applicant : Anthony Mutsaers;

Principal Applicant : Samuel Hocker

2018/1 - 2021/1
Co-investigator

Oncolytic Viral Vaccine Therapy of Feline Mammary Carcinoma, Grant

**Funding Sources:**

2018/1 - 2021/1 Pet Trust Fund (The)
Operating Grant
Total Funding - 7,668 (Canadian dollar)
Portion of Funding Received - 1,534
Funding Competitive?: Yes

Co-applicant : Michelle Oblak; Robert Foster;

Co-investigator : Geoffrey Wood;

Principal Applicant : J. Paul Woods

2020/3 - 2021/1
Co-investigator

Developing Prophylactic Virus-Vectored Vaccines for COVID-19, Grant

**Funding Sources:**

University of Guelph, Ontario Veterinary College and Department of Pathobiology
Seed funding for COVID-19 research
Total Funding - 20,000
Portion of Funding Received - 20,000
Funding Competitive?: Yes

Co-investigator : Dr. Sarah K. Wootton;

Principal Applicant : Dr. Leonardo Susta

2020/5 - 2020/8
Principal Investigator

NSERC Undergraduate Student Research Assistantship (student salary funding), Scholarship

**Funding Sources:**

2020/5 - 2020/8 Natural Sciences and Engineering Research Council of Canada (NSERC)
Undergraduate Research Assistantship
Total Funding - 4,500 (Canadian dollar)

Principal Applicant : Lily Chan

2018/9 - 2020/8
Principal Applicant

Treatment of Osteosarcoma Lung Metastases with an Infected Cancer Cell Vaccine, Grant

**Funding Sources:**

2018/9 - 2021/8 Cancer Research Society (The)
Operating Grant
Total Funding - 60,000 (Canadian dollar)
Portion of Funding Received - 60,000
Funding Competitive?: Yes

2018/9 - 2021/8 Canadian Institutes of Health Research (CIHR)
CRS Operating Grant (jointly funded)
Total Funding - 62,086 (Canadian dollar)
Portion of Funding Received - 62,086
Funding Competitive?: Yes

Co-applicant : Sarah K. Wootton

2018/9 - 2020/8
Principal Applicant

Combining Oncolytic Virotherapy and Epigenetic Modifiers to Treat Acute Leukemias, Grant

**Funding Sources:**

2019/8 - 2021/7 Canadian Institutes of Health Research (CIHR)
CCS-RI Innovation Grant (jointly funded)
Total Funding - 100,000 (Canadian dollar)
Portion of Funding Received - 100,000
Funding Competitive?: Yes

2018/8 - 2021/7 Canadian Cancer Society Research Institute (CCSRI)
Innovation Grant
Total Funding - 105,215 (Canadian dollar)
Portion of Funding Received - 105,215
Funding Competitive?: Yes

2017/9 - 2020/8
Principal Investigator

Enhancing Immunogenic Cancer Cell Death Through the Novel Combination of Oncolytic Viruses and Photodynamic Therapy (student stipend support), Scholarship

**Funding Sources:**

2017/9 - 2020/8 Canadian Institutes of Health Research (CIHR)
Vanier Scholarship
Total Funding - 150,000 (Canadian dollar)
Portion of Funding Received - 33,000
Funding Competitive?: Yes

Principal Applicant : Ashley Ross;

Principal Investigator : Sarah Wootton

2020/5 - 2020/8
Principal Investigator

Andrea Leger Dunbar Summer Studentship (student salary funding), Scholarship

**Funding Sources:**

2020/5 - 2020/8 University of Guelph
Andrea Leger Dunbar Summer Studentship
Total Funding - 9,000 (Canadian dollar)

Principal Applicant : Kiersten Hanada

2019/9 - 2020/8
Principal Investigator

Ellen Nilsen Memorial Graduate Scholarship (student stipend funding), Scholarship

**Funding Sources:**

2019/9 - 2020/8 University of Guelph
Ellen Nilsen Memorial Graduate Scholarship
Total Funding - 1,500 (Canadian dollar)

Principal Applicant : Jessica Minott

2018/9 - 2020/8
Principal Investigator

Combining Oncolytic Viruses with Epigenetic Modifiers to Treat Acute Myeloid Leukemias (student stipend support), Scholarship

**Funding Sources:**

2018/9 - 2020/12 Ontario Veterinary College (OVC)
Graduate Scholarship
Total Funding - 37,000 (Canadian dollar)
Portion of Funding Received - 37,000
Funding Competitive?: Yes

Principal Applicant : Elaine Klafuric

2020/5 - 2020/8
Principal Investigator

BioCanRx Summer Studentship (student salary funding), Scholarship

**Funding Sources:**

2020/5 - 2020/8 National Centre of Excellence in Biotherapeutics for Cancer Treatment
Summer Studentship
Total Funding - 8,000 (Canadian dollar)

Principal Applicant : Lily Chan

2017/7 - 2020/6
Principal Investigator

Developing Biotherapies for the Treatment of Canine Cancers, Grant

**Funding Sources:**

2017/7 - 2020/6 Private Donation
private donation
Total Funding - 1,000 (Canadian dollar)
Portion of Funding Received - 1,000
Funding Competitive?: No

2017/7 - 2020/6
Co-applicant

Synthesis of a Novel Oncolytic Newcastle Disease Virus to Support the Treatment of Companion Animal Cancer Patients, Grant

**Funding Sources:**

2017/6 - 2020/6 Pet Trust Fund (The)
Operating Grant
Total Funding - 25,000 (Canadian dollar)
Portion of Funding Received - 5,000
Funding Competitive?: Yes

Co-applicant : Sarah Wootton;

Principal Applicant : Leonardo Susta

2018/1 - 2019/12
Co-investigator

The Role of Interleukin-17-Producing Cells in the Pathophysiology of Canine Immune Mediated Hemolytic Anemia, Grant

**Funding Sources:**

2018/1 - 2021/1 Pet Trust Fund (The)
Operating Grant
Total Funding - 10,583 (Canadian dollar)
Portion of Funding Received - 1,764
Funding Competitive?: Yes

Co-investigator : Anthony Abrams-Ogg; Darren Wood; Dorothee Bienzle; Geoffrey Wood;

Principal Applicant : Shauna Blois

2019/5 - 2019/8
Principal Investigator

Undergraduate Research Assistantship (student salary funding), Scholarship

**Funding Sources:**

2019/5 - 2019/8 University of Guelph
Undergraduate Research Assistantship
Total Funding - 8,000 (Canadian dollar)

Principal Applicant : Lily Chan

2017/9 - 2019/8
Co-applicant

Vascular Normalization as a Mechanism to Increase Uptake and Efficacy of Oncolytic Viruses and Vaccine-Induced Effector Cells for the Treatment of Advanced Stage Ovarian Cancer, Grant

**Funding Sources:**

2017/9 - 2019/8 Cancer Research Society (The)
Operating Grant
Total Funding - 120,000 (Canadian dollar)
Portion of Funding Received - 30,000
Funding Competitive?: Yes

Co-applicant : Sarah Wootton;

Principal Applicant : James Petrik

2018/9 - 2019/4
Principal Investigator

The Development of Recombinant Parapoxvirus ovis (OrfV) for Use in Oncolytic Virotherapy (student stipend support), Scholarship

**Funding Sources:**

2018/9 - 2019/4 Ontario Graduate Scholarship
Graduate Scholarship
Total Funding - 10,000 (Canadian dollar)
Portion of Funding Received - 5
Funding Competitive?: Yes

Principal Applicant : Jacob van Vloten;

Principal Investigator : Sarah K. Wootton

2014/4 - 2019/3
Principal Applicant

Developing Novel Cancer Biotherapies: Infrastructure to Support Translational Research in Companion Animals, Grant

**Funding Sources:**

2014/4 - 2019/3 Ministry of Research and Innovation (MRI) (Ontario)
Ontario Research Fund - Research Infrastructure Program
Total Funding - 124,886 (Canadian dollar)
Portion of Funding Received - 124,886
Funding Competitive?: Yes

2013/4 - 2019/3
Principal Applicant

Type I Interferon Receptor Signalling as a Master Switch for the Negative Regulation of Cytokine Networks, Grant

**Funding by Year:**

2013/7 - 2018/6 Total Funding - 175,000
Portion of Funding Received - 175,000
Time Commitment: 16

2015/4 - 2019/3
Principal Applicant

Development of Cutting-Edge Biotherapies for the Treatment of Cancers, Grant

**Funding Sources:**

2015/4 - 2018/3 Terry Fox Research Institute (TFRI)
New Investigator Award
Total Funding - 449,587 (Canadian dollar)
Portion of Funding Received - 449,587
Funding Competitive?: Yes

2016/3 - 2019/2
Principal Investigator

Developing Biotherapies for the Treatment of Canine Cancers, Grant

**Funding Sources:**

2016/3 - 2019/2 Private Donation
private donation
Total Funding - 400 (Canadian dollar)
Portion of Funding Received - 400
Funding Competitive?: No

2016/1 - 2019/1
Principal Applicant

Construction and Validation of Viral-Vectored Vaccines to Induce Robust Tumour-Specific T Cell Responses in Dogs with Oral Melanomas, Grant

**Funding Sources:**

2016/1 - 2019/1 Pet Trust Foundation
Operating Grant
Total Funding - 12,265 (Canadian dollar)
Portion of Funding Received - 12,265
Funding Competitive?: Yes

2016/7 - 2018/12
Co-applicant

Accelerated Clinical Development of Synthetic Antibody Immuno-Modulators Through Companion Animal Trials (the "total funding" represents the amount awarded to B. Bridle; the award for both applicants was $708,893), Grant

**Funding Sources:**

2016/7 - 2018/6 National Centre of Excellence in Biotherapeutics for Cancer Treatment (BioCanRx)
Enabling Grant
Total Funding - 351,361 (Canadian dollar)
Portion of Funding Received - 319,261
Funding Competitive?: Yes

Principal Applicant : Jason Moffat

2016/9 - 2018/12
Principal Investigator

The Development of Recombinant Parapoxvirus ovis (OrfV) for Use in Oncolytic Virotherapy (student stipend support), Scholarship

**Funding Sources:**

2016/9 - 2018/12 Ontario Veterinary College (OVC)
Graduate Scholarship
Total Funding - 21,000 (Canadian dollar)
Portion of Funding Received - 21,000
Funding Competitive?: Yes

Principal Applicant : Jacob van Vloten;

Principal Investigator : Sarah K. Wootton

2015/9 - 2018/8
Principal Investigator

Art Rouse Cancer Biology Graduate Stipend (student stipend support), Scholarship

**Funding Sources:**

2015/9 - 2018/8 Ontario Veterinary College (OVC)
Art Rouse Cancer Biology Graduate Stipend
Total Funding - 60,000 (Canadian dollar)
Portion of Funding Received - 60,000
Funding Competitive?: Yes

Principal Applicant : Robert Mould (PhD student)

2016/9 - 2018/8
Principal Investigator

Sex Disparity in Innate Immune Responses to Viral Infection: the Role of Type I Interferon (student stipend support), Scholarship

**Funding Sources:**

2016/9 - 2018/8 University of Guelph
Graduate Tuition Scholarship
Total Funding - 32,000 (Canadian dollar)
Portion of Funding Received - 5,333
Funding Competitive?: Yes

Principal Applicant : Katrina Allison (MSc student)

**Completed [n=40]**

2021/1 - 2022/1
Principal Investigator

Translational Development of an Avian Orthoavulavirus-1-Vectored Vaccine for COVID-19, Grant, Operating
Clinical Research Project?: No

**Funding by Year:**

2021/1 - 2022/1 Total Funding - 303,341 (Canadian dollar) (Canadian dollar)

2018/5 - 2018/8
Principal Investigator

Assessing the Impact of Sex Hormones on the Efficacy of Oncolytic Viruses ($8,000 for student salary support; $1,000 for operating funds), Scholarship

**Funding Sources:**

Ontario Veterinary College (OVC)
Andrea Leger Dunbar Summer Research Studentship
Total Funding - 9,000
Portion of Funding Received - 9,000
Funding Competitive?: Yes

Co-investigator : Jessica Minott

2018/5 - 2018/8
Principal Investigator

Type I Interferon-Mediated Regulation of IL-17 Production by Mast Cells (student salary support), Scholarship

**Funding Sources:**

Natural Sciences and Engineering Research Council of Canada (NSERC)
Undergraduate Student Research Assistantship
Total Funding - 4,400
Portion of Funding Received - 4,400
Funding Competitive?: Yes

Principal Applicant : Elaine Klafuric

2018/5 - 2018/8
Principal Investigator

Combining Oncolytic Virotherapy with Epigenetic Modifiers to Treat Lymphomas (student salary support), Scholarship

**Funding Sources:**

National Centre of Excellence in Biotherapeutics for Cancer Treatment (BioCanRx)
Summer Studentship
Total Funding - 6,000
Portion of Funding Received - 6,000
Funding Competitive?: Yes

Principal Applicant : Samantha Holtz

2015/6 - 2018/4
Co-applicant

Development of a Vaccine to Protect Against Toxoplasma gondii Infection in Sheep, Grant

**Funding Sources:**

2015/6 - 2018/4 Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA)
Tier I Operating Grant (Production Animal Systems)
Total Funding - 59,250 (Canadian dollar)
Portion of Funding Received - 14,813
Funding Competitive?: Yes

Co-applicant : John Barta; Paula Menzies;

Principal Applicant : Sarah K. Wootton

2017/5 - 2017/8
Principal Investigator

Assessing the Impact of an Acidic Tumour Microenvironment on the Efficacy of Oncolytic Viruses (student salary support), Scholarship

**Funding Sources:**

Natural Sciences and Engineering Research Council of Canada (NSERC)
Undergraduate Student Research Assistantship
Total Funding - 4,400
Portion of Funding Received - 4,400
Funding Competitive?: Yes

Principal Applicant : Julia Saturno

2016/9 - 2017/8
Principal Investigator

The Development of Recombinant Parapoxvirus ovis (OrfV) for Use in Oncolytic Virotherapy (student stipend support), Scholarship

**Funding Sources:**

2016/9 - 2017/8 Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA)
Highly Qualified Personnel PhD Scholarship
Total Funding - 21,000 (Canadian dollar)
Portion of Funding Received - 10,500
Funding Competitive?: Yes

Principal Applicant : Jacob van Vloten (PhD student; co-advised);

Principal Investigator : Sarah K. Wootton

2017/5 - 2017/8
Principal Investigator

Enhancing Dendritic Cell-Based Anti-Cancer Vaccines Through Adaptation to a Hypoxic Microenvironment (student salary support), Scholarship

**Funding Sources:**

National Centre of Excellence in Biotherapeutics for Cancer Treatment (BioCanRx)
Summer Studentship
Total Funding - 6,000
Portion of Funding Received - 6,000
Funding Competitive?: Yes

Principal Applicant : Mankerat Singh;

Principal Investigator : Khalil Karimi

2014/9 - 2017/8
Principal Investigator

Using Oncolytic Viruses to Potentiate Histone Deacetylase Inhibitor-Mediated Killing of Acute Lymphoblastic Leukemia B Bells (student stipend support), Scholarship

**Funding Sources:**

2014/9 - 2017/8 Ontario Veterinary College
PhD Scholarship
Total Funding - 42,000 (Canadian dollar)
Portion of Funding Received - 42,000
Funding Competitive?: Yes

Principal Applicant : Megan Whaley (PhD student)

2016/9 - 2017/8
Principal Investigator

Augmentation of a Canine Melanoma Vaccine with Immunomodulatory Antibodies (student stipend support), Scholarship

**Funding Sources:**

2016/9 - 2017/8 Canadian Institutes of Health Research (CIHR)
Canada Graduate Scholarship - Master's
Total Funding - 17,500 (Canadian dollar)
Portion of Funding Received - 17,500
Funding Competitive?: Yes

Principal Applicant : Wing Ka "Amanda" AuYeung (MSc student)

2016/9 - 2017/8
Co-applicant

Support for Development of Novel Cancer Biotherapies, Grant

**Funding Sources:**

2016/9 - 2016/12 Private donation
Private donation
Total Funding - 25,000 (Canadian dollar)
Portion of Funding Received - 8,333
Funding Competitive?: No

Co-applicant : James Petrik;

Principal Applicant : Sarah Wootton

2014/6 - 2017/6
Principal Applicant

Assessment of Canine Melanoma Samples from the Ontario Veterinary College-Companion Animal Tumour Bank for Expression of Antigens that can be Targeted with an Oncolytic Cancer Vaccine, Grant

**Funding Sources:**

2014/6 - 2015/5 Pet Trust Fund (The)
Operating Grant
Total Funding - 11,593 (Canadian dollar)
Portion of Funding Received - 11,593
Funding Competitive?: Yes

2016/1 - 2016/12
Co-applicant

Support for Development of Novel Cancer Biotherapies, Grant

**Funding Sources:**

2016/1 - 2016/12 Private donation
Private donation
Total Funding - 50,000 (Canadian dollar)
Portion of Funding Received - 16,667
Funding Competitive?: No

Co-applicant : James Petrik;

Principal Applicant : Sarah Wootton

2015/9 - 2016/8
Principal Investigator

Augmentation of a Canine Melanoma Vaccine with Immunomodulatory Antibodies (student stipend support), Scholarship

**Funding Sources:**

2015/9 - 2016/8 Pet Trust Foundation
OVC Pet Trust Scholar Program
Total Funding - 35,000 (Canadian dollar)
Portion of Funding Received - 18,500
Funding Competitive?: Yes

Principal Applicant : Wing Ka "Amanda" Au Yeung (MSc student)

2016/5 - 2016/8
Principal Applicant

Evaluating the Impact of Oxygen Level, Temperature and pH on the Oncolytic Potential of Viruses and Epigenetic Modifiers in Canine Osteosarcoma Cells (student salary support), Scholarship

**Funding Sources:**

2016/5 - 2016/8 Zoetis Canada
Summer Student Research Fund
Total Funding - 8,000 (Canadian dollar)
Portion of Funding Received - 8,000
Funding Competitive?: Yes

Co-applicant : Manali Desai (summer research assistant)

2016/5 - 2016/8
Principal Investigator

Type I Interferon Signalling as a Master Switch for the Negative Regulation of a Broad Array of Cytokines (student salary support), Scholarship

**Funding Sources:**

2016/5 - 2016/8 Natural Sciences and Engineering Research Council of Canada (NSERC)
Undergraduate Student Research Award
Total Funding - 4,400 (Canadian dollar)
Portion of Funding Received - 4,400
Funding Competitive?: Yes

Principal Applicant : Katrina Allison (summer research assistant)

2016/5 - 2016/8
Principal Applicant

Temperature as a Confounding Variable in Oncolytic Virotherapy for Canine Melanomas (student salary support), Scholarship

**Funding Sources:**

2016/5 - 2016/8 Merial
Summer Research Assistantship
Total Funding - 8,000 (Canadian dollar)
Portion of Funding Received - 8,000
Funding Competitive?: Yes

Co-applicant : Julia Saturno (summer research assistant)

2015/9 - 2016/8
Principal Investigator

The Development of Recombinant Parapoxvirus ovis (OrfV) for Use in Oncolytic Virotherapy (student stipend support), Scholarship

**Funding Sources:**

2015/9 - 2016/8 Natural Sciences and Engineering Research Council of Canada (NSERC)
Graduate Scholarship
Total Funding - 21,000 (Canadian dollar)
Portion of Funding Received - 10,500
Funding Competitive?: Yes

Principal Applicant : Jacob van Vloten (PhD student; co-advised);

Principal Investigator : Sarah K. Wootton

2014/9 - 2016/8
Principal Applicant

Evaluation of Adjunct Oncolytic Immunotherapy in a Canine Lymphoma Clinical Trial, Grant

**Funding Sources:**

2014/6 - 2016/5 Cancer Research Society (The)
Operating Grant
Total Funding - 120,000 (Canadian dollar)
Portion of Funding Received - 120,000
Funding Competitive?: Yes

Co-applicant : J. Paul Woods

2014/8 - 2016/6
Co-applicant

Oncolytic Viral Vaccine Therapy of Breast Carcinoma, Grant

**Funding Sources:**

2014/6 - 2016/5 Canadian Breast Cancer Foundation (CBCF)
Research Project Grant Program
Total Funding - 298,416 (Canadian dollar)
Portion of Funding Received - 59,472
Funding Competitive?: Yes

Co-applicant : J. Paul Woods;

Principal Applicant : Brian D. Lichty

2015/7 - 2016/6
Co-applicant

Accelerated Clinical Development of Synthetic Antibody Immuno-Modulators Through Companion Animal Trials, Grant

**Funding Sources:**

2015/7 - 2016/6 National Centre of Excellence in Biotherapeutics for Cancer Treatment (BioCanRx)
Enabling Grant
Total Funding - 143,716 (Canadian dollar)
Portion of Funding Received - 32,100
Funding Competitive?: Yes

Principal Applicant : Jason Moffat

2014/9 - 2015/8
Principal Investigator

The Development of Recombinant Parapoxvirus ovis (OrfV) for Use in Oncolytic Virotherapy (student stipend support), Scholarship

**Funding Sources:**

2014/9 - 2015/8 Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA)
Highly Qualified Personnel PhD Scholarship
Total Funding - 21,000 (Canadian dollar)
Portion of Funding Received - 10,500
Funding Competitive?: Yes

Principal Applicant : Jacob van Vloten (PhD student; co-advised);

Principal Investigator : Sarah K. Wootton

2013/9 - 2015/8
Principal Investigator

The Role of Type I Interferon Receptor-Mediated Signaling in the Regulation of Cytokines Produced by Dendritic Cells (student stipend support), Scholarship

**Funding Sources:**

2013/9 - 2015/8 University of Guelph
Ontario Veterinary College MSc Fellowship
Total Funding - 30,000 (Canadian dollar)
Portion of Funding Received - 30,000
Funding Competitive?: Yes

**Funding by Year:**

2013/9 - 2015/8 Total Funding - 30,000
Portion of Funding Received - 30,000
Time Commitment: 0

Principal Applicant : Alexandra Rasiuk (MSc student)

2015/5 - 2015/8
Principal Applicant

Transient Lymphopenia as a Mechanism to Allow an Oncolytic Virus to Replicate Inside a Tumour Despite Vaccination Against a Virus-Encoded Antigen (student salary support), Scholarship

**Funding Sources:**

2015/5 - 2015/8 Natural Sciences and Engineering Research Council of Canada (NSERC)
Undergraduate Student Research Assistantship
Total Funding - 4,400 (Canadian dollar)
Portion of Funding Received - 4,400
Funding Competitive?: Yes

Co-applicant : Wing Ka "Amanda" Au Yeung (summer student)

2014/9 - 2015/8
Principal Investigator

Using Virus-Infected Dendritic Cells as Cancer Vaccines (student stipend support), Scholarship

**Funding Sources:**

2014/9 - 2016/8 University of Guelph
Graduate Research Assistant Tuition Supplement
Total Funding - 8,000 (Canadian dollar)
Portion of Funding Received - 8,000
Funding Competitive?: No

Principal Applicant : Robert Mould (MSc student)

2015/5 - 2015/8
Principal Applicant

Assessment of the Potential to Treat Canine Cancers with an Oncolytic Vaccine (student salary support), Scholarship

**Funding Sources:**

2015/5 - 2015/8 Zoetis Canada
Zoetis Summer Student Research Fund
Total Funding - 8,000 (Canadian dollar)
Portion of Funding Received - 8,000
Funding Competitive?: Yes

Co-applicant : Julia Kim (summer student)

2014/8 - 2015/7
Principal Applicant

Replacement of a Core Facility's Heavily-Used, 22-Year-Old Analytical Flow Cytometer for Which Parts and Service are no Longer Guaranteed, Grant

**Funding Sources:**

2014/8 - 2015/7 Natural Sciences and Engineering Research Council of Canada (NSERC)
Research Tools and Infrastructure
Total Funding - 103,249 (Canadian dollar)
Portion of Funding Received - 34,417
Funding Competitive?: Yes

Co-applicant : Brandon Plattner; Dorothee Bienzle

2013/7 - 2015/6
Principal Applicant

In Vitro Efficacy Testing of Oncolytic Viruses, Grant

**Funding Sources:**

2013/7 - 2015/6 Private donation
Private donation
Total Funding - 15,000 (Canadian dollar)
Portion of Funding Received - 15,000
Funding Competitive?: No

2012/6 - 2015/5
Principal Investigator

Assessment of the Potential to Treat Canine Lymphoma with an Oncolytic Vaccine, Grant, Operating
Clinical Research Project?: No
Project Description: We have published a strategy to synergize immunotherapy and oncolytic virotherapy, leading to durable cures in mouse models of cancer. To translate our success into a future canine lymphoma clinical trial, we must conduct preliminary studies to demonstrate safety and efficacy. This proposal has four aims: 1. prove that oncolytic immunotherapy is safe in dogs, 2. show that robust tumour-specific immune responses can be induced, 3. confirm expression of the targeted tumour antigen on canine lymphomas, and 4. show that effector mechanisms mediated by the treatment can kill lymphoma cells. This will provide the scientific rationale for a future clinical dog lymphoma trial. It will also allow us to get a permit for field testing from the Canadian Food Inspection Agency (CFIA), which is required before clinical testing of oncolytic viruses in pets.
Research Uptake: The goal of this research is to translate the findings into a clinical veterinary trial in which dogs with lymphoma will be treated. This will serve two purposes. It will provide a direct, practical benefit to pet owners and will serve as an intermediate animal model in support of a broad collaborative effort to test oncolytic vaccines in human clinical trials. Findings from these studies will also be disseminated via submission for publication in peer-reviewed journals.

Research Uptake Stakeholders: Academic Personnel

Research Settings: Canada (Urban)

**Funding Sources:**

2012/6 - 2015/5 Pet Trust Fund (The)
Operating Grant
Total Funding - 45,016 (Canadian dollar)
Portion of Funding Received - 100 (Canadian dollar)
Funding Renewable?: No
Funding Competitive?: Yes

**Funding by Year:**

2012/9 - 2013/8 Total Funding - 45,016 (Canadian dollar)
Portion of Funding Received - 100 (Canadian dollar)
Time Commitment: 6

Research Disciplines: Immunology, Virology

Areas of Research: Vaccine and Cancer, Immunotherapy

Fields of Application: Biomedical Aspects of Human Health

Co-investigator : Dr. J. Paul Woods

2014/9 - 2015/4
Principal Applicant

Testing the Efficacy of Cancer Therapeutics in Ovarian and Mammary Carcinoma Cells (student salary support), Scholarship

**Funding Sources:**

2014/9 - 2015/4 University of Guelph
Work-Study
Total Funding - 2,210 (Canadian dollar)
Portion of Funding Received - 2,210
Funding Competitive?: No

Co-applicant : Wing Ka "Amanda" Au Yeung (undergraduate student)

2012/9 - 2014/8
Principal Investigator

Characterizing a Novel Immunoevasion Strategy for Brain Cancer and How to Circumvent It (student stipend support), Scholarship

**Funding Sources:**

2012/9 - 2014/8 University of Guelph
Ontario Veterinary College MSc Scholarship
Total Funding - 30,000 (Canadian dollar)
Portion of Funding Received - 30,000
Funding Competitive?: Yes

**Funding by Year:**

2012/9 - 2014/8 Total Funding - 30,000
Portion of Funding Received - 30,000
Time Commitment: 0

Principal Applicant : Zafir Syed (MSc student)

2014/5 - 2014/8
Principal Applicant

Evaluation of an Oncolytic Vaccine in Dogs (student salary support), Scholarship

**Funding Sources:**

2014/5 - 2014/8 Natural Sciences and Engineering Research Council of Canada (NSERC)
Undergraduate Student Research Assistantship
Total Funding - 4,400 (Canadian dollar)
Portion of Funding Received - 4,400
Funding Competitive?: Yes

Co-applicant : Larissa Hattin (summer student)

2012/9 - 2014/8
Principal Applicant

Combining Histone Deacetylase Inhibition and Transient, Virus-Induced Lymphopenia to Treat Leukemia (student stipend support), Scholarship

**Funding Sources:**

2012/9 - 2014/8 University of Guelph
Ontario Veterinary College MSc Scholarship
Total Funding - 30,000 (Canadian dollar)
Portion of Funding Received - 30,000
Funding Competitive?: Yes

**Funding by Year:**

2012/9 - 2014/8 Total Funding - 30,000
Portion of Funding Received - 30,000
Time Commitment: 0

Principal Applicant : Christian Ternamian (MSc student)

2013/6 - 2014/5
Co-applicant

Upgrade to State-of-the-Art Flow Cytometric Equipment, Grant

**Funding Sources:**

2013/6 - 2015/5 Natural Sciences and Engineering Research Council of Canada (NSERC)
Research Tools and Instruments Grant
Total Funding - 148,230 (Canadian dollar)
Portion of Funding Received - 49,410
Funding Competitive?: Yes

**Funding by Year:**

2013/6 - 2015/5 Total Funding - 148,230
Portion of Funding Received - 49,410
Time Commitment: 7

Co-applicant : Dr. Dorothee Bienzle;

Principal Applicant : Dr. Brandon Plattner

2013/5 - 2014/4
Principal Applicant

Development of an Immune Response Monitoring Facility to Support Clinical Testing of Novel Cancer Biotherapies in Companion Animals, Grant

**Funding Sources:**

2013/5 - 2014/4 The Smiling Blue Skies Cancer Fund
Donation
Total Funding - 14,554 (Canadian dollar)
Portion of Funding Received - 14,554
Funding Competitive?: No

**Funding by Year:**

2013/5 - 2014/4 Total Funding - 14,554
Portion of Funding Received - 14,554
Time Commitment: 3

2013/9 - 2014/4
Principal Applicant

Evaluating the Role of Akt Isoforms in the Sensitivity of Lung Cancer Cells to Oncolytic Viruses (student salary support), Scholarship

**Funding Sources:**

2013/9 - 2014/4 University of Guelph
Work-Study
Total Funding - 2,210 (Canadian dollar)
Portion of Funding Received - 2,210
Funding Competitive?: No

Co-applicant : Wing Ka "Amanda" Au Yeung (undergraduate student)

2012/5 - 2013/8
Principal Applicant

Using an Innate Anti-Viral Immune Response in the Presence of a Histone Deactylase Inhibitor to Treat Leukemias (student salary support), Scholarship

**Funding Sources:**

2012/5 - 2012/8 Canadian Society for Immunology
Summer Internship in Immunology
Total Funding - 2,400 (Canadian dollar)
Portion of Funding Received - 2,400
Funding Competitive?: Yes

**Funding by Year:**

2012/5 - 2012/8 Total Funding - 2,400
Portion of Funding Received - 2,400
Time Commitment: 0

Co-applicant : Evan Lusty (summer student)

2013/5 - 2013/8
Principal Applicant

Development of Flow Cytometry-Based Immunological Assays to Support Pre-Clinical and Clinical Companion Animal Cancer Trials (student salary support), Scholarship

**Funding Sources:**

2013/5 - 2013/8 University of Guelph
Undergraduate Research Assistant
Total Funding - 4,400 (Canadian dollar)
Portion of Funding Received - 4,400
Funding Competitive?: Yes

**Funding by Year:**

2013/5 - 2013/8 Total Funding - 6,600
Portion of Funding Received - 6,600
Time Commitment: 0

Co-applicant : Wing Ka "Amanda" Au Yeung (summer student)

2012/9 - 2013/4
Principal Applicant

Testing the Efficacy of Cancer Therapeutics in Prostate Cancer Cell Lines (student salary support), Scholarship

**Funding Sources:**

2012/9 - 2013/4 University of Guelph
Work-Study
Total Funding - 2,210 (Canadian dollar)
Portion of Funding Received - 2,210
Funding Competitive?: No

Co-applicant : Jason Morgenstern (undergraduate student)

2012/5 - 2012/8
Principal Applicant

Establishment of Leukemia/Lymphoma Cell Lines from Clinical Specimens and Evaluation of Their Susceptibility to Oncolytic Viruses (student salary support), Scholarship

**Funding Sources:**

2012/5 - 2012/8 University of Guelph
Undergraduate Research Assistantship
Total Funding - 6,000 (Canadian dollar)
Portion of Funding Received - 6,000
Funding Competitive?: Yes

**Funding by Year:**

2012/5 - 2012/8 Total Funding - 6,000
Portion of Funding Received - 6,000
Time Commitment: 0

Co-applicant : Jason Morgenstern (summer student)

**Declined [n=6]**

2017/9 - 2021/8
Principal Investigator

Enhancing Immunogenic Cancer Cell Death Through the Novel Combination of Oncolytic Viruses and Photodynamic Therapy (student stipend support), Scholarship

**Funding Sources:**

2017/9 - 2020/8 Ontario Government
Ontario Graduate Scholarship
Total Funding - 60,000 (Canadian dollar)
Portion of Funding Received - 0
Funding Competitive?: Yes

Principal Applicant : Ashley Ross;

Principal Investigator : Sarah Wootton

2017/9 - 2020/8
Co-applicant

Enhancing Immunogenic Cancer Cell Death Through the Novel Combination of Oncolytic Viruses and Photodynamic Therapy (student stipend support), Scholarship

**Funding Sources:**

2017/9 - 2020/8 Ontario Veterinary College (OVC)
Doctoral Scholarship
Total Funding - 60,000 (Canadian dollar)
Portion of Funding Received - 0
Funding Competitive?: Yes

Principal Applicant : Ashley Ross;

Principal Investigator : Sarah Wootton

2016/9 - 2018/12
Co-applicant

The Development of Recombinant Parapoxvirus ovis (OrfV) for Use in Oncolytic Virotherapy (student stipend support; declined due to receipt of external scholarships), Scholarship

**Funding Sources:**

Ontario Veterinary College (OVC)
Graduate Scholarship
Total Funding - 17,000
Portion of Funding Received - 17,000
Funding Competitive?: Yes

Co-applicant : Sarah K. Wootton;

Principal Applicant : Jacob van Vloten

2016/9 - 2017/8
Co-applicant

Augmentation of a Canine Melanoma Vaccine with Immunomodulatory Antibodies (student stipend support), Scholarship

**Funding Sources:**

2016/9 - 2017/8 Pet Trust Foundation
OVC Pet Trust Scholar Program
Total Funding - 17,500 (Canadian dollar)
Portion of Funding Received - 17,500
Funding Competitive?: Yes

Principal Applicant : Wing Ka "Amanda" AuYeung (MSc student)

2015/9 - 2016/8
Principal Investigator

The Development of Recombinant Parapoxvirus ovis (OrfV) for Use in Oncolytic Virotherapy (student stipend support), Scholarship

**Funding Sources:**

2015/9 - 2016/8 Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA)
Highly Qualified Personnel PhD Scholarship
Total Funding - 21,000 (Canadian dollar)
Portion of Funding Received - 0
Funding Competitive?: Yes

Principal Applicant : Jacob van Vloten (PhD student; co-advised);

Principal Investigator : Sarah K. Wootton

2015/9 - 2016/8
Principal Investigator

Using Virus-Infected Dendritic Cells as Cancer Vaccines (student stipend support), Scholarship

**Funding Sources:**

2015/9 - 2016/8 University of Guelph
Graduate Research Assistant Tuition Supplement
Total Funding - 8,000 (Canadian dollar)
Portion of Funding Received - 0
Funding Competitive?: No

Principal Applicant : Robert Mould (MSc student; transferred to PhD)

## Courses Taught

Instructor, University of Guelph
Course Title: Mechanisms of Disease
Course Code: PABI*6104
Course Level: Graduate
Section: Lectures: 1. Oncolytic and Immunotherapies 2. Flow Cytometry: Principles and Applications
Number of Students: 10
Guest Lecture?: Yes

Instructor, University of Guelph
Course Title: Research in Biomedical Sciences Literature Review
Course Code: BIOM*4500
Course Level: Undergraduate
Number of Students: 1

Instructor, University of Guelph
Course Title: Research Project in Microbiology
Course Code: MCB*4500
Course Level: Undergraduate
Number of Students: 1

Instructor, University of Guelph
Course Title: Clinical Teaching for Oncology Residents
Course Level: Post Graduate
Section: A single lecture given to help veterinary oncology residents prepare for the immunology portion of the clinical licensing examination.
Number of Students: 4
Guest Lecture?: Yes

Instructor, University of Guelph
Course Title: Research Project in Toxicology
Course Code: TOX*4910
Course Level: Undergraduate
Number of Students: 1

Instructor, University of Guelph
Course Title: Small Animal Internal Medicine II
Course Code: CLIN*6560
Course Level: Graduate
Section: Lecture: A Review of Basic Veterinary Immunology With a Focus on Vaccination
Number of Students: 6
Guest Lecture?: Yes

Instructor, University of Guelph
Course Title: Research Project in Human Health and Nutritional Sciences
Course Code: HK*4371
Course Level: Undergraduate
Number of Students: 1

Instructor, University of Guelph
Course Title: Pandemics
Course Code: UNIV*2020
Course Level: Undergraduate
Section: Lecture: COVID-19 Vaccines
Number of Students: 200
Guest Lecture?: Yes

Instructor, University of Guelph
Course Title: Gene Expression in Health and Disease
Course Code: BIOM*6800
Course Level: Graduate
Section: Lecture: Identification of Genes Encoding Tumour-Associated Antigens and Their use in Cancer Vaccine Design
Number of Students: 12
Guest Lecture?: Yes

Instructor, University of Guelph
Course Title: Research Project in Microbiology
Course Code: MCB*4510
Course Level: Undergraduate
Number of Students: 1

Instructor, University of Guelph
Course Title: Veterinary Physiology and Biochemistry
Course Code: VETM*3080
Course Level: Undergraduate
Section: Immunology
Number of Students: 125

Instructor, University of Guelph
Course Title: Research Project in Biomedical Sciences
Course Code: BIOM*4522
Course Level: Undergraduate
Number of Students: 1

Instructor, University of Guelph
Course Title: Cancer Biology
Course Code: BIOM*4150
Course Level: Undergraduate
Section: Cancer Immunology and Immunotherapy
Number of Students: 30

Instructor, University of Guelph
Course Title: Research Project in Biomedical Sciences
Course Code: BIOM*4521
Course Level: Undergraduate
Number of Students: 1

Instructor, University of Guelph
Course Title: Research Project in Human Health and Nutritional Sciences
Course Code: HK*4372
Course Level: Undergraduate
Number of Students: 1

Instructor, University of Guelph
Course Title: Cancer Biology
Course Code: BIOM*6300
Course Level: Graduate
Section: Cancer Immunology and Immunotherapy
Number of Students: 10

Instructor, University of Guelph
Course Title: Special Topics in Pathobiology
Course Code: PABI*6960
Course Level: Graduate
Number of Students: 1

Instructor, University of Guelph
Course Title: Research Project in Toxicology
Course Code: TOX*4900
Course Level: Undergraduate
Number of Students: 1

Instructor, University of Guelph
Course Title: Principles of Disease in Veterinary Medicine
Course Code: VETM*3450
Course Level: Undergraduate
Section: Review lecture: Making Sense of Alphabet Soup: Immune Responses to Viruses, From A to Z
Guest Lecture?: Yes

## Student/Postdoctoral Supervision

### Bachelor's [n=1]

2020/9 - 2021/4
Principal Supervisor

Julia Kakish (Completed) , University of Guelph
Thesis/Project Title: Cold-Adaptation of Viruses for Use as Vaccine Vectors (undergraduate research project student)
Present Position: Currently a member of my research team

### Bachelor's Equivalent [n=10]

2020/5 - 2020/8
Principal Supervisor

Lily Chan (Completed) , University of Guelph
Thesis/Project Title: Calming the Storm: Dissecting the Roles of Innate Lymphoid Cells in Cytokine-Mediated Pulmonary Inflammation Induced by Oncolytic Vesicular Stomatitis Virus (undergraduate summer research assistant)
Present Position: Currently a MSc student in my laboratory, University of Guelph

2020/5 - 2020/8
Principal Supervisor

Kiersten Hanada (Completed) , University of Guelph
Thesis/Project Title: Calming the Cytokine Storm: Developing a Model to Study Toxic Cytokine Responses to Viruses (undergraduate summer research assistant)
Present Position: Completing the DVM program, University of Guelph

2018/5 - 2018/8
Principal Supervisor

Samantha Holtz (Completed) , University of Guelph
Student Degree Start Date: 2018/5
Student Degree Received Date: 2018/8
Thesis/Project Title: Combining Oncolytic Virotherapy with Epigenetic Modifiers to Treat Lymphomas (undergraduate summer research assistant)
Present Position: Completed a post-graduate diploma program., Queen's University

2017/5 - 2017/8
Principal Supervisor

Julia Saturno (Completed) , University of Guelph
Student Degree Start Date: 2017/5
Student Degree Received Date: 2017/8
Thesis/Project Title: Pyrexia Can Impair Oncolytic Virotherapy (summer research assistantship)
Project Description: This student conducted research in my laboratory for the summer of 2017, while enrolled in the doctor of veterinary medicine program, University of Guelph.
Project title: Temperature as a confounding variable in oncolytic virotherapy for canine melanomas.
Present Position: veterinary practice

2016/5 - 2016/8
Principal Supervisor

Manali Desai (Completed) , University of Guelph
Student Degree Start Date: 2016/5
Student Degree Received Date: 2016/8
Thesis/Project Title: Evaluating the Impact of Temperature on the Oncolytic Potential of Viruses in Canine and Murine Osteosarcoma Cells (summer research assistantship)
Project Description: Studied the efficacy of oncolytic viruses in a panel of canine and murine osteosarcoma cell lines.
Present Position: veterinary practice

2016/5 - 2016/8
Principal Supervisor

Julia De Carvalho Nakamura (Completed) , University of Sao Paulo, Brazil
Student Degree Start Date: 2016/5
Student Degree Received Date: 2016/8
Thesis/Project Title: The Impact of Temperature on the Oncolytic Activity of Viruses (summer research assistantship)
Project Description: Participated in Students Without Borders Program, May-September 2016; conducted research in my laboratory stydying the effect of high and low temperatures on oncolytic viruses.
Present Position: Veterinary practice, Sao Paulo, Brazil

2016/5 - 2016/8
Principal Supervisor

Julia Saturno (Completed) , University of Guelph
Student Degree Start Date: 2016/5
Student Degree Received Date: 2016/8
Thesis/Project Title: Temperature as a Confounding Variable in Oncolytic Virotherapy for Canine Melanomas (summer research assistantship)
Project Description: Studied the efficacy of oncolytic viruses in a panel of canine melanoma cell lines.
Present Position: veterinary practice

2015/5 - 2015/8
Principal Supervisor

Haley Spangler-Forgione (Completed) , University of Guelph
Student Degree Start Date: 2015/5
Student Degree Received Date: 2015/8
Thesis/Project Title: Par6 Influences the Susceptibility of Mammary Carcinoma Cells to Oncolytic Viruses (summer research assistantship)
Project Description: Title of project: Par6 influences the susceptibility of mammary carcinoma cells to oncolytic viruses
Present Position: Veterinary practice

2015/5 - 2015/8
Principal Supervisor

Julia Kim (Completed) , University of Guelph
Student Degree Start Date: 2015/5
Student Degree Received Date: 2015/8
Thesis/Project Title: Assessment of the Potential to Treat Canine Cancers with an Oncolytic Vaccine (summer research assistantship)
Project Description: Undergraduate summer research assistant, May - August 2014. Project: Used western blotting to assess canine osteosarcoma, melanoma and lymphoma specimens for the expression of various tumour-associated antigens. The results will guide the development of novel viral vectors to be used in a future canine cancer trial.
Present Position: Graduate student, Department of Population Medicine, University of Guelph

2014/5 - 2014/8
Principal Supervisor

Julia Kim (Completed) , University of Guelph
Student Degree Start Date: 2013/9
Student Degree Received Date: 2014/8
Thesis/Project Title: Assessment of Canine Melanoma Samples from the Ontario Veterinary College-Companion Animal Tumour Bank for Expression of Antigens that can be Targeted with an Oncolytic Cancer Vaccine (summer research assistantship)
Project Description: Undergraduate summer research assistant, May - August 2015. Project: Assessment of the potential to treat canine cancers with an oncolytic vaccine.
Present Position: Graduate student, Department of Population Medicine, University of Guelph

**Bachelor's Honours [n=22]**

2020/9 - 2021/4
Principal Supervisor
Sierra Vanderkamp, University of Guelph
Thesis/Project Title: Evaluating the Role of Oxidative Stress in Off-Target Infections of T Cells by Oncolytic Rhabdoviruses (undergraduate research project student)
Present Position: Currently a member of my research team

2018/9 - 2019/4
Principal Supervisor
Jessica Minott (Completed) , University of Guelph
Thesis/Project Title: Assessing the Impact of Sex Hormones on the Efficacy of Oncolytic Viruses (4th year undergraduate research project student)
Present Position: Currently a MSc student in my laboratory, University of Guelph

2018/5 - 2018/8
Principal Supervisor
Jessica Minott (Completed) , University of Guelph
Thesis/Project Title: Assessing the Impact of Sex Hormones on the Efficacy of Oncolytic Viruses (undergraduate summer research assistant)
Present Position: Currently a MSc student in my laboratory, University of Guelph

2018/5 - 2018/8
Principal Supervisor
Elaine Klafuric (Completed) , University of Guelph
Thesis/Project Title: Type I Interferon-Mediated Regulation of IL-17 Production by Mast Cells (undergraduate summer research assistant)
Present Position: Currently a MSc student in my laboratory

2017/5 - 2017/8
Principal Supervisor
Mankerat Singh (Completed) , University of Guelph
Student Degree Start Date: 2017/5
Student Degree Received Date: 2017/8
Thesis/Project Title: Optimizing the Antigen Presentation Potential of Cultured Dendritic Cells Through the Use of Interleukin-4 (summer research assistantship)
Project Description: Mankerat complete his Honour's BSc program in April 2017 and then conducted a research project under my supervision for the summer 2017. Project title: Enhancing dendritic cell-based anti-cancer vaccines through adaptation to a hypoxic microenvironment.
Present Position: unknown

2016/9 - 2017/4
Principal Supervisor
Mankerat Singh (Completed) , University of Guelph
Student Degree Start Date: 2016/9
Student Degree Received Date: 2017/4
Thesis/Project Title: Optimizing a Dendritic Cell-Based Vaccine for Induction of Immunological Memory (4th year undergraduate research project)
Project Description: Mankerat conducted research in my laboratory for two semesters as an undergraduate student enrolled in the course HK*4371/2 (Research in Human Biology and Nutritional Sciences). His project was entitled: Differentiating dendritic cells in the presence of interleukin-4 to enhance their potential as vaccines. He subsequently presented this work at the Summit for Cancer Immunotherapy, Gatineau, QC, in June 2017, where he received the only undergraduate award for best poster.
Present Position: unknown

2016/5 - 2016/9
Principal Supervisor
Katrina Allison (Completed) , University of Guelph
Student Degree Start Date: 2012/9
Student Degree Received Date: 2016/8
Thesis/Project Title: Sex Disparity in Innate Immune Responses to Viral Infection: the Role of Type I Interferon
Project Description: Undergraduate summer research assistant in my laboratory; May-August 2016. Studied gender bias in the role of type I interferon signalling on the cytokine response to viral infection.
Present Position: Naturopathic Medicine College Training Program (Toronto, Ontario)

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| 2015/5 - 2015/8<br>Principal Supervisor | Wing Ka "Amanda" AuYeung (Completed) , University of Guelph<br>Student Degree Start Date: 2011/9<br>Student Degree Received Date: 2015/8<br>Thesis/Project Title: Transient Lymphopeniaas a Mechanism to Allow an Oncolytic Virus to Replicate Inside a Tumour Despite Vaccination Against a Virus-Encoded Antigen (NSERC Undergraduate Student Research Assistantship)<br>Project Description: Undergraduate summer research assistant, May-August 2015.<br>Project: Transient lymphopenia as a mechanism to allow an oncolytic virus to replicate inside a tumour despite vaccination against a virus-encoded antigen<br>Present Position: Flow Cytometry Technician, The Hospital for Sick Children, Toronto, Ontario, Canada |
| 2014/5 - 2014/9<br>Principal Supervisor | Larissa Hattin (Completed) , University of Guelph<br>Student Degree Start Date: 2010/9<br>Student Degree Received Date: 2014/8<br>Thesis/Project Title: Evaluation of an Oncolytic Vaccine in Dogs (NSERC Undergraduate Student Research Assistantship)<br>Project Description: Assessed the oncolytic potential of a recombinant Newcastle disease virus in human prostate cancer cell lines.<br>Present Position: Emergency medicine residency program, University of British Columbia |
| 2014/5 - 2014/8<br>Principal Supervisor | Robert Mould (Completed) , University of Guelph<br>Student Degree Start Date: 2010/9<br>Student Degree Received Date: 2014/4<br>Thesis/Project Title: Combining Antigen-Presenting Cell-Based Vaccination with Oncolytic Viruses for the Treatment of Prostate Cancers (summer research assistantship)<br>Project Description: Undergraduate summer research assistant, May-August 2014.<br>Project: The potential to use Orf virus and Newcastle disease virus-infected dendritic cells and/or macrophages as cancer vaccines.<br>Present Position: Postdoctoral fellow in my laboratory, University of Guelph |
| 2013/9 - 2014/4<br>Principal Supervisor | Larissa Hattin (Completed) , University of Guelph<br>Student Degree Start Date: 2013/9<br>Student Degree Received Date: 2014/8<br>Thesis/Project Title: Testing the Oncolytic Potential of Two Recombinant Newcastle Disease Viruses in Human Prostate Cancer Cell Lines (summer research assistantship)<br>Project Description: Sept. 2013-April 2014: Larissa conducted her 4th-year undergraduate research project (Course codes: BIOM*4521 [Fall semester] and BIOM*4522 [Spring semester]) in my laboratory. Project title: Testing the oncolytic potential of a novel recombinant Newcastle Disease Virus in human prostate cancer cell lines. She continued this project as a summer undergraduate research assistant, May-August 2014<br>Present Position: Emergency medicine residency program, University of British Columbia |
| 2013/9 - 2014/4<br>Principal Supervisor | Wing Ka "Amanda" AuYeung (Completed) , University of Guelph<br>Student Degree Start Date: 2011/9<br>Student Degree Received Date: 2015/4<br>Thesis/Project Title: Evaluating the Role ofAkt Isoforms in the Sensitivity of Lung Cancer Cells to Oncolytic Viruses (Work-Study Program; part-time research while pursuing full-time undergraduate studies)<br>Project Description: Undergraduate summer research assistant, May-August 2013.<br>Project: Development of flow cytometry-based immunological assays to support pre-clinical and clinical companion animal cancer trials.<br>Present Position: Flow Cytometry Technician, The Hospital for Sick Children, Toronto, Ontario, Canada |

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|---|---|
| 2013/9 - 2014/4<br>Principal Supervisor | Sofia Oke (Completed) , University of Guelph<br>Student Degree Start Date: 2010/9<br>Student Degree Received Date: 2014/4<br>Thesis/Project Title: Determining Whether TLR3 and/or TLR7 Ligation Causes Dysregulation of Cytokine Signaling in Macrophages Lacking the Type I Interferon Receptor (summer research assistantship)<br>Project Description: Sofia conducted her 4th-year undergraduate research project (Course codes: BIOM*4521 [Fall semester] and BIOM*4522 [Spring semester]) in my laboratory, September 2013-April 2014. Project: Determining whether TLR3 and/or TLR7 ligation causes dysregulation of cytokine signaling in dendritic cells lacking the type I interferon receptor.<br>Present Position: Research technician (Dr. Sachdev Sidhu's lab, University of Toronto) |
| 2013/9 - 2015/8<br>Principal Supervisor | Alexandra Rasiuk (Completed) , University of Guelph<br>Student Degree Start Date: 2009/9<br>Student Degree Received Date: 2013/8<br>Thesis/Project Title: The Role of Type I Interferon Signalling in the Regulation of Cytokines Produced by Antigen-Presenting Cells (4th year undergraduate research project)<br>Project Description: Undergraduate research project course (BIOM*4521 and BIOM*4522), Sept. 2012 - August 2013. Project: Studying the role of type I interferon receptor-mediated signaling in the regulation of cytokines produced by dendritic cells.<br>Present Position: Research associate in industry |
| 2013/5 - 2013/8<br>Principal Supervisor | Wing Ka "Amanda" AuYeung (Completed) , University of Guelph<br>Student Degree Start Date: 2013/9<br>Student Degree Received Date: 2014/4<br>Thesis/Project Title: Development of Flow Cytometry-Based Immunological Assays to Support Pre-Clinical and Clinical Companion Animal Cancer Trials (NSERC Undergraduate Student Research Assistantship)<br>Project Description: Part-time undergraduate research assistant (work-study program, September 2013 - April 2014. Project: The role of Akt isoforms in the rate of proliferation of cancer cell lines and their susceptibility to oncolytic viruses.<br>Present Position: Flow Cytometry Technician, The Hospital for Sick Children, Toronto, Ontario, Canada |
| 2013/5 - 2013/7<br>Principal Supervisor | Jason Morgenstern (Completed) , University of Guelph<br>Student Degree Start Date: 2009/9<br>Student Degree Received Date: 2013/4<br>Thesis/Project Title: Testing the Efficacy of Oncolytic Viruses, Histone Deacetylase Inhibitors and Toll-Like Receptor Ligands in Cancer Cell Lines (summer research assistantship)<br>Project Description: Undergraduate summer research assistant, May -August 2012. Project: Establishment of leukemia/lymphoma cell lines from clinical specimens and evaluation of their susceptibility to oncolytic viruses.<br>Present Position: Medical residency program in public health + Master's of Public Health program, McMaster University |

2012/9 - 2013/4
Principal Supervisor

Evan Lusty (Completed) , University of Guelph
Student Degree Start Date: 2009/9
Student Degree Received Date: 2013/4
Thesis/Project Title: Characterizing Oncolytic Viruses and Toll Like Receptor Ligands in the In Vitro Treatment of Human Prostate Cancer (4th year undergraduate research project)
Project Description: Evan conducted his 4th-year undergraduate research project (Course codes: BIOM*4521 [Fall semester] and BIOM*4522 [Spring semester]) in my laboratory. Project: Testing oncolytic viruses in human prostate cancer cell lines.
Present Position: MD program, Queen's University (Kingston, Ontario)

2012/9 - 2013/4
Principal Supervisor

Jason Morgenstern (Completed) , University of Guelph
Student Degree Start Date: 2009/9
Student Degree Received Date: 2013/4
Thesis/Project Title: Investigating the Potential to use Recombinant Newcastle Disease Viruses as Oncolytic Virotherapies for Prostate and Cervical Cancers (Work-Study Program; part-time research while pursuing full-time undergraduate studies)
Project Description: Undergraduate summer research assistant, May - July 2013. Project: Characterizing the oncolytic potential of a novel fowl reovirus in established cancer cell lines.
Present Position: Medical residency program in public health + Master's of Public Health program, McMaster University

2012/9 - 2013/4
Principal Supervisor

Alexandra Rasiuk (Completed) , University of Guelph
Student Degree Start Date: 2009/9
Student Degree Received Date: 2013/4
Thesis/Project Title: Optimization of a Protocol for Harvesting and Differentiating Murine Bone Marrow-Derived Dendritic Cells for use as a Cancer Vaccine (4th year undergraduate research project)
Project Description: Alexandra conducted her 4th-year undergraduate research project (Course codes: BIOM*4521 [Fall semester] and BIOM*4522 [Spring semester]) in my laboratory. Research project: Optimization of a protocol for harvesting and differentiating murine bone marrow-derived dendritic cells for use as a cancer vaccine.
Present Position: Post-graduate diploma program in clinical research at Seneca College, Toronto

2012/5 - 2012/8
Principal Supervisor

Jason Morgenstern (Completed) , University of Guelph
Student Degree Start Date: 2009/9
Student Degree Received Date: 2013/4
Thesis/Project Title: Evaluation of the Susceptibility of Cancer Cell Lines to Oncolytic Viruses (summer research assistantship)
Project Description: Part-time undergraduate research assistant (work-study program), September 2012-April 2013. Project: Testing oncolytic viruses in human prostate and cervical cancer cell lines.
Present Position: Medical residency program in public health + Master's of Public Health program, McMaster University

2012/5 - 2013/7
Principal Supervisor
Evan Lusty (Completed) , University of Guelph
Student Degree Start Date: 2009/9
Student Degree Received Date: 2013/4
Thesis/Project Title: Testing Various Oncolytic Viruses, Histone Deacetylase Inhibitors and Toll-Like Receptor Ligands as Monotherapies in Human Prostate and Cervical Cancer Cells (summer research assistantship)
Project Description: Undergraduate summer research assistant, May - August 2012. Was awarded a Canadian Society for Immunology - Summer Internship in Immunology for this work. Project: Using an innate anti-viral immune response in the presence of a histone deactylase inhibitor to treat leukemias.
Present Position: MD program, Queen's University (Kingston, Ontario)

2012/5 - 2012/8
Principal Supervisor
Evan Lusty (Completed) , University of Guelph
Student Degree Start Date: 2009/9
Student Degree Received Date: 2013/4
Thesis/Project Title: Using an Innate Anti-Viral Immune Response in the Presence of a Histone Deacetylase Inhibitor to Treat Leukemias (summer research assistantship)
Project Description: Undergraduate summer research assistant May - June 2013. Project: Testing oncolytic viruses in human prostate cancer cell lines.
Present Position: MD program, Queen's University (Kingston, Ontario)

**Master's Equivalent [n=1]**

2020/2 - 2022/10
Principal Supervisor
Yeganeh Mehrani (Completed) , Ferdowsi University of Mashhad, Iran
Thesis/Project Title: Development of Flow Cytometric Methods to Evaluate Canine Innate Lymphocyte Subsets
Present Position: Visiting scientist in my laboratory

**Master's Thesis [n=13]**

2024/6
Academic Advisor
Spencer Leuschner (In Progress) , University of Guelph

2021/9 - 2023/8
Academic Advisor
Sierra Vanderkamp (Completed) , University of Guelph
Student Degree Start Date: 2021/9
Student Degree Received Date: 2023/8
Thesis/Project Title: Mechanisms Governing Off-Target Infection and Killing of T Cells by Oncolytic Viruses

2021/9 - 2023/4
Academic Advisor
Julia Kakish (Completed) , University of Guelph
Student Degree Start Date: 2021/9
Student Degree Received Date: 2023/4
Thesis/Project Title: Investigating the Effect of Reduced Temperatures on the Efficacy of Rhabdovirus-Based Viral Vector Platforms

2021/4 - 2022/8
Academic Advisor
Fatemeh Darya Fazel (In Progress) , University of Guelph
Student Degree Start Date: 2020/9
Student Degree Expected Date: 2022/8
Thesis/Project Title: mRNA-Based Vaccines for Preventing the Infection of Poultry with Influenza Viruses

2020/9
Principal Supervisor
Lily Chan (In Progress) , University of Guelph
Student Degree Start Date: 2020/9
Student Degree Expected Date: 2022/8
Thesis/Project Title: The Roles of Innate Leukocytes in Dendritic Cell-Based Vaccinations
Present Position: Currently a member of my research team

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| 2018/9<br>Principal Supervisor | Elaine Klafuric (In Progress) , University of Guelph<br>Student Degree Start Date: 2018/9<br>Student Degree Expected Date: 2021/12<br>Thesis/Project Title: Combining Oncolytic Viruses with Epigenetic Modifiers to Treat Acute Myeloid Leukemias<br>Present Position: Currently a member of my research team, University of Guelph |
| 2017/9 - 2019/12<br>Academic Advisor | Adriana Bianco (Completed) , University of Guelph<br>Student Degree Start Date: 2017/9<br>Student Degree Received Date: 2019/12<br>Thesis/Project Title: Anti-Cancer Effects of Beta Glucans<br>Present Position: unknown |
| 2016/9 - 2016/12<br>Principal Supervisor | Katrina Allison (Withdrawn) , University of Guelph<br>Student Degree Start Date: 2016/9<br>Thesis/Project Title: Sex Disparity in Innate Immune Responses to Viral Infection: the Role of Type I Interferon<br>Project Description: Studying gender bias in the role of type I interferon signalling on the cytokine response to viral infection.<br>Present Position: Naturopathic Medicine College Training Program (Toronto, Ontario) |
| 2015/9 - 2017/8<br>Principal Supervisor | Wing Ka "Amanda" AuYeung (Completed) , University of Guelph<br>Student Degree Start Date: 2015/9<br>Student Degree Received Date: 2017/8<br>Thesis/Project Title: Developing Novel Biotherapies for the Treatment of Melanomas<br>Project Description: Amanda is studying the mechanisms underlying biotherapies for melanomas.<br>Present Position: Research Associate, Notch Therapeutics, Toronto, Ontario, Canada, The Hospital for Sick Children, Toronto, Ontario, Canada |
| 2015/1 - 2016/8<br>Academic Advisor | Nahla El Skhawy (Completed) , University of Guelph<br>Student Degree Start Date: 2014/9<br>Student Degree Received Date: 2016/8<br>Thesis/Project Title: The Role of the Immune System in Johne's Disease in Cattle<br>Project Description: Immunological aspects of Johne's disease in cattle.<br>Present Position: unknown |
| 2013/9 - 2015/8<br>Principal Supervisor | Alexandra Rasiuk (Completed) , University of Guelph<br>Student Degree Start Date: 2013/9<br>Student Degree Received Date: 2015/8<br>Thesis/Project Title: Role of Type I Interferon Signalling in Regulating Survival, Proliferation, and Cytokine Production in Antigen-Presenting Cells<br>Project Description: Thesis title: Role of Type I Interferon Signalling in Regulating Survival, Proliferation, and Cytokine Production in Antigen-Presenting Cells<br>Present Position: Research associate in industry |
| 2012/9 - 2014/8<br>Principal Supervisor | Christian Ternamian (Completed) , University of Guelph<br>Student Degree Start Date: 2012/9<br>Student Degree Received Date: 2014/8<br>Thesis/Project Title: Targeting Acute Lymphoblastic Leukemia with Oncolytic Virotherapy and Immunotherapy<br>Project Description: Combining histone deacetylase inhibition and transient, virus-induced lymphopenia to treat leukemia.<br>Present Position: Completed Medical Doctorate program at Queen's University |

2012/9 - 2014/8
Principal Supervisor
Zafir Syed (Completed) , University of Guelph
Student Degree Start Date: 2012/9
Student Degree Received Date: 2014/8
Thesis/Project Title: Oncolytic Immunotherapy for the Treatment of High-Grade Gliomas
Project Description: Synergizing immuno- and oncolytic viro-therapies for the treatment of primary brain cancer.
Present Position: Radiology residency program, University of Western Ontario

**Doctorate [n=21]**

2024/5
Academic Advisor
Yeganeh Mehrani (In Progress) , University of Guelph
Student Degree Start Date: 2024/5

2022/2
Academic Advisor
Nicole Moran (In Progress) , University of Guelph
Thesis/Project Title: Impact of Selenium Supplementation on Ovine Colostrum Bioactives and Postnatal Health

2021/3
Academic Advisor
Ben Muselius (In Progress) , University of Guelph
Degree Name: PhD
Student Degree Start Date: 2021/1
Student Degree Expected Date: 2024/5
Thesis/Project Title: Proteomics Analysis of Infections with the Fungal Pathogen Cryptococcus neoformans
Present Position: graduate student

2020/11
Academic Advisor
Brenna Stevens (In Progress) , University of Guelph
Student Degree Start Date: 2020/9
Student Degree Expected Date: 2024/8
Thesis/Project Title: Gene Therapy for Cystic Fibrosis
Project Description: Transferred from MSc program.
Present Position: graduate student

2019/9
Academic Advisor
Sylvia Thomas (In Progress) , University of Guelph
Student Degree Start Date: 2019/9
Student Degree Expected Date: 2023/8
Thesis/Project Title: Adeno-Associated Virus-Vectored Gene Editing Platform for the Correction of Monogenic Lung Diseases
Project Description: Transferred from the MSc program.
Present Position: Graduate student in Wootton lab

2019/9 - 2025/4
Principal Supervisor
Jason Knapp (In Progress) , University of Guelph
Student Degree Start Date: 2019/9
Student Degree Expected Date: 2025/4
Thesis/Project Title: Heat-Adaptation of Oncolytic Rhabdoviruses to Improve Their Clinical Utility
Present Position: Graduate student in my laboratory

2019/9 - 2024/8
Principal Supervisor
Jessica Minott (In Progress) , University of Guelph
Student Degree Start Date: 2019/9
Student Degree Expected Date: 2022/8
Thesis/Project Title: Development of an Oncolytic Orf Virus-Infected Cell Vaccine for the Treatment of Spontaneous Mammary Carcinoma Metastases (transferred from MSc program)
Present Position: Graduate student in my laboratory

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| 2018/9 - 2022/8<br>Academic Advisor | Amira Rghei (In Progress) , University of Guelph<br>Student Degree Start Date: 2018/9<br>Thesis/Project Title: Adeno-Associated Virus-Vectored Immunoprophylaxis for Filovirus Infections<br>Present Position: Graduate student in Wootton lab |
| 2017/9 - 2021/8<br>Principal Supervisor | Ashley Stegelmeier (Completed) , University of Guelph<br>Student Degree Start Date: 2017/9<br>Student Degree Received Date: 2021/8<br>Student Canadian Residency Status: Canadian Citizen<br>Thesis/Project Title: Vectorizing Immunomodulatory Antibodies for the Treatment of Canine Melanomas<br>Project Description: The objective of this research is to enable tumour-bearing dogs to synthesize anti-canine PDL-1 in vivo using AAV with an inducibleTet-on promoter, which will allow fine control of expression of the antibody.This novel administration of an immunomodulatory canine antibody with aninducible promoter has the potential to improve efficacy of immunotherapies inmelanoma-bearing dogs while minimizing risk of off-target autoimmunity.<br>Present Position: Research Manager, Kitchener, Ontario, Canada |
| 2017/1 - 2020/1<br>Principal Supervisor | Maedeh "Mahi Azizi" Darzianiazizi (Completed) , University of Guelph<br>Student Degree Start Date: 2017/1<br>Student Degree Received Date: 2020/1<br>Thesis/Project Title: Elucidating the Roles of Sex, Neutrophils and Mast Cells in Type I Interferon-Regulated Cytokine Responses to Viruses<br>Present Position: Working in industry |
| 2017/1 - 2020/12<br>Academic Advisor | Nadiyah Alqazlan (Completed) , University of Guelph<br>Student Degree Start Date: 2016/9<br>Student Degree Received Date: 2020/12<br>Thesis/Project Title: Low Pathogenic Avian Influenza Virus H9N2 in Chickens: Transmission Routes, Effects of Environmental Factors on Transmission and Means to Disrupt Transmission<br>Project Description: LowPathogenic Avian Influenza Virus H9N2 in Chickens: Transmission Routes, Effectsof Environmental Factors on Transmission and Means to Disrupt Transmission<br>Present Position: PhD student (Sharif Lab, University of Guelph) |
| 2016/9 - 2020/8<br>Academic Advisor | Thomas McAusland (Completed) , University of Guelph<br>Student Degree Start Date: 2016/9<br>Student Degree Received Date: 2020/8<br>Thesis/Project Title: Development of Newcastle Disease Virus-Based Oncolytic Virotherapies<br>Project Description: Development of oncolytic Newcastle disease virus vectors for cancer therapy.<br>Present Position: Enrolled in police college |
| 2015/9 - 2021/12<br>Academic Advisor | Kathy Matuszewska (In Progress) , University of Guelph<br>Student Degree Start Date: 2015/9<br>Student Degree Expected Date: 2021/12<br>Thesis/Project Title: Combined Vessel Normalization and Oncolytic Virus Therapy in the Treatment of Advanced Stage Ovarian Cancer<br>Project Description: Using a derivative of thrombospondin-1 to normalize tumour vasculature for enhanced delivery of oncolytic viruses.<br>Present Position: PhD student (Petrik lab), University of Guelph |

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| 2015/9 - 2018/12<br>Academic Advisor | Laura van Lieshout (Completed) , University of Guelph<br>Student Degree Start Date: 2015/9<br>Student Degree Received Date: 2018/12<br>Thesis/Project Title: Using Adeno-Associated Viruses for Antibody-Mediated Vectored Immunophrophylaxis<br>Present Position: Postdoctoral fellow in the Wootton lab, University of Guelph |
| 2015/6 - 2022/4<br>Academic Advisor | Peyman Asadian (In Progress) , University of Guelph<br>Student Degree Start Date: 2015/9<br>Student Degree Expected Date: 2022/4<br>Thesis/Project Title: The Role of SAMHD1 in Feline Immunodeficiency Virus Infections<br>Project Description: Thesis title: Expression profile and role of restriction of Sterile alpha motif domain- and HD domain-containing protein 1 in restriction of Feline Immunodeficiency Virus<br>Present Position: Leave of absence (PhD student in Bienzle lab, University of Guelph) |
| 2014/9 - 2019/12<br>Academic Advisor | Joelle Ingrao (Withdrawn) , University of Guelph<br>Student Degree Start Date: 2014/9<br>Thesis/Project Title: Development of a Vaccine to Protect Against *Toxoplasmagondii* Infection in Sheep<br>Project Description: Development of a recombinant parapoxvirus vaccine to protect against *Toxoplasma gondii* infection in sheep<br>Present Position: Director, Catalent, Baltimore, Maryland, USA |
| 2014/9 - 2020/4<br>Principal Supervisor | Robert Mould (Completed) , University of Guelph<br>Student Degree Start Date: 2014/9<br>Student Degree Received Date: 2020/4<br>Thesis/Project Title: Development of Novel Cancer Biotherapies<br>Project Description: Was in the MSc program Sept. 2014-Aug. 2015; transferred into the PhD program, effective Sept. 2015. Project: Development of novel biotherapies for the treatment of osteosarcomas.<br>Present Position: Scientist at Ensoma, USA |
| 2014/9 - 2020/4<br>Co-Supervisor | Jacob van Vloten (Completed) , University of Guelph<br>Student Degree Start Date: 2014/9<br>Student Degree Received Date: 2020/4<br>Thesis/Project Title: The Development of Recombinant Parapoxvirus ovis (OrfV) for Use in Oncolytic Virotherapy<br>Project Description: Direct entry from the BSc program into the PhD program. Project: Development of a novel Orf virus natural isolate into a cancer biotherapy.<br>Present Position: Postdoctoral fellow in the lab of Dr. Richard Vile, Mayo Clinic, Rochester, Minnesota |
| 2014/9 - 2017/8<br>Principal Supervisor | Megan Strachan-Whaley (Completed) , University of Guelph<br>Student Degree Start Date: 2014/9<br>Student Degree Received Date: 2017/8<br>Thesis/Project Title: Combination of Epigenetic Modifier Drugs with Oncolytic Viral Therapy as a Novel Treatment for Leukemias<br>Project Description: Using oncolytic viruses to potentiate histone deacetylase inhibitor-mediated killing of acute lymphoblastic leukemia B cells.<br>Present Position: Postdoctoral fellow in industry |

2014/2 - 2016/8
Academic Advisor

Marianne Wilcox (Completed) , University of Guelph
Student Degree Start Date: 2013/9
Student Degree Received Date: 2016/8
Thesis/Project Title: Mathematical Modeling of Cytokine Storms in Rhabdovirus-Infected Mice Lacking Type I Interferon Signaling in Hematopoietic Cells
Project Description: Mathematical modeling of cytokine storms in rhabdovirus-infected mice lacking type I interferon signaling in hematopoietic cells.
Present Position: unknown

2013/8 - 2018/9
Academic Advisor

Lisa Santry (Completed) , University of Guelph
Student Degree Start Date: 2011/9
Student Degree Received Date: 2018/9
Thesis/Project Title: Functional Role of AKT Isoforms in Jaagsiekte Sheep Retrovirus Envelope Protein-Induced Lung Tumourigenesis and the Susceptibility of the Resulting Tumours to Viral Oncolysis
Project Description: Project #1: Functional role of AKT isoforms in Jaagsiekte Sheep Retrovirus envelope protein-induced lung tumorigenesis and the susceptibility of the resulting tumours to viral oncolysis. Project #2: Using a derivative of thrombospondin-1 to normalize tumour vasculature for enhanced delivery of oncolytic viruses. Project #3: Development of a Newcastle disease virus vector expressing an immunomodulatory antibody.
Present Position: Research associate in industry

**Doctorate Equivalent [n=1]**

2018/1 - 2022/4
Academic Advisor

Karen Carlton (In Progress) , University of Guelph
Student Degree Start Date: 2018/1
Student Degree Expected Date: 2022/4
Thesis/Project Title: Crimean-Congo Hemorrhagic Fever DNA Vaccine trial: Pilot Safety and Toxicity Study in Cattle and Goats
Present Position: DVSc student in the Arroyo and Lillie labs, University of Guelph

**Post-doctorate [n=6]**

2020/5 - 2021/4
Principal Supervisor

Robert Mould (Completed) , University of Guelph
Student Degree Start Date: 2020/5
Student Degree Received Date: 2021/4
Thesis/Project Title: Development of Vaccines for COVID-19
Present Position: Still part of my research team

2020/3 - 2020/7
Co-Supervisor

Jacob van Vloten (Completed) , University of Guelph
Student Degree Start Date: 2020/3
Student Degree Received Date: 2020/7
Thesis/Project Title: Development of Vaccines for COVID-19
Present Position: Postdoctoral fellow in the lab of Dr. Richard Vile, Rochester, MN, USA, Mayo Clinic, Rochester, Minnesota

2018/9 - 2019/8
Principal Supervisor

Megan Strachan-Whaley (Completed) , University of Guelph
Student Degree Start Date: 2018/9
Student Degree Received Date: 2019/8
Thesis/Project Title: Combining Oncolytic Viruses and Epigenetic Modifiers to Treat Acute Leukemias
Present Position: Enrolled in medical school (Dalhousie University)

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| 2015/5 - 2017/12<br>Co-Supervisor | Dr. Li Deng (Completed) , University of Guelph<br>Student Degree Start Date: 2015/4<br>Student Degree Received Date: 2017/12<br>Thesis/Project Title: Engineering Virus-Vectored Cancer Vaccines for Clinical Canine Cancer Trials<br>Project Description: Development of novel virus vectors for use in oncolytic and immunotherapies.<br>Present Position: Postdoctoral fellow (Wan lab, McMaster University) |
| 2013/9 - 2014/4<br>Principal Supervisor | Dr. Scott Walsh (Completed) , University of Guelph<br>Student Degree Start Date: 2013/9<br>Student Degree Received Date: 2014/8<br>Thesis/Project Title: Type I Interferon Receptor Signalling as a Master Switch for the Negative Regulation of Cytokine Networks<br>Project Description: Type I interferon receptor signalling as a master switch for the negative regulation of cytokine networks.<br>Present Position: Postdoctoral fellow in the laboratory of Dr. Yonghong Wan, McMaster University, Hamilton, ON, Canada |
| 2013/2 - 2013/8<br>Principal Supervisor | Dr. Jondavid de Jong (Completed) , University of Guelph<br>Student Degree Start Date: 2013/2<br>Student Degree Received Date: 2013/8<br>Thesis/Project Title: Construction of Human Adenovirus Serotype 48 and Maraba Virus Vectors<br>Project Description: Construction of recombinant Maraba virus and human adenovirus serotype 48 vectors for use in cancer immune- and oncolytic viro-therapy.<br>Present Position: Research Associate, Mirexus (Guelph, Ontario; biotechnology company) |

**Diploma [n=4]**

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| 2015/10 - 2016/3<br>Principal Supervisor | Katrina Geronimo (Completed) , St. Joan of Arc Catholic Secondary School, Mississauga, Ontario<br>Student Degree Start Date: 2012/9<br>Student Degree Received Date: 2016/6<br>Thesis/Project Title: Hypoxia Variably Affects Oncolytic Virus Efficacy While Potentiating the Growth of Human Cervical Cancer Cells<br>Project Description: September 2015 - May 2016: Participated in the Sanofi BioGENEius Challenge Canada. This is a national research competition for secondary school students (http://biogenius.ca/). Over a 6-month period she averaged 2-3 bus trips to the University of Guelph per week to work approximately half-days in my laboratory. Her project title was "Hypoxia variably affects oncolytic virus efficacy while potentiating the growth of human cervical cancer cells".<br>Present Position: BSc program, University of Guelph, University of Guelph |

2015/10 - 2016/3
Principal Supervisor

Arthane Kodeeswaran (Completed) , St. Joan of Arc Catholic Secondary School, Mississauga, Ontario
Student Degree Start Date: 2012/9
Student Degree Received Date: 2016/6
Thesis/Project Title: The Effect of Temperature on the Efficacy of Oncolytic Viruses in Human Cervical Cancer Cells
Project Description: September 2015 - May 2016: Participated in the Sanofi BioGENEius Challenge Canada. This is a national research competition for secondary school students (http://biogenius.ca/). Over a 6-month period she averaged 2-3 bus trips to the University of Guelph per week to work approximately half-days in my laboratory. Her project title was "The effect of temperature on the efficacy of oncolytic viruses in human cervical cancer cells". Notably, Arthane was one of the award winners for the Greater Toronto Area regional competition.
Present Position: BSc program, University of Guelph, University of Guelph

2013/12 - 2014/4
Principal Supervisor

Micaella Talan (Completed) , St. Joan of Arc Catholic Secondary School, Mississauga, Ontario
Student Degree Start Date: 2010/9
Student Degree Received Date: 2014/6
Thesis/Project Title: High School Research Project: The Effects of Quercetin and Kaempferol on the Cytotoxicity of Carboplatin and Entinostat on Cancer Cell Lines
Project Description: I am serving as a mentor for this secondary school student as she competes in the Sanofi BioGENEius challenge (see: http://sanofibiogeneiuschallenge.ca/). Project title: Using plant flavonoids quercetin and kaempferol in combination with the chemotherapeutic agent, carboplatin, to treat cancer cell lines.
Present Position: BSc program, McMaster University

2013/12 - 2014/4
Principal Supervisor

Brittney Tin (Completed) , St. Joan of Arc Catholic Secondary School, Mississauga, Ontario
Student Degree Start Date: 2010/9
Student Degree Received Date: 2014/6
Thesis/Project Title: High School Research Project: The Effects of Quercetin and Kaempferol on the Cytotoxicity of Carboplatin and Entinostat on Cancer Cell Lines
Project Description: I am serving as a mentor for this secondary school student as she competes in the Sanofi BioGENEius challenge (see: http://sanofibiogeneiuschallenge.ca/). Project title: Using plant flavonoids quercetin and kaempferol in combination with the chemotherapeutic agent, carboplatin, to treat cancer cell lines.
Present Position: BSc program, McMaster University

**Research Associate [n=3]**

2022/11 - 2024/4
Principal Supervisor

Yeganeh Mehrani (Completed) , University of Guelph
Degree Name: PhD
Thesis/Project Title: Visiting scientist.
Present Position: Doctoral student under my advisorship

2021/10 - 2022/4
Principal Supervisor

David Speicher (In Progress) , University of Guelph
Student Degree Start Date: 2021/10
Thesis/Project Title: Virus Vectors for the Prevention of Infectious Diseases and Treatment of Cancers

2016/5 - 2023/4
Principal Supervisor

Dr. Khalil Karimi (In Progress) , University of Guelph
Student Degree Start Date: 2016/5
Thesis/Project Title: Role of Type I Interferon Signalling on the Responses of Innate Lymphoid Cell Subsets to Viral Infection
Project Description: Assists with co-management of my research program, with an emphasis on studying the role of innate lymphoid cell subsets in response to viral infection.
Present Position: Research Associate/Associated Faculty Member in my laboratory, University of Guelph

**Technician [n=1]**

2019/12 - 2024/12
Co-Supervisor

David Marom (In Progress) , University of Guelph
Student Degree Start Date: 2019/9
Thesis/Project Title: General research support.
Present Position: A part-time member of my research team

## Staff Supervision

## Event Administration

2019/9 - 2020/1 — Local Organizing Committee Member, Canadian Society for Virology 2020 Annual Scientific Meeting (Note: this meeting was cancelled due to COVID-19), Conference, 2020/6 - 2020/6

## Editorial Activities

2020/7 - 2025/12 — Reviewer, Viral Immunology, Journal

2019/11 - 2025/12 — Reviewer, Clinical Cancer Research, Journal

2018/6 - 2025/12 — Reviewer, Canadian Journal of Veterinary Medicine, Journal

2018/5 - 2025/12 — Reviewer, Reviews in Medical Virology, Journal

2017/9 - 2025/12 — Reviewer, Science Translational Medicine, Journal

2017/5 - 2025/12 — Reviewer, Veterinary Immunology and Immunopathology, Journal

2015/5 - 2025/12 — Reviewer, Canadian Journal of Veterinary Research, Journal

2015/5 - 2025/12 — Reviewer, Viruses, Journal

2014/5 - 2025/12 — Reviewer, Journal of Visualized Experimentation, Journal

2013/12 - 2025/12 — Reviewer, PLOS ONE, Journal

2020/9 - 2025/8 — Guest Editor, Viruses, Journal

2018/5 - 2018/5 — Reviewer, Reviews in Medical Virology (reviewed the second of a linked pair of manuscripts), Journal

2017/12 - 2018/1 — Reviewer, PLOS ONE (reviewed a manuscript), Journal

2016/11 - 2016/12 — Reviewer, Canadian Journal of Veterinary Research (reviewed a manuscript), Journal

2015/10 - 2015/10 — Reviewer, Viruses (reviewed a manuscript), Journal

2015/5 - 2015/5 — Reviewer, Viruses (reviewed a manuscript), Journal

2014/1 - 2014/2 — Reviewer, PLOS ONE (reviewed a manuscript), Journal

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| 2013/10 - 2013/10 | Reviewer, Canadian Journal of Veterinary Research (reviewed a manuscript), Journal |
| 2013/9 - 2013/10 | Reviewer, PLOS ONE (reviewed a manuscript), Journal |
| 2013/7 - 2013/8 | Reviewer, Molecular Therapy (reviewed a manuscript), Journal |
| 2013/4 - 2013/4 | Reviewer, PLOS ONE (reviewed a manuscript), Journal |
| 2013/1 - 2013/3 | Reviewer, Journal of Vaccines and Immunization (reviewed a manuscript), Journal |
| 2012/8 - 2012/8 | Reviewer, Canadian Veterinary Journal (reviewed a manuscript), Journal |
| 2011/10 - 2011/11 | Reviewer, Clinical Medicine Insights Oncology (reviewed a manuscript), Journal |

## Mentoring Activities

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| 2021/4 | PhD qualifying examination committee member, University of Guelph<br>Number of Mentorees: 1<br>Mentorees: Jason Knapp<br>April 30, 2021; Jason Knapp's PhD qualifying examination |
| 2021/4 | Chair of MSc final examination committee, University of Guelph<br>Number of Mentorees: 1<br>Mentorees: Christine Yanta<br>April 27, 2021; Christine Yanta's MSc thesis defence. |
| 2020/12 | Chair of PhD final examination committee, University of Guelph<br>Number of Mentorees: 1<br>December 21, 2020; Ryan Snyder's PhD thesis defence |
| 2020/7 | Chair of PhD Qualifying Examination Committee, University of Guelph<br>Number of Mentorees: 1<br>July 28, 2020; Melanie Iverson's PhD qualifying examination |
| 2020/6 | PhD qualifying examination committee member, University of Guelph<br>Number of Mentorees: 1<br>June 12, 2020; Ran Xu's PhD qualifying examination |
| 2020/5 | PhD final examination committee member, University of Guelph<br>Number of Mentorees: 1<br>May 27, 2020; Robert Mould's PhD thesis defence |
| 2020/5 | MSc final examination committee member, University of Guelph<br>Number of Mentorees: 1<br>May 15, 2020; Elana Raaphorst's MSc thesis defence |
| 2020/4 | PhD qualifying examination committee member, University of Guelph<br>Number of Mentorees: 1<br>April 16, 2020; Heng Kang's PhD qualifying examination |
| 2020/4 | PhD qualifying examination committee member, University of Guelph<br>Number of Mentorees: 1<br>April 20, 2020; Sugandha Raj's PhD qualifying examination |
| 2020/1 | PhD final examination committee member, University of Guelph<br>Number of Mentorees: 1<br>January 3, 2020; Maedeh Darzianiazizi's PhD thesis defence |
| 2019/12 | Chair of PhD Qualifying Examination Committee, University of Guelph<br>Number of Mentorees: 1<br>December 6, 2019; Ayumi Matsuyama's PhD qualifying examination |

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| 2019/5 | PhD qualifying examination committee member, University of Guelph<br>Number of Mentorees: 1<br>May 3, 2019; Seyed Hossein's PhD qualifying examination |
| 2019/4 | Chair of MSc final examination committee, University of Guelph<br>Number of Mentorees: 1<br>April 15, 2019; Megan Neely's MSc thesis defence |
| 2019/4 | MSc final examination committee member, University of Guelph<br>Number of Mentorees: 1<br>April 26, 2019; Kristen Lamers's MSc thesis defence |
| 2019/4 | PhD qualifying examination committee member, University of Guelph<br>Number of Mentorees: 1<br>April 18, 2019; Gary Lee's PhD qualifying examination |
| 2019/2 | DMin final examination committee member, Tyndale University<br>Number of Mentorees: 1<br>February 3, 2019; Jeffrey Roy's DMin thesis defence |
| 2019/1 | PhD qualifying examination committee member, University of Guelph<br>Number of Mentorees: 1<br>January 29, 2019; Karen Carlton's PhD qualifying examination |
| 2018/12 | PhD final examination committee member, University of Western Ontario<br>Number of Mentorees: 1<br>December 6, 2018; Corby Fink's PhD thesis defence |
| 2018/12 | PhD qualifying examination committee member, University of Guelph<br>Number of Mentorees: 1<br>December 17, 2018; Thomas McAusland's PhD qualifying examination |
| 2018/11 | PhD qualifying examination committee member, University of Guelph<br>Number of Mentorees: 1<br>November 26, 2018; Ashley Stegelmeier's PhD qualifying examination |
| 2018/9 | PhD qualifying examination committee member, University of Guelph<br>Number of Mentorees: 1<br>September 4, 2018; Maedeh Darzianiazizi's PhD qualifying examination |
| 2018/6 | PhD qualifying examination committee member, University of Guelph<br>Number of Mentorees: 1<br>June 22, 2018; Laura van Lieshout's PhD qualifying examination |
| 2018/4 | PhD final examination committee member, University of Guelph<br>Number of Mentorees: 1<br>April 27, 2018; Jegarubee Bavananthasivam's PhD thesis defence |
| 2018/1 | PhD final examination committee member, University of Guelph<br>Number of Mentorees: 1<br>January 15, 2018; Lisa Santry's PhD thesis defence |
| 2018/1 | PhD qualifying examination committee member, University of Guelph<br>Number of Mentorees: 1<br>January 19, 2018; Nadiyah Alqazlan's PhD qualifying examination |
| 2018/1 | PhD final examination committee member, University of Guelph<br>Number of Mentorees: 1<br>January 9, 2018; Megan Strachan-Whaley's PhD thesis defence |

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| 2017/12 | PhD qualifying examination committee member, University of Guelph<br>Number of Mentorees: 1<br>December 1, 2017; Benoit Cuq's PhD Qualifying Examination |
| 2017/9 | PhD qualifying examination committee member, University of Guelph<br>Number of Mentorees: 1<br>September 25, 2017: Carina Cooper's PhD qualifying examination |
| 2017/8 | MSc final examination committee member, University of Guelph<br>Number of Mentorees: 1<br>August 21, 2017; Amanda AuYeung's MSc thesis defence |
| 2017/3 | PhD qualifying examination committee member, University of Guelph<br>Number of Mentorees: 1<br>March 27, 2017: Jacob van Vloten's PhD qualifying examination |
| 2017/1 | PhD final examination committee member, University of Guelph<br>Number of Mentorees: 1<br>January 25, 2017; Neda Barjesteh's PhD thesis defence |
| 2017/1 | MSc final examination committee member, University of Toronto<br>Number of Mentorees: 1<br>January 16, 2017; Tiffany Ho's MSc thesis defence |
| 2016/9 | PhD qualifying examination committee member, University of Guelph<br>Number of Mentorees: 1<br>December 19, 2016: Peyman Asadian's PhD qualifying examination |
| 2016/8 | PhD qualifying examination committee member, University of Guelph<br>Number of Mentorees: 1<br>August 24, 2016: Kathy Matuszewska's PhD qualifying examination |
| 2016/6 | PhD qualifying examination committee member, University of Guelph<br>Number of Mentorees: 1<br>June 14, 2016: Megan Strachan-whaley's PhD qualifying examination |
| 2016/6 | PhD qualifying examination committee member, University of Guelph<br>Number of Mentorees: 1<br>June 6, 2016: Seyedmehdi Emam's PhD qualifying examination |
| 2016/5 | PhD final examination committee member, University of Guelph<br>Number of Mentorees: 1<br>May 3, 2016: Served on the examination committee for Shirene Singh's PhD defence |
| 2016/4 | PhD qualifying examination committee member, University of Guelph<br>Number of Mentorees: 1<br>April 27, 2016: Alexander Bekele-Yitbarek's PhD qualifying examination |
| 2015/9 | MSc examination committee member, University of Guelph<br>Number of Mentorees: 1<br>September 2, 2015: Alexandra Rasiuk's MSc thesis defense |
| 2015/8 | Chair of MSc examination committee, University of Guelph<br>Number of Mentorees: 1<br>August 18, 2015: Chaired James Ackford's MSc thesis defense |
| 2015/4 | PhD qualifying examination committee member, University of Guelph<br>Number of Mentorees: 1<br>April 27, 2015: Jegarubee Bavananthasivam's PhD qualifying examination |

2015/2 PhD qualifying examination committee member, University of Guelph
Number of Mentorees: 1
February 18, 2015: Marianne Wilcox's PhD qualifying examination

2014/8 MSc examination committee member, University of Guelph
Number of Mentorees: 1
August 13, 2014: Served on the examination committee for Zafir Syed's MSc thesis defence

2014/8 MSc examination committee member, University of Guelph
Number of Mentorees: 1
August 12, 2014: Served on the examination committee for Christian Ternamian's MSc thesis defence

2014/6 Chair of MSc examination committee, University of Guelph
Number of Mentorees: 1
June 10, 2014: Chaired Kelly Fleming's MSc thesis defence

2014/1 PhD final examination committee member, University of Guelph
Number of Mentorees: 1
January 3, 2014: Scott Walsh's PhD defense

2013/12 PhD qualifying examination committee member, University of Guelph
Number of Mentorees: 1
December 16, 2013: Lisa Santry's PhD qualifying examination

2013/12 PhD qualifying examination committee member, University of Guelph
Number of Mentorees: 1
December 11, 2013: Shirene Singh's PhD qualifying examination

2013/11 Chair of MSc examination committee, University of Guelph
Number of Mentorees: 1
November 19, 2013: Chaired Shaun Kernaghan's MSc thesis defense

2013/6 MSc examination committee member, University of Guelph
Number of Mentorees: 1
June 14, 2013: Ian Villanueva's MSc thesis defense

2012/9 MSc examination committee member, University of Guelph
Number of Mentorees: 1
September 5, 2012: Sonja Zours' MSc thesis defense

2012/7 Chair of MSc examination committee, University of Guelph
Number of Mentorees: 1
July 20, 2012: Chaired Inas Elawadli's MSc thesis defense

2012/5 PhD qualification examination committee member, University of Guelph
Number of Mentorees: 1
May 7, 2012: Li Deng's PhD qualification examination

2012/4 Chair of MSc examination committee, University of Guelph
Number of Mentorees: 1
April 19, 2012: Chaired Iman Mehdizadeh Gohari's MSc thesis defense

## Expert Witness Activities

2022/12 Expert Witness, COLLEGE OF NURSES OF ONTARIO vs SARAH A. CHOUJOUNIAN-ABULU REGISTRATION NO. JD83453, Canada
Disciplinary tribunal.

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| 2022/11 | Expert Witness, CIV-2022-404-2237 The High Court of New Zealand TE WHATU ORA, HEALTH NEW ZEALAND, TE TOKA TUMAI vs COLE SAVAGE-REEVES and SAMANTHA SAVAGE, New Zealand<br>An application pursuant to section 31 of the Care of Children Act 2004 to place a child under the guardianship of the Court |
| 2022/10 | Expert Witness, THE COURT OF APPEAL FOR SASKATCHEWAN ON APPEAL FROM THE COURT OF QUEEN'S BENCH (FAMILY LAW DIVISION) JUDICIAL CENTRE OF SASKATOON O.M.S. vs E.J.S., Canada |
| 2022/6 | Expert Witness, CIV-2022-485- HIGH COURT OF NEW ZEALAND NEW HEALTH NEW ZEALAND INCORPORATED vs MINISTER FOR COVID-19 RESPONSE and ATTORNEY-GENERAL, New Zealand<br>An application for judicial review of an order made under the COVID-19 Public Health Response Act 2020 |
| 2022/1 | Expert Witness, ONTARIO SUPERIOR COURT OF JUSTICE BETWEEN SARAH HARJEE, EVAN KRAAYENBRINK, HIBAH AOUN, SARAH LAMB, SAM SABOURIN, JACKIE RAMNAUTH, MARK MCDONOUGH and LINDA MCDONOUGH -and- HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF ONTARIO, Canada, Toronto |
| 2022/1 | Expert Witness, A family court case. A former wife who does not want her 12-year-old son to receive a COVID-19 jab vs The former husband who does want his son to receive a COVID-19 jab, Canada |
| 2022/2 - 2022/4 | Expert Witness, COURT OF QUEEN'S BENCH OF ALBERTA ANNETTE LEWIS vs ALBERTA HEALTH SERVICES; UNIVERSITY OF ALBERTA HOSPITAL, AND VARIOUS DOCTORS (granted anonymity), Canada, Wetaskiwin |
| 2022/2 - 2022/2 | Expert Witness, ONTARIO SUPERIOR COURT OF JUSTICE B E T W E E N: NATIONAL ORGANIZED WORKERS UNION Applicant/Moving Party - and - SINAI HEALTH NETWORK, Canada, Toronto |
| 2021/12 - 2022/2 | Expert Witness, IN THE HIGH COURT OF NEW ZEALAND WELLINGTON REGISTRY BETWEEN NZDSOS INC; NZTSOS INC AND THE MINISTER FOR COVID-19 RESPONSE; THE DIRECTOR-GENERAL OF HEALTH; ATTORNEY-GENERAL, New Zealand, Wellington |
| 2022/1 - 2022/1 | Expert Witness, IN THE HIGH COURT OF NEW ZEALAND BETWEEN DCB AND THE MINISTER OF HEALTH; THE GROUP MANAGER OF THE NEW ZEALAND MEDICAL DEVICES SAFETY AUTHORITY (MEDSAFE); THE COVID-19 RESPONSE MINISTER, New Zealand, Wellington |
| 2021/12 - 2022/1 | Expert Witness, DR. MIKLOS MATYA VS CHILDREN'S HOSPITAL OF EASTERN ONTARIO, Canada, Ottawa |
| 2021/4 - 2022/1 | Expert Witness, Hearing Tribunal of the Alberta College and Association of Chiropractors (ACAC) into the conduct of Dr. Curtis Wall, a regulated member of ACAC, Canada, Calgary |
| 2021/4 - 2021/6 | Expert Witness, ONTARIO SUPERIOR COURT OF JUSTICE BETWEEN: HER MAJESTY THE QUEEN IN RIGHT OF ONTARIO AND ADAMSON BARBECUE LIMITED AND WILLIAM ADAMSON SKELLY, Canada, Toronto |
| 2021/4 - 2021/4 | Expert Witness, COURT OF QUEEN'S BENCH OF ALBERTA GRACELIFE CHURCH OF EDMONTON, JAMES COATES, DONNA KLAY, ALLAN NEILL, and ACHNES SMITH vs THE PROVINCE OF ALBERTA AS REPRESENTED BY THE MINISTER OF HEALTH, THE CHIEF MEDICAL OFFICER OF HEALTH, and ALBERTA, Canada, Edmonton |

## Organizational Review Activities

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| 2020/8 | Reviewer, Canadian Institutes of Health Research<br>Served on the Cancer Biology and Therapeutics grant review panel |
| 2020/5 | Reviewer, Cancer Research Society<br>Served on grant review panel C2 - Tumour suppressor genes, oncogenes and DNA repair |
| 2019/10 | Reviewer, Canadian Foundation for Innovation<br>Served on an expert committee to review an application to the John R. Evans Leaders Fund |
| 2018/10 | Reviewer, Canadian Institutes of Health Research<br>Started a three-year term serving on the Virology and Viral Pathogenesis grant review panel |
| 2014/6 | Reviewer, Canadian Cancer Society Research Institute<br>Served on grant review panel I3 - Immunology Signalling and Stem Cells |
| 2020/6 - 2020/7 | Reviewer, Swiss National Science Foundation<br>Spark Grant |
| 2019/12 - 2020/1 | Reviewer, Natural Sciences and Engineering Research Council of Canada (NSERC)<br>Discovery Grant |
| 2019/12 - 2019/12 | Reviewer, New Foundations in Research Fund<br>Reviewed an Exploration Grant |
| 2019/9 - 2019/10 | Reviewer, Prostate Cancer UK<br>Reviewed a grant application. |
| 2018/8 - 2018/9 | Reviewer, Mitacs Accelerate<br>Reviewed one grant application. |
| 2017/12 - 2018/1 | Reviewer, Student Scinapse Competition<br>Reviewed 7 applications. |
| 2017/9 - 2017/10 | Reviewer, Breast Cancer Now_UK<br>Reviewed a grant application. |
| 2017/3 - 2017/4 | Reviewer, Graduate Women in Science Fellowship<br>Reviewed one application. |
| 2016/12 - 2017/1 | Reviewer, Student Scinapse Competition<br>Reviewed 10 applications. |
| 2016/11 - 2016/12 | Reviewer, Mitacs Accelerate<br>Reviewed one grant application. |
| 2015/11 - 2015/11 | Reviewer, Natural Sciences and Engineering Research Council of Canada (NSERC)<br>Collaborative Health Research Program |
| 2014/12 - 2015/1 | Reviewer, Natural Sciences and Engineering Research Council of Canada (NSERC)<br>Served as an external reviewer for a NSERC Discovery Grant application |
| 2014/4 - 2014/5 | Reviewer, Croatian Science Foundation<br>Reviewed a grant application. |

## Community and Volunteer Activities

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| 2015/1 | Member of the Animal Isolation Unit Advisory Committee, University of Guelph<br>To provide advice from the perspective of a researcher to Campus Animal Facilities in an effort to balance the needs of technicians, the administration and those conducting animal research at biosafety level 2. |
| 2014/12 | Volunteer Fundraiser, University of Guelph<br>Assisting fundraising efforts for the Global Vets program by auctioning an immunology review session (2014) and a faculty-student hockey game (2015). |
| 2014/5 | Volunteer Interviewer, University of Guelph<br>Conducting annual entrance interviews for the Doctor of Veterinary Medicine program. |
| 2014/2 | Member of the Dept. of Pathobiology Research Committee, University of Guelph<br>Deliberate on departmental research-related issues and provide recommendations to the department. Keep track of departmental equipment. Coordinate equipment grant applications. |
| 2013/2 | Member of the Dept. of Pathobiology Seminar Committee, University of Guelph<br>Organize and run the Dept. of Pathobiology's annual seminar series, which runs from September to April. Host visiting speakers. Also organize and run an annual 3-minute thesis competition for trainees. I chaired this committee Sept. 2015-Aug. 2016 |
| 2013/2 | Member of the Dept. of Pathobiology Awards Committee, University of Guelph<br>Review and rank all award applications submitted in the Department of Pathobiology. |
| 2013/1 | Scientific Reviewer of Animal Utilization Protocols, University of Guelph<br>Review the scientific content of applications for animal utilization protocols for the Animal Care Committee. |
| 2012/11 | Volunteer Judge, University of Guelph<br>Annual poster judging for the Graduate Student Research Symposium (showcases graduate student research projects). |
| 2012/8 | volunteer judge, University of Guelph<br>Annual poster judging for the Career Opportunites and Research Experience Program (formerly called "Summer Leadership and Research Program"; showcases summer student research projects). |
| 2012/2 | Co-Manager of the University of Guelph Core Flow Cytometry Facility, University of Guelph<br>Manage the core flow cytometry facility at the University of Guelph in conjunction with one other faculty member. |
| 2011/10 | Scientific Reviewer, Various scientific journals<br>Review manuscripts submitted to the following journals: Molecular Therapy PLOS ONE Journal of Vaccines and Immunization Canadian Veterinary Journal Clinical Medicine Insights Oncology Canadian Journal of Veterinary Research Journal of Visualized Experimentation Reviews in Medical Virology Viruses |
| 1997/1 | Member, Canadian Society for Immunology<br>A registered member of the Canadian Society for Immunology |
| 2016/3 - 2016/3 | volunteer judge, University of Guelph<br>Judged student-run exhibits that are open to the public at the Ontario Veterinary College. |
| 2014/4 - 2016/1 | Grant Review Panel Member, Prostate Cancer Canada<br>I served on Panel C "Experimental Therapeutics" |

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| 2015/2 - 2015/3 | Scientific Reviewer, Oxford University Press<br>Reviewed Chapter 12: Tumor Immunology and Immunotherapy from the textbook "Molecular Biology of Cancer, fourth edition" by Pecorino. |
| 2015/1 - 2015/2 | Scientific Reviewer, Natural Sciences and Engineering Research Council of Canada (NSERC)<br>Discovery Grant review |
| 2014/5 - 2014/6 | Scientific Reviewer, Croatian Science Foundation<br>Grant review |
| 2010/9 - 2014/5 | Assistant Coach, Stanley Stick Hockey Association, Guelph, Ontario<br>Serve as a volunteer for this not-for-profit hockey association. Assist with coaching a boys hockey team. Learn to skate program: 2010-11 Novice division: 2011-2014 |
| 2003/9 - 2012/4 | Organizer, Men's recreational hockey group, Guelph, Ontario<br>Managed a men's recreational hockey group. |

## Knowledge and Technology Translation

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| 2014/1 | Co-Investigator, Technology Transfer and Commercialization<br>Group/Organization/Business Serviced: University of Guelph<br>Target Stakeholder: General Public<br>Outcome / Deliverable: Submitted an invention disclosure form:Avianorthoreovirus (ARV) strain PB1: a potential oncolytic, vaccine and adjuvant<br>Activity Description: Invention disclosure to the University of Guelph Catalyst Centre: "Avian orthoreovirus (ARV) strain PB1: a potential oncolytic, vaccine and adjuvant" |
| 2011/3 | Co-investigator, Technology Transfer and Commercialization<br>Group/Organization/Business Serviced: McMaster University, Hamilton, Ontario<br>Target Stakeholder: General Public<br>Outcome / Deliverable: Patent<br>Evidence of Uptake/Impact: Used as part of the intellectual property to establish a new biotechnology company called "Turnstone Biologics"<br>References / Citations / Web Sites: http://www.turnstonebio.com/ http://www.google.com/patents/WO2012122629A1?cl=en<br>Activity Description: Bridle BW, Bell JC, Diallo JS, Lemay C, Lichty BD, Wan Y "Vaccination and HDAC inhibition" Provisional Patent 61/451,794 filed March 11, 2011, PCT Patent Application No. PCT/CA2012/000212 national phase filings in Europe, North America, China, and Japan underway |
| 2011/2 | Co-Investigator, Technology Transfer and Commercialization<br>Group/Organization/Business Serviced: McMaster University, Hamilton, Ontario<br>Target Stakeholder: General Public<br>Outcome / Deliverable: Patent<br>Evidence of Uptake/Impact: Used as part of the intellectual property to establish a new biotechnology company called "Turnstone Biologics"<br>References / Citations / Web Sites: http://www.turnstonebio.com/<br>Activity Description: Bridle BQ, Lichty BD, Wan Y "Vaccination method utilizing follicular B cells" Provisional patent 61/446,248 (filed February 24, 2011) |

2009/3 Co-Investigator, Technology Transfer and Commercialization
Group/Organization/Business Serviced: McMaster University, Hamilton, Ontario
Target Stakeholder: General Public
Outcome / Deliverable: Patent
Evidence of Uptake/Impact: Used as part of the intellectual property to establish a new biotechnology company called "Turnstone Biologics"
References / Citations / Web Sites: http://www.turnstonebio.com/ http://www.google.com/patents/WO2010105347A1?cl=en
Activity Description: Bridle BW, Bramson J, Lichty BD, Wan Y "Vaccination Methods" PCT Patent application No. PCT/CA2010/000379 (PCT filed March 16, 2010) national phase filings in Europe, North America, and China underway

2019/9 - 2030/7 Co-Founder, Involvement in/Creation of Start-up
Group/Organization/Business Serviced: IHN Pharma, Inc.
Target Stakeholder: Patients
Outcome / Deliverable: Novel biotherapies for the treatment of cancers.
Evidence of Uptake/Impact: This company is in the start-up phase.
Activity Description: Along with six collaborators, we are establishing a start-up biotechnology company called "INH Pharma, Inc." to leverage intellectual properties related to proprietary oncolytic viruses.

2024/7 - 2024/10 Scientific consultant, Consultation Service
Group/Organization/Business Serviced: Government of Alberta
Target Stakeholder: Government Personnel
Outcome / Deliverable: The team that I worked with ultimately generated a report for the premier of the province that included advice on what an appropriate future response to the declaration of a pandemic should look like.
Evidence of Uptake/Impact: The final report is still with the government. It has not been publicly released (as of November 8, 2024).
Activity Description: The government launched an investigation into the rationales for the various COVID-19 policies implemented by Alberta Health Services. I was invited to review summary documents for accuracy and scientific integrity.

## Committee Memberships

2023/1 Committee Member, Joint Health and Safety Committee, University of Guelph
Review and maintain safety policies for the Department of Pathobiology and Animal Health Laboratory

2023/1 Committee Member, Admissions Committee for the Doctor of Veterinary Medicine Program, University of Guelph
Responsible for admitting students into the program, including the establishment of eligibility criteria, short-listing candidates for interviews, approving questions for interviews, confirming lists for offers of admission, considering accommodation requests, etc.

2014/9 Ex-Officio, Scientific Reviewer for Animal Care Committee, University of Guelph
Provide expert scientific reviews of animal utilization protocols that have been submitted to the institutional animal care committee.

2014/12 - 2022/12 Co-chair, Ad hoc committee to manage the University of Guelph's flow cytometry facility., University of Guelph
Co-management of institutional core flow cytometry facility (two high-throughput analytical flow cytometers, plus one flow sorter). Other co-managers: Dorothee Bienzle and Brandon Plattner.

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| 2018/9 - 2020/12 | Committee Member, Virology and Viral Pathogenesis Grant Review Panel, Canadian Institutes of Health Research<br>Review and rank grant proposals. |
| 2017/12 - 2020/12 | Chair, Department of Pathobiology Awards Committee, University of Guelph<br>Review and rank applications for academic awards. |
| 2017/12 - 2020/12 | Chair, Department of Pathobiology Awards Committee, University of Guelph<br>Review and rank applications for academic awards. |
| 2017/12 - 2020/12 | Committee Member, Ontario Veterinary College Graduate Awards Committee, University of Guelph<br>Review and rank award applications from graduate students at the college level. |
| 2017/12 - 2020/12 | Committee Member, Scientific Review Committee for the Pet Trust Foundation, University of Guelph<br>Review and rank applications to the Pet Trust Foundation's bi-annual operating grant competitions. |
| 2017/12 - 2020/12 | Committee Member, Ontario Veterinary College Undergraduate Awards Committee, University of Guelph<br>Review and rank award applications from students in the Doctor of Veterinary Medicine and other undergraduate programs within the Ontario Veterinary College. |
| 2014/1 - 2020/12 | Committee Member, Department of Pathobiology Research Committee, University of Guelph<br>Identify, review and make recommendations related to departmental research issues. |
| 2020/7 - 2020/8 | Committee Member, Cancer Biology and Therapeutics Grant Review Panel, Canadian Institutes of Health Research<br>Review and rank grant applications. |
| 2020/6 - 2020/7 | Chair, PhD Qualifying Examination Committee, University of Guelph<br>Examinee: Melanie Iverson |
| 2020/5 - 2020/6 | Committee Member, PhD Qualifying Examination Committee, University of Guelph<br>Examinee: Ran Xu |
| 2020/4 - 2020/5 | Committee Member, PhD Thesis Examination Committee, University of Guelph<br>Examinee: Robert Mould |
| 2020/4 - 2020/5 | Committee Member, MSc Thesis Examination Committee, University of Guelph<br>Examinee: Elana Raaphorst |
| 2020/3 - 2020/5 | Committee Member, PhD Qualifying Examination Committee, University of Guelph<br>Examinee: Sugandha Raj |
| 2019/12 - 2020/1 | Committee Member, PhD Thesis Examination Committee, University of Guelph<br>Examinee: Maedeh Darzianiazizi |
| 2019/11 - 2019/12 | Chair, PhD Qualifying Examination Committee, University of Guelph<br>Examinee: Ayumi Matsuyama |
| 2019/8 - 2019/10 | Committee Member, Chair search committee, University of Guelph<br>To recruit and hire a new Chair for the Department of Pathobiology |
| 2019/6 - 2019/9 | Committee Member, Faculty Search Committee, University of Guelph<br>To hire a new virologist for a tenure-track faculty position in the Department of Pathobiology |
| 2019/7 - 2019/8 | Committee Member, Expert Review Committee, Canadian Foundation for Innovation<br>To review a grant application for funding from the John R. Evans Leaders Fund |

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| 2019/6 - 2019/7 | Committee Member, Technician Search Committee, University of Guelph<br>To recruit and hire a new technician for the Department of Pathobiology |
| 2019/3 - 2019/5 | Committee Member, PhD Qualifying Examination Committee, University of Guelph<br>Examinee: Seyed Hossein Karimi |
| 2019/3 - 2019/4 | Committee Member, Thesis Examination Committee, University of Guelph<br>Examinee: Kristen Lamers (MSc) |
| 2019/3 - 2019/4 | Chair, Thesis Examination Committee, University of Guelph<br>Examinee: Megan Neely (MSc) |
| 2019/3 - 2019/4 | Committee Member, MSc Thesis Examination Committee, University of Guelph<br>Examinee: Kristen Lamers |
| 2019/2 - 2019/4 | Chair, PhD Qualifying Examination Committee, University of Guelph<br>Examinee: Gary Lee |
| 2019/1 - 2019/2 | Committee Member, Thesis Examination, Tyndale College and Theological Seminary<br>Examinee: Jeffrey Roy (DMin) |
| 2018/11 - 2019/1 | Committee Member, PhD Qualifying Examination Committee, University of Guelph<br>Examinee: Karen Carlton |
| 2018/11 - 2018/12 | Committee Member, Thesis Examination Committee, University of Western Ontario<br>Examinee: Corby Fink (PhD) |
| 2018/10 - 2018/12 | Committee Member, PhD Qualifying Examination Committee, University of Guelph<br>Examinee: Thomas McAusland |
| 2018/9 - 2018/11 | Committee Member, PhD Qualifying Examination Committee, University of Guelph<br>Examinee: Ashley Ross |
| 2018/7 - 2018/9 | Committee Member, PhD Qualifying Examination Committee, University of Guelph<br>Examinee: Maedeh Darzianiazizi |
| 2018/4 - 2018/6 | Committee Member, PhD Qualifying Examination Committee, University of Guelph<br>Examinee: Laura van Lieshout |
| 2018/3 - 2018/4 | Committee Member, Thesis Examination Committee, University of Guelph<br>Examinee: Jegarubee Bavananthasivam (PhD) |
| 2017/12 - 2018/1 | Committee Member, Thesis Examination Committee, University of Guelph<br>Examinee: Megan Strachan-Whaley (PhD) |
| 2017/12 - 2018/1 | Committee Member, Thesis Examination Committee, University of Guelph<br>Examinee: Lisa Santry (PhD) |
| 2017/11 - 2018/1 | Committee Member, PhD Qualifying Examination Committee, University of Guelph<br>Examinee: Nadiyah Alqazlan |
| 2017/10 - 2017/12 | Committee Member, PhD Qualifying Examination Committee, University of Guelph<br>Examinee: Benoit Cuq |
| 2012/5 - 2017/11 | Committee Member, Department of Pathobiology Awards Committee, University of Guelph<br>Review and rank applications for academic awards. |
| 2017/7 - 2017/9 | Committee Member, PhD Qualifying Examination Committee, University of Guelph<br>Examinee: Carina Cooper |
| 2017/6 - 2017/8 | Committee Member, Thesis Examination Committee, University of Guelph<br>Examinee: Amanda AuYeung (MSc) |

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| 2013/6 - 2017/8 | Committee Member, Department of Pathobiology Seminar Series Committee, University of Guelph<br>Help schedule a weekly seminar series that spans the Fall and Winter semesters. Host external speakers. |
| 2016/4 - 2017/4 | Committee Member, PhD Qualifying Examination Committee, University of Guelph<br>Examinee: Megan Stachan-Whaley (written and oral portions of exam were separated due to a maternity leave). |
| 2017/1 - 2017/3 | Committee Member, PhD Qualifying Examination Committee, University of Guelph<br>Examinee: Jacob van Vloten |
| 2016/12 - 2017/1 | Committee Member, Thesis Examination Committee, University of Guelph<br>Examinee: Neda Barjesteh (PhD) |
| 2016/12 - 2017/1 | Committee Member, Thesis Examination Committee, University of Toronto<br>Examinee: Tiffany Ho (MSc) |
| 2016/10 - 2016/12 | Committee Member, PhD Qualifying Examination Committee, University of Guelph<br>Examinee: Peyman Asadian |
| 2014/1 - 2016/12 | Committee Member, Prostate Cancer Canada - Panel C - Experimental Therapeutics Grant Review Panel, Prostate Cancer Canada<br>Review grants submitted to the "Experimental Therapeutics" panel and make recommendations for funding. |
| 2016/6 - 2016/8 | Committee Member, PhD Qualifying Examination Committee, University of Guelph<br>Examinee: Kathy Matuszewska |
| 2016/4 - 2016/6 | Committee Member, PhD Qualifying Examination Committee, University of Guelph<br>Examinee: Seyedmehdi Emam |
| 2015/8 - 2016/6 | Chair, Department of Pathobiology Seminar Series Committee, University of Guelph<br>Help schedule a weekly seminar series that spans the Fall and Winter semesters. Host external speakers. |
| 2016/4 - 2016/5 | Committee Member, Thesis Examination Committee, University of Guelph<br>Examinee: Shirene Singh (PhD) |
| 2016/2 - 2016/4 | Committee Member, PhD Qualifying Examination Committee, University of Guelph<br>Examinee: Alexander Bekele-Yitbarek |
| 2015/8 - 2015/9 | Committee Member, Thesis Examination Committee, University of Guelph<br>Examinee: Alexandra Rasiuk (MSc) |
| 2015/6 - 2015/8 | Chair, Thesis Examination Committee, University of Guelph<br>Examinee: James Ackford (MSc) |
| 2015/5 - 2015/5 | Committee Member, Doctor of Veterinary Medicine Admissions Interview Committee, University of Guelph<br>Interviewed and ranked applicants to the Doctor of Veterinary Medicine program. |
| 2015/2 - 2015/4 | Committee Member, PhD Qualifying Examination Committee, University of Guelph<br>Examinee: Jegarubee Bavananthasivam |
| 2014/12 - 2015/2 | Committee Member, PhD Qualifying Examination Committee, University of Guelph<br>Examinee: Marianne Wilcox |
| 2014/7 - 2014/8 | Committee Member, Thesis Examination Committee, University of Guelph<br>Examinee: Christian Ternamian (MSc) |
| 2014/7 - 2014/8 | Committee Member, Thesis Examination Committee, University of Guelph<br>Examinee: Zafir Syed (MSc) |

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| 2014/5 - 2014/6 | Chair, Thesis Examination Committee, University of Guelph<br>Examinee: Kelly Fleming (MSc) |
| 2013/12 - 2014/1 | Committee Member, Thesis Examination Committee, University of Guelph<br>Examinee: Scott Walsh (PhD) |
| 2013/12 - 2013/12 | Committee Member, PhD Qualifying Examination Committee, University of Guelph<br>Examinee: Shirene Singh |
| 2013/10 - 2013/12 | Committee Member, PhD Qualifying Examination Committee, University of Guelph<br>Examinee: Lisa Santry |
| 2013/10 - 2013/11 | Chair, Thesis Examination Committee, University of Guelph<br>Examinee: Shaun Kernaghan (MSc) |
| 2013/5 - 2013/6 | Committee Member, Thesis Examination Committee, University of Guelph<br>Examinee: Ian Villanueva (MSc) |
| 2012/8 - 2012/9 | Committee Member, Thesis Examination Committee, University of Guelph<br>Examinee: Sonja Zours (MSc) |
| 2012/6 - 2012/7 | Chair, Thesis Examination Committee, University of Guelph<br>Examinee: Inas Elawadli (MSc) |
| 2012/3 - 2012/5 | Committee Member, PhD Qualifying Examination Committee, University of Guelph<br>Examinee: Li Deng |
| 2012/3 - 2012/4 | Chair, Thesis Examination Committee, University of Guelph<br>Examinee: Iman Mehdizadeh Gohari (MSc) |

## Other Memberships

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| 2020/6 | Member, One Health Institute University of Guelph<br>Within One Health, University of Guelph researchers work across disciplines and sectors to interrogate the biological and social factors that impinge on the health of organisms, from the level of molecules to that of ecosystems, with unique strengths in comparative medicine. This research also explores how these factors are shaped by environmental parameters, such as climate change, ultimately informing public health and environmental health practice and policy. |
| 2017/6 | Member Scientist, Dog Osteosarcoma Group: Biomarkers Of Neoplasia (DOG BONe)<br>This groups consists of eight faculty members from the Ontario Veterinary College, University of Guelph, who share a vision for collaborative research to advance our understanding of canine osteosarcomas, how to predict clinical outcomes and to develop novel therapies. The group includes two veterinary oncologists, two veterinary surgical oncologists, a statitician, a veterinary pathologist, an immunologist and a cancer biologist. |
| 2016/9 | Member, European Academy for Tumor Immunology<br>I was invited to be a member of this international organization that is based in Europe. The purpose is to promote international collaborations and unify research in the area of immunotherapies for cancers. |
| 2015/4 | Member Scientist, Canadian Oncolytic Virus Consortium (COVCo)<br>COVCo is a pan-Canadian network of fifteen clinical and basic scientists dedicated to developing and advancing the oncolytic virus platform as a targeted and revolutionary approach to cancer therapeutics. Our common vision is that an iterative cycle of discovery and clinical testing is the fastest and most effective way to develop new biological therapeutics. We are funded by the Terry Fox Research Institute (Program Project Grant). |

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| 2014/12 | Member scientist, National Centre of Excellence in Biotherapeutics for Cancer Treatment (BioCanRx)<br>Total funding: $60 million ($25 million from the federal government + $35 million from partners) over 5 years. Total # of researchers across Canada: 42 (representing 17academic institutions). Also supported by: 8 private sector and 19 community partners. Scientific Director: Dr. John Bell, Ottawa Hospital Research Institute. I am one of the 42 founding members. |
| 2012/1 | Member, Institute for Comparative Cancer Investigation, University of Guelph<br>The Institute for Comparative Cancer Investigation at the University of Guelph facilitates translational oncology research in companion animals at the OVC Mona Campbell Centre for Animal Cancer by managing clinical trials and the Companion Animal Tumour Sample Bank. Our goals: to advance the understanding of cancer and improve treatment options to benefit both companion animal and human cancer patients. |
| 2001/3 | Member, Canadian Society for Immunology<br>The mandate of the Canadian Society for Immunology is to foster and support Immunology research and education throughout Canada |

## Most Significant Contributions

**Using epigenetic modification to enhance anoncolytic booster vaccine while abrogating autoimmune pathology**

I discovered that an immunosuppressive histone deacetylase inhibitor (entinostat) could enhance oncolytic booster vaccines (Bridle BW et al. Molecular Therapy 2013 Apr;21(4):887-94). Regulatory T cells could be transiently suppressed with simultaneous up-regulation of major histocompatibility complex expression on tumour cells (making them more visible targets) and concomitant prolongation of viral oncolysis, resulting in more efficacious tumour-specific T cell responses. Importantly, the vitiligo normally associated with melanoma immunotherapy was abrogated. This was a novel strategy for separating anti-tumour autoimmunity from autoimmune pathology and was the first time anyone demonstrated the ability to dramatically improve anti-melanoma efficacy while simultaneously suppressing vitiligo; something the literature suggested could not be done. This garnered a patent and receipt of substantial research funding. This research is now being applied to leukemias.

**Knowledge translation during the COVID-19 pandemic:Providing fact-based answers to the lay public, policy makers and courts of law**

Beginning in May 2019 I began disseminating information about immunological concepts relevant to COVID-19. I have authored nine lay articles, served on two discussion panels, was a keynote speaker at five events (two were international conferences), I gave seven television interviews (three were for national news, including W5 and Global National News), I was interviewed for 35 newspaper/magazine articles (including National Geographic, The Globe and Mail, Toronto Star and Toronto Sun), I conducted 55 radio interviews spanning almost every province and one territory and included international interviews in New Zealand and Scotland, and I was asked to serve as an expert witness for two lawsuits related to COVID-19 (one in Calgary and one in the Ontario Superior Court of Justice).

**From bench to bedside in five years: Synergizing oncolytic virotherapy with cancer immunotherapy**
In 2010 I led a team that described a unique approach to synergize cancer immunotherapy with oncolytic virotherapy (Bridle BW, et al. Molecular Therapy 2010 Aug; 18(8):1430-9). This was accomplished using an oncolytic virus to boost pre-existing tumour-specific immune responses. The prevailing wisdom in the field was that immunotherapy and oncolytic virotherapy could not be effectively combined. However, I was able to prove this wrong and an optimized version of this therapy entered a phase I/II human clinical trial in January 2015, followed by three more clinical trials. This rapid progression from bench to bedside was facilitated by extensive collaborations, including the Terry Fox Foundation-funded Canadian Oncolytic Virus Consortium, of which I am a member. This also resulted in a patent application (I have 40% inventorship) that formed foundational intellectual property used to establish a biotechnology company (Turnstone Biologics).

## Presentations

1. (2024). The Immune System, Cancers, and Vitamin D. Empowering Health With Vitamin D Symposium: Are You Getting Enough?, Canada
   Main Audience: Researcher
   Invited?: Yes
   Description / Contribution Value: This was Canada's first international symposium focused on vitamin D in 14 years. I gave an online presentation on November 1, 2024
2. (2024). The Immune System, Cancers, and Vitamin D. Empowering Health With Vitamin D Symposium: Are You Getting Enough?, Chatham, Canada
   Main Audience: General Public
   Invited?: Yes
   Description / Contribution Value: This was Canada's first international symposium focused on vitamin D in 14 years. I gave an in-person presentation on November 2, 2024.
3. (2023). Censorship Under the Guise of Public Health. International Crisis Summit 4, Bucharest, Romania
   Main Audience: Decision Maker
   Invited?: Yes, Keynote?: Yes
   Description / Contribution Value: I testified in the Romanian Parliament on November 18, 2023. The following day I presented and participated in a press conference. The focus was on the censorship of scientific debate during the declared COVID-19 pandemic.
4. (2023). I gave a presentation entitled "The COVID-19 Vaccine Trials" in the European Parliament on May 3, 2023. International COVID Summit 3 May 2-4, 2023, Brussels, Belgium
   Main Audience: Decision Maker
   Invited?: Yes
   Description / Contribution Value: I presented in a one-day conference held for medical professionals only on May 2, 2023. I then presented in the European Parliament on May 3, 2023. I also participated in press conferences on May 4, 2023.
5. Sylvia P. Thomas, Jakob M. Domm, Jacob G. E. Yates, Yanlong Pei, YEGAN MEHRANI, KHALIL KARIMI, Byram Bridle, Wei Zhang, Bernard Thebaud, and Sarah K. Wootton (Dr. Bridle's trainees capitalized). (2022). Improving Efficiency of an AAV-CRISPR Platform for Lung Gene Editing. 25th Annual Meeting of the American Society of Gene & Cell Therapy Walter E. Washington Convention Center, May 16-19, 2022, Washington, DC, United States of America
   Main Audience: Researcher
   Invited?: No, Keynote?: No
   Description / Contribution Value: Abstract #2022-A-2140-ASGCT presented as a poster.

6. SIERRA VANDERKAMP, ASHLEY A. STEGELMEIER, Byram W. Bridle (Dr. Bridle's trainees capitalized). (2021). In Vitro Analysis of Oxidative Stress on Off-Target Infection of Activated T Cells by Oncolytic Vesicular Stomatitis Virus. Annual Meeting of the Canadian Society for Immunology (virtual) (poster),
Main Audience: Researcher
Invited?: No, Keynote?: No, Competitive?: No

7. LILY CHAN, Sarah K. Wootton, Byram W. Bridle* and KHALIL KARIMI* (*equal senior authors) (Dr. Bridle's HQP capitalized). (2021). Following Administration of Dendritic Cell-Based Vaccines There is an Increase in Type 2 Innate Lymphoid Cells in the Local Draining Lymph Node and Spleen. Annual Meeting of the Canadian Society for Immunology (virtual) (poster),
Main Audience: Researcher
Invited?: No, Keynote?: No, Competitive?: No

8. J Yates, R MOULD, L CHAN, J KNAPP, Y MEHRANI, Y Pei, P Pham, A Leacy, L Santry, BA McBey, P Major, Byram W. Bridle*, L Susta*, S Wootton* (*equal senior authors) (Dr. Bridle's HQP capitalized). (2021). Recombinant avian orthoavulavirus-1 engineered to express variants of the SARS-CoV-2 Spike Protein induces mucosal and systemic immune responses. American Society for Gene and Cell Therapy Annual Meeting 2021 (virtual) (poster),
Main Audience: Researcher
Invited?: No, Keynote?: No, Competitive?: No

9. JASON P. KNAPP, JACOB P. VAN VLOTEN, Lisa A. Santry, Jacob Yates, JESSICA A. MINOTT, Sarah K. Wootton, and Byram W. Bridle (Dr. Bridle's trainees capitalized). (2021). Differential Susceptibility of Viral-Vectored Vaccines to Temperatures Over 37oC. Annual Meeting of the Canadian Society for Immunology (virtual) (poster),
Main Audience: Researcher
Invited?: No, Keynote?: No, Competitive?: No

10. JULIA E. KAKISH, JASON P. KNAPP, ARTHANE KODEESWARAN, KATRINA GERONIMO, MARY ELLEN CLARK, and Byram W. Bridle (Dr. Bridle's trainees capitalized). (2021). Investigating the Effect of Low Anatomical Temperatures on Rhabdoviruses. Annual Meeting of the Canadian Society for Immunology (virtual) (poster),
Main Audience: Researcher
Invited?: No, Keynote?: No, Competitive?: No

11. YEGANEH MEHRANI, LILY CHAN, ASHLEY A. STEGELMEIER, Byram W. Bridle*, KHALIL KARIMI* (*equal senior authors) (Dr. Bridle's HQP capitalized). (2021). Antiviral Cytokine Responses in Murine Bone-Marrow-Derived Mast Cells: Disruption of Type I Interferon Signaling and Elevation of Inflammatory Cytokines. American Society for Virology Annual Scientific Meeting (virtual) (poster),
Main Audience: Researcher
Invited?: No, Keynote?: No, Competitive?: No

12. ASHLEY A. STEGELMEIER, Kevin Stinson, Sarah K. Wootton, Byram W. Bridle (Dr. Bridle's trainee capitalized). (2021). Characterizing Cytokine, Chemokine, and Acute-Phase Protein Profiles of Plasma Samples Derived from Patients that Tested Positive for COVID-19. Annual Meeting of the Canadian Society for Immunology (virtual) (poster),
Main Audience: Researcher
Invited?: No, Keynote?: No, Competitive?: No

13. Kathy Matuszewska, Simone Ten Kortenaar, Madison Pereira, Duncan Petrik, Leslie Ogilvie, Pierre P. Major, Jack Lawler, Sarah K. Wootton, Byram W. Bridle, Jeremy Simpson, Jim Petrik. (2021). Fc3TSR Normalizes the Tumor Microenvironment and Improves Treatment Delivery in an Orthotopic, Syngeneic Mouse Model of Epithelial Ovarian Cancer. Canadian Conference on Ovarian Cancer Research (virtual) (poster),
Main Audience: Researcher
Invited?: No, Keynote?: No, Competitive?: No

14. (2021). Answers to Outstanding Questions About COVID-19 Vaccines Will Dictate the Success or Failure of the Rollout. Second International COVID-19 Symposium, New Zealand
Main Audience: General Public
Invited?: Yes, Keynote?: Yes

15. ASHLEY STEGELMEIER, KIERSTEN HANADA, KHALIL KARIMI, Sarah Wootton, Byram Bridle (Dr. Bridle's HQP capitalized). (2021). Developing a Murine Cytokine Storm Model with IFNAR-Knockout Mice to Rapidly Test SARS-CoV-2 Immunotherapies. American Society for Virology Annual Scientific Meeting (virtual) (oral presentation),
Invited?: Yes, Keynote?: No, Competitive?: Yes

16. Amira Rghei, Laura van Lieshout, Benjamin McLeod, Yanlong Pei, Hugues Faust, Gary Kobinger, Brad Thompson, KHALIL KARIMI, Byram W. Bridle, Leonardo Susta, Sarah Wootton (Dr. Bridle's HQP capitalized). (2021). Vectorized Expression of SARS-CoV-2-Specific Human Antibodies in Mice and Sheep is Feasible and Well-Tolerated. American Society for Gene and Cell Therapy Annual Meeting 2021 (virtual) (poster),
Main Audience: Researcher
Invited?: No, Keynote?: No, Competitive?: No

17. YEGANEH MEHRANI, LILY CHAN, ASHLEY A. STEGELMEIER, Byram W. Bridle*, KHALIL KARIMI* (*equal senior authors) (Dr. Bridle's trainees capitalized). (2021). Excessive Antiviral Cytokine Responses in Adoptively Transferred Mast Cells: Disruption of Type I Interferon Signaling Elevates Inflammatory Cytokines. Annual Meeting of the Canadian Society for Immunology (virtual) (poster),
Main Audience: Researcher
Invited?: No, Keynote?: No, Competitive?: No

18. JESSICA A. MINOTT, JACOB P. VAN VLOTEN, LILY CHAN, YEGANEH MEHRANI, Sarah K. Wootton*, Byram W. Bridle* and KHALIL KARIMI* (*equal senior authors) (Dr. Bridle's trainees capitalized). (2021). Investigating the Role of Neutrophils in Oncolytic Orf Virus-Activated Anti-Tumour Immunity in a Pre-Clinical Murine Model of Melanoma. Annual Meeting of the Canadian Society for Immunology (virtual) (poster),
Invited?: No, Keynote?: No, Competitive?: No

19. LILY CHAN, ASHLEY STEGELMEIER, Sarah K. Wootton, Byram W. Bridle* and KHALIL KARIMI* (*equal senior authors) (Dr. Bridle's HQP capitalized). (2021). The Tolerogenic Potential of Dendritic Cells Infected with an Adeno-Associated Virus Gene Therapy Vector. American Society for Virology Annual Scientific Meeting (virtual) (poster),
Main Audience: Researcher
Invited?: No, Keynote?: No, Competitive?: No

20. (2021). Answers to Outstanding Questions About COVID-19 Vaccines Will Dictate the Success or Failure of the Rollout. COVID-19 Panel Discussion: A Vaccine Recovery Hosted by the Infectious Disease Working Group, University of Toronto, Canada
Main Audience: General Public
Invited?: Yes, Keynote?: Yes

21. (2020). Tumour Microenvironmental Barriers to Successful Oncolytic Virotherapy. McMaster Immunology Research Centre Seminar Series, McMaster University, Hamilton, Ontario, January 15, 2020, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: Yes

22. (2020). COVID-19: Realistic Timelines for Vaccine Development. Kitchener Public Library: Science Literacy Week (Webinar), Canada
Main Audience: General Public
Invited?: Yes, Keynote?: Yes

23. (2020). Kitchener Public Library: Science Literacy Week. Biology and Control of SARS-CoV-2 (Webinar), Canada
Main Audience: General Public
Invited?: Yes, Keynote?: No

24. Cristine J. Reitz, Faisal J. Alibhai, Tarak N. Khatua, Mina Rasouli, Byram W. Bridle, Thomas P. Burris, Tami A. Martino. (2020). Circadian Medicine to Treat Myocardial Infarction (Heart Attack): Targeting the Cardiac NLRP3 Inflammasome (poster). Society for Research on Biological Rhythms (SRBR) 2020 Virtual Conference, United States of America
Main Audience: Researcher
Invited?: Yes, Keynote?: No

25. (2020). COVID-19 Vaccines: Facts to Inform Policies. New Zealand COVID-19 Science and Policy Symposium Webinar, New Zealand
Main Audience: Decision Maker
Invited?: Yes, Keynote?: Yes

26. Kiersten Hanada, Ashley Stegelmeier, Lily Chan, Yeganeh Mehrani & Byram Bridle. (2020). Calming the COVID-19 Storm: Developing a Model to Study Toxic Cytokine Responses to Viruses (poster; won 1st place). Ontario Veterinary College Summer Career Opportunities and Research Exploration Program, Guelph, Canada
Main Audience: Researcher
Invited?: No, Keynote?: No

27. Ashley Stegelmeier, Kiersten Hanada, Khalil Karimi, Sarah Wootton, Byram Bridle. (2020). Developing a Murine Cytokine Storm Model with IFNAR-Knockout Mice to Rapidly Test SARS-CoV-2 Immunotherapies (oral presentation; won 1st place out of 40 presentations). University of Guelph Graduate Association On-Line Research Conference, Guelph, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

28. Ashley A. Stegelmeier, Amanda W.K. AuYeung, Robert Mould, Thomas McAusland, Lisa Santry, Jacob van Vloten, Megan Strachan-Whaley, Elaine Klafuric, James J. Petrik, Sarah K. Wootton and Byram W. Bridle. (2019). Off-Target Infection of Stimulated T Cells by Vesicular Stomatitis Virus has Implications for Single- Versus Multi-Dosing Oncolytic Virotherapy Protocols (poster and 'speed-talk' oral presentation). Annual Scientific Meeting of the Canadian Cancer Immunotherapy Consortium, Toronto, Ontario, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

29. (2019). Graduate Studies in the Department of Pathobiology (oral presentation as part of a panel discussion). Career Opportunities and Research Experience Summer Program, Ontario Veterinary College, Guelph, Canada
Main Audience: Knowledge User
Invited?: Yes, Keynote?: No

30. Lily Chan, Robert Mould, Sarah K. Wootton, Byram W. Bridle* and Khalil Karimi* *co-senior authors. (2019). Dendritic Cell Vaccines Provoke an Increase in the Number of Interleukin-22-Producing Type 3 Innate Lymphoid Cells in the Local Draining Lymph Nodes and in The Spleen (poster). Summit for Cancer Immunotherapy, October 20-23, 2019, Victoria, BC, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

31. Jacob van Vloten, Sarah K. Wootton* and Byram W. Bridle* (*co-equal senior authors). (2019). Quantifying T-Cell and Antibody Responses Induced by Antigen-Agnostic Immunotherapies (oral presenation). Ontario Veterinary College Graduate Student Research Symposium, Guelph, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

32. (2019). Developing Novel Cancer Biotherapies (oral presentation). Canadian Cancer Society Relay for Life, Guelph, Canada
Main Audience: General Public
Invited?: Yes, Keynote?: Yes

33. Ashley A. Ross, Amanda W.K. AuYeung, Robert Mould, Thomas McAusland, Lisa Santry, Jacob van Vloten, Megan Whaley, James J. Petrik, Sarah K. Wootton and Byram W. Bridle. (2019). Off-Target Infection of Stimulated T Cells by Vesicular Stomatitis Virus Has Implications for Single- Versus Multi-Dosing Oncolytic Virotherapy Protocols (oral presentation). Ontario Veterinary College Graduate Student Research Symposium, Guelph, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

34. Jacob P. van Vloten, Joelle C. Ingrao, Robert C. Mould, Lisa A. Santry, Khalil Karimi, D. Grant McFadden, James J. Petrik, Sarah K. Wootton and Byram W. Bridle. (2019). An OrfV-Infected Cell Vaccine Induces Innate and Adaptive Immune Responses Against Osteosarcoma Metastases Resulting in Long-Term Survival. Annual Scientific Meeting of the Canadian Cancer Immunotherapy Consortium (poster and 'speed talk' oral presentation), Toronto, Ontario, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

35. E Klafuric, M Strachan-Whaley, L Santry, A AuYeung, J van Vloten, R Mould, T McAusland, ME Clark, J Minott, S Holtz, J Saturno, K Karimi, A Mutsaers, S Wootton and Byram W. Bridle. (2019). Combining Decitabine with Oncolytic Virotherapy Preferentially Kills Acute Leukemia Cells Via Lethal Oxidative Stress (poster). Summit for Cancer Immunotherapy, October 20-23, 2019, Victoria, BC, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

36. Maedeh Darzianiazizi (Mahi Azizi), Jacob Van Vloten, Shayan Sharif, Ravi Kulkarni, Byram W. Bridle*, Khalil Karimi* (*co-equal senior authors). (2019). Differential Sex-Mediated Hepatotoxicity Caused by a Viral Infection with a Concomitant Defect in Type I Interferon Signaling (oral presentation). Ontario Veterinary College Graduate Student Research Symposium, Guelph, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

37. Robert Mould, Jacob van Vloten, Ashley Ross, Mankerat Singh, Anthony Mutsaers, James Petrik, Leonardo Susta, Geoffrey Wood, Sarah Wootton, Byram W. Bridle*, Khalil Karimi* (*co-equal senior authors). (2019). The Functional Utility Of A Unique Subset Of Bone Marrow-Derived Dendritic Cells For Cancer Vaccines (poster presentation). Institute for Comparative Cancer Investigation Cancer Research Symposium, Guelph, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

38. Robert Mould, J. van Vloten, C. Fink, A. Ross, M. Singh, L. Susta, A. Mutsaers, J. Petrik, G. Wood, S. Wootton, G. Dekaban, Byram W. Bridle*, Khalil Karimi* (*co-equal senior authors). (2019). IL-12-secreting Dendritic Cells That Do Not Produce TNF-? Are A Minor Component Of 'Dendritic Cell Cultures' But The Dominant Antigen Presenters (poster presentation). Ontario Veterinary College Graduate Student Research Symposium, Guelph, Canada
Main Audience: Researcher
Invited?: No, Keynote?: No

39. Elaine Klafuric, Megan Strachan-Whaley, Lisa Santry, Amanda AuYeung, Jacob van Vloten, Robert Mould, Thomas McAusland, Khalil Karimi, Anthony Mutsaers, Sarah Wootton and Byram W. Bridle. (2019). Combining Decitabine with Oncolytic Virotherapy Preferentially Kills Acute Myeloid Leukemia Cells Via Lethal Oxidative Stress (oral presentation). Institute for Comparative Cancer Investigation Cancer Research Symposium, Guelph, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

40. Jacob P. van Vloten, Joelle C. Ingrao, Robert C. Mould, Lisa A. Santry, Khalil Karimi, D. Grant McFadden, James J. Petrik, Sarah K. Wootton and Byram W. Bridle. (2019). An ORF Virus-Infected Cell Vaccine Induces Innate and Adaptive Immune Responses Against Osteosarcoma Metastases Resulting in Long-Term Survival (poster). Summit for Cancer Immunotherapy, October 20-23, 2019, Victoria, BC, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

41. Rghei, AD, Lieshout, LV, Shihua, H, Soule, G, Bridle, BW, Qui, X, and Wootton, SK. (2019). AAV-Mediated Expression of Monoclonal Antibodies for the Prevention of Marburg Virus Infection (poster). Annual Meeting of the American Society of Gene and Cell Therapy, Washington DC, United States of America
Main Audience: Researcher
Invited?: Yes, Keynote?: No

42. Robert Mould, J van Vloten, C Fink, L Chan, A Stegelmeier, M Singh, L Susta, A Mutsaers, J Petrik, G Wood, S Wootton, G Dekaban, Byram W. Bridle* and Khalil Karimi* (*co-equal senior authors). (2019). IL-12-secreting Dendritic Cells That Do Not Produce TNF-$\alpha$ Are A Minor Component Of 'Dendritic Cell Cultures' But The Dominant Antigen Presenters. Annual Scientific Meeting of the Canadian Cancer Immunotherapy Consortium (poster and 'speed talk' oral presentation), Toronto, Ontario, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

43. Jason P. Knapp, Megan R. Strachan-Whaley, Elaine M. Klafuric and Byram W. Bridle. (2019). Combining Epigenetic Modifiers and Oncolytic Viruses to Treat Acute Leukemias throughout the Central Nervous System (poster). Summit for Cancer Immunotherapy, October 20-23, 2019, Victoria, BC, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

44. Cristine J. Reitz, Faisal J. Alibhai, Tarak N. Khatua, Mina Rasouli, Byram W. Bridle, Thomas P. Burris and Tami A. Martino. (2019). Circadian Medicine: Targeting the Cardiac Inflammasome to Prevent Heart Failure. 2nd Southern Ontario Cardiovascular Research Association Annual Conference, York University, October 18, 2019, Toronto, Ontario, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

45. Ashley A. Stegelmeier and Byram W. Bridle. (2019). Off-Target Infection of Stimulated T Cells by Vesicular Stomatitis Virus has Implications for Single- Versus Multi-Dosing Oncolytic Virotherapy Protocols. Annual Inter-Lab Retreat for the Canadian Oncolytic Virus Consortium, Elgin, Ontario, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

46. Thomas McAusland, Jacob van Vloten, Lisa Santry, Joelle Ingrao, Matthew Guilleman, Rozanne Arulanandam, Pierre Major, Jean-Simon Diallo, Leonardo Susta, Khalil Karimi, Byram W. Bridle, Sarah Wootton. (2019). Viral Sensitizer-Mediated Enhancement of Oncolytic NDV Leads to Rapid Clearance of Primary Tumours in a Mouse Model of Melanoma (poster and oral presentations). Summit for Cancer Immunotherapy, October 20-23, 2019, Victoria, BC, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

47. Alicia Viloria-Petit, Geoffrey Wood, Anthony Mutsaers, Michelle Oblak, Brigitte Brisson, Byram Bridle, Paul Woods and David Pearl. (2019). DOGBONe: A Canine Research Platform for the Discovery of Reliable Biomarkers of Osteosarcoma Progression. Canadian Society for Molecular Biosciences, Montreal, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

48. J Vloten, K Matuszewska, A Stegelmeier, L Santry, J Minott, T McAusland, E Klafuric, R Mould, K Karimi, G McFadden, J. Petrik, Byram W. Bridle*, and Sarah K. Wootton* *equal senior authors. (2019). ORF Virus as an Immunotherapy for Advanced-Stage Ovarian Cancers (poster). Summit for Cancer Immunotherapy, October 20-23, 2019, Victoria, BC, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

49. Ashley A. Stegelmeier, Amanda W.K. AuYeung, Robert Mould, Thomas McAusland, Lisa Santry, Jacob van Vloten, Megan Whaley, Elaine Klafuric, James J. Petrik, Sarah K. Wootton and Byram W. Bridle. (2019). Off-Target Infection of Stimulated T Cells by Vesicular Stomatitis Virus has Implications for Single- Versus Multi-Dosing Oncolytic Virotherapy Protocols (poster and oral presentations). Summit for Cancer Immunotherapy, October 20-23, 2019, Victoria, BC, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

50. R Mould, J van Vloten, C Fink, L Chan, A Ross, M Singh, L Susta, A Mutsaers, J Petrik, G Wood, S Wootton, G Dekaban, Byram W. Bridle* and Khalil Karimi* *equal senior authors. (2019). IL-12-Secreting Dendritic Cells that do not Produce TNF-$\alpha$ are a Minor Component of 'Dendritic Cell Cultures' but the Dominant Antigen Presenters (poster). Summit for Cancer Immunotherapy, October 20-23, 2019, Victoria, BC, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

51. Jacob P. van Vloten, Lisa A. Santry, Elaine M. Klafuric, Thomas M. McAusland, Khalil Karimi, Grant McFadden, James J. Petrik, Sarah K. Wootton and Byram W. Bridle. (2019). Quantifying T-Cell and Antibody Responses Induced by Antigen-Agnostic Immunotherapies (poster presentation). Institute for Comparative Cancer Investigation Cancer Research Symposium, Guelph, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

52. Ashley A. Ross, Wing Ka Amanda AuYeung, Jim J. Petrik, Sarah K. Wootton and Byram W. Bridle. (2018). Elucidating Infection of Stimulated Leukocytes by Oncolytic Viruses (poster presentation). Canadian Society for Immunology Annual Scientific Meeting, London, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

53. Elaine Klafuric, M. Strachan-Whaley, L. Santry, A. AuYeung, J. van Vloten, R. Mould, T. McAusland, M.E. Clark, J. Minott, S. Holtz, J. Saturno, K. Karimi, A. Mutsaers, S. Wootton and Byram W. Bridle. (2018). Combining Decitabine with Oncolytic Virotherapy Preferentially Kills Acute Leukemia Cells Via Lethal Oxidative Stress (oral and poster presentation). Summit for Cancer Immunotherapy, Oct. 27-30, Banff, Alberta, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

54. Robert Mould, Jacob P. Van Vloten, Anthony Mustaers, James J. Petrik, Leonardo Susta, Geoffrey Wood, Sarah K. Wootton, Byram W. Bridle* and Khalil Karimi* *co-senior authors. (2018). A Systematic Analysis of the Functional Utility of Bone Marrow-Derived Dendritic Cells as a Vaccine: Comparing Several Common Culturing Protocols (poster presentation). The 11th annual Institute for Comparative Cancer Investigation Cancer Research Symposium, Ontario Veterinary College, University of Guelph, Guelph, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

55. Robert Mould, Jacob P. Van Vloten, Anthony Mustaers, James J. Petrik, Leonardo Susta, Geoffrey Wood, Sarah K. Wootton, Byram W. Bridle* and Khalil Karimi* *co-senior authors. (2018). A Systematic Analysis of the Functional Utility of Bone Marrow-Derived Dendritic Cells as a Vaccine: Comparing Several Common Culturing Protocols (poster presentation). Canadian Society for Immunology Annual Scientific Meeting, London, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

56. Maedeh Darzianiazizi (aka Mahi Azizi), Robert C. Mould, Jacob P. van Vloten, Ashley A. Ross, Shayan Sharif, Ravi Kulkarni, Byram W. Bridle* and Khalil Karimi* (*co-senior authors). (2018). Upregulation of Programmed Death Ligand-1 (PDL-1) on Neutrophils in Response to Recombinant Vesicular Stomatitis Virus (rVSV?m51) Infection (oral and poster presentation). Summit for Cancer Immunotherapy, Oct. 27-30, Banff, Alberta, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

57. Jacob P van Vloten, Robert C Mould, Joelle C Ingrao, James J Petrik, Grant McFadden, Sarah K Wootton and Byram W Bridle. (2018). An Orf Virus-Infected Cell Vaccine Elicits Long-Term Survival in an Osteosarcoma Lung Metastasis Model Through NK Cell Activity (poster and oral presentation). Canadian Society for Immunology Annual Scientific Meeting, London, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

58. Jacob P. van Vloten, Robert Mould, Mary Ellen Clark, Arthane Kodeeswaran, Katrina Geronimo, Julia De Carvalho Nakamura, Julia Saturno, Grant McFadden, James Petrik, Sarah Wootton and Byram W. Bridle. (2018). Pyrexia Impedes Oncolytic Rhabdovirus-Mediated Therapy (poster presentation). Summit for Cancer Immunotherapy, Oct. 27-30, Banff, Alberta, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

59. Samantha Holtz, Megan Strachan-Whaley, Mary-Ellen Clark, Robert Mould, Lisa Santry, Thomas McAusland, Sarah K. Wootton, Khalil Karimi and Byram W. Bridle. (2018). Combining Oncolytic Virotherapy with Epigenetic Modifiers to Treat Lymphomas (poster presentation). Summit for Cancer Immunotherapy, Oct. 27-30, Banff, Alberta, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

60. Megan R. Strachan-Whaley, Julia Saturno, Wing Ka Amanda AuYeung, Jacob P. vanVloten, Anthony Mutsaers, Sarah K. Wootton and Byram W. Bridle. (2018). Combining Decitabine with Oncolytic Viruses to Kill Acute Leukemias by Oxidative Stress (poster and oral presentation). Canadian Society for Immunology Annual Scientific Meeting, London, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

61. Maedeh Darzianiazizi (aka Mahi Azizi), Robert C. Mould, Jacob Van Vloten, Ashley Ross, Shayan Sharif, Ravi Kulkarni, Byram W. Bridle and Khalil Karimi. (2018). Innate Immune Responses to Recombinant Vesicular Stomatitis Virus: the Role of Type I Interferon Signaling and Neutrophils (poster presentation). Canadian Society for Immunology Annual Scientific Meeting, London, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

62. Maedeh Darzianiazizi (Aka Mahi Azizi), Robert C. Mould, Jacob Van Volten, Ashley Ross, Shayan Sharif, Ravi Kulkarni, Byram W. Bridle* and Khalil Karimi* *co-senior authors. (2018). Innate Immune Responses to Recombinant Vesicular Stomatitis Virus: Immunosuppressive Neutrophils (poster presentation). The 11th annual Institute for Comparative Cancer Investigation Cancer Research Symposium, Ontario Veterinary College, University of Guelph, Guelph, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

63. Robert Mould, Mankerat Singh, Jacob van Vloten, Ashley Ross, Leonardo Susta, Anthony Mutsaers, James Petrik, Geoffrey Wood, Sarah Wootton, Byram W. Bridle* and Khalil Karimi* (*co-senior authors). (2018). Analyzing The Functional Utility Of Bone Marrow-Derived Dendritic Cells As A Cancer Vaccine: Investigation Of A Unique IL-12-Producing DC Subset (poster presentation). Summit for Cancer Immunotherapy, Oct. 27-30, Banff, Alberta, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

64. Jacob P. van Vloten, Robert Mould, Mary Ellen Clark, Arthane Kodeeswaran, Katrina Geronimo, Julia De Carvalho Nakamura, Julia Saturno, Grant McFadden, James Petrik, Sarah Wootton and Byram W. Bridle. (2018). Pyrexia Impedes Oncolytic Rhabdovirus-Mediated Therapy (oral presentation). Summit for Cancer Immunotherapy, Oct. 27-30, Banff, Alberta, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

65. J. Paul Woods, Byram Bridle, Michelle Oblak, Robert Foster, Geoffrey Wood, Victoria Sabine, Jeff Hummel and Brian Lichty. (2018). Novel Oncolytic Maraba virus for the Adjuvant Treatment of Feline Mammary Carcinoma (poster presentation). Veterinary Cancer Society: Immunotherapy Workshop, Anchorage, United States of America
Main Audience: Researcher
Invited?: Yes, Keynote?: No

66. Jacob P van Vloten, Robert C Mould, Joelle C Ingrao, James J Petrik, Grant McFadden, Sarah K Wootton and Byram W Bridle. (2018). An Orf Virus-Infected Cell Vaccine Elicits Long-Term Survival in an Osteosarcoma Lung Metastasis Model Through NK Cell Activity (oral presentation). The 11th annual Institute for Comparative Cancer Investigation Cancer Research Symposium, Ontario Veterinary College, University of Guelph, Guelph, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

67. Ashley A. Ross, Amanda W.K. AuYeung, Robert Mould, Thomas McAusland, Lisa Santry, Jacob van Vloten, Megan Strachan-Whaley, James J. Petrik, Sarah K. Wootton and Byram W. Bridle. (2018). Infection of Stimulated Leukocytes by Oncolytic Viruses: Implications for Single- Versus Multi-Dosing Protocols (poster presentation). Summit for Cancer Immunotherapy, Oct. 27-30, Banff, Alberta, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

68. Lisa A. Santry, Jacob P. van Vloten, Robert C. Mould, Amanda W.K. AuYeung, Thomas M. McAusland, Byram W. Bridle* and Sarah K. Wootton* (*co-senior authors). (2018). Recombinant Newcastle Disease Viruses Expressing Checkpoint Inhibitors Induce a Proinflammatory State and Enhance Tumor-Specific Immune Responses in Two Syngeneic Mouse Models of Cancer (poster presentation). Summit for Cancer Immunotherapy, Oct. 27-30, Banff, Alberta, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

69. Ashley Ross, Amanda AuYeung, Robert Mould, Thomas McAusland, Jim Petrik, Sarah Wootton and Byram Bridle. (2018). Infection of Stimulated Leukocytes by Oncolytic Viruses: Implications for Single- Versus Multi-Dosing Protocols (oral presentation). Graduate Student Research Symposium, Ontario Veterinary College, University of Guelph, Guelph, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

70. Thomas M. McAusland, Jacob P. van Vloten, Lisa A. Santry, Joelle C. Ingrao, Matthew Guilleman, Rozanne Arulanandam, Jean-Simon Diallo, Leo Susta, Khalil Karimi, Byram W. Bridle and Sarah K. Wootton. (2018). Enhancement of NDV-Mediated Oncolysis and Tumor Regression Through the Addition of Small Molecule Viral Sensitizers (poster presentation). Summit for Cancer Immunotherapy, Oct. 27-30, Banff, Alberta, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

71. Jessica Minott, Robert Mould, Mary Ellen Clark, Khalil Karimi and Byram W. Bridle. (2018). Assessing the Impact of Estrogen Receptor Signaling on the Efficacy of Oncolytic Viruses (poster presentation). Summit for Cancer Immunotherapy, Oct. 27-30, Banff, Alberta, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

72. Megan R. Strachan-Whaley, Amanda W.K. AuYeung, Jacob P. vanVloten, Julia Saturno, Lisa A. Santry, Thomas M. McAusland, Robert C. Mould, Anthony J. Mutsaers, Sarah K. Wootton and Byram W. Bridle. (2018). Decitabine Increases the Sensitivity of Leukemias to Oncolytic Viruses Through the Induction of Oxidative Stress (poster presentation). The 11th annual Institute for Comparative Cancer Investigation Cancer Research Symposium, Ontario Veterinary College, University of Guelph, Guelph, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

73. Ashley A. Ross, Wing Ka Amanda AuYeung, Thomas McAusland, Lisa Santry, Jim J. Petrik, Sarah K. Wootton, Byram W. Bridle. (2018). Elucidating Infection of Stimulated Leukocytes by Oncolytic Viruses (oral presentation). The 11th annual Institute for Comparative Cancer Investigation Cancer Research Symposium, Ontario Veterinary College, University of Guelph, Guelph, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

74. Li Deng, Robert C. Mould, Julia Kim, Wing Ka Amanda AuYeung, Byram W. Bridle. (2017). Construction and Validation of a Novel Vaccine for the Treatment of Canine Melanomas (poster presentation). Summit for Cancer Immunotherapy, Gatineau, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

75. Li Deng, Robert C. Mould, Julia Kim, Wing Ka Amanda AuYeung, Byram W. Bridle. (2017). Construction and Validation of a Novel Vaccine for the Treatment of Canine Melanomas (poster presentation). 10th Annual Institute for Comparative Cancer Investigation Cancer Research Symposium, Guelph, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

76. Kathy Matuszewska, Lisa Santry, Byram Bridle, Sarah K. Wootton, Jack Lawler, Jim Petrik. (2017). Combined Vessel Normalization and Oncolytic Virus Therapy in the Treatment of Advanced Stage Ovarian Cancer. 10th Annual Institute for Comparative Cancer Investigation Cancer Research Symposium, Guelph, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

77. Julia Saturno, Jacob van Vloten, Lisa Santry, Robert Mould, Sarah Wootton, Byram Bridle. (2017). Temperature as a Confounding Variable in Oncolytic Virotherapy for Canine Melanomas. Summit for Cancer Immunotherapy, Gatineau, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

78. Megan Strachan-Whaley and Byram W. Bridle. (2017). Combining Oncolytic Viruses With Epigenetic Modifiers in Leukemia. 10th Annual Institute for Comparative Cancer Investigation Cancer Research Symposium, Guelph, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

79. Mankerat Singh, Byram W. Bridle* and Khalil Karimi* *co-senior authors. (2017). Differentiating Dendritic Cells in the Presence of Interleukin-4 to Enhance their Potential as Vaccines (poster presentation; won first place in the undergraduate student category). Summit for Cancer Immunotherapy, Gatineau, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

80. (2017). Cancer Biotherapies: Lessons Learned from Translational Research. RGE Murray Seminar Series, Western University, London, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: Yes

81. Megan Rae Strachan-Whaley, Amanda AuYeung, Julia Saturno, Lisa Santry, Byram W. Bridle. (2017). Decitabine Increases the Sensitivity of Acute Leukemic Cells to Oncolytic Viruses (poster and speed-talk presentations). 2017 Annual Scientific Meeting of the Terry Fox Research Institute November 4, 2017, Vancouver, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

    Funding Sources: Cancer Research Society (The) - PIN #19046; Terry Fox Research Institute (TFRI) - Project #1041

82. Megan Rae Strachan-Whaley, Amanda AuYeung, Julia Saturno, Lisa Santry, Byram W. Bridle. (2017). Decitabine Increases the Sensitivity of Acute Leukemic Cells to Oncolytic Viruses (poster presentation). Canadian Cancer Research Conference November 5-7, 2017, Vancouver, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

    Funding Sources: Cancer Research Society (The) - PIN #19046; Terry Fox Research Institute (TFRI) - Project #1041

83. Amanda WK AuYeung, Robert C. Mould, Jacob van Vloten, Mahi Azizi, Lisa Santry, Sarah K. Wootton, J. Paul Woods, Geoffrey Wood, James Petrik, Khalil Karimi and Byram W. Bridle. (2017). Virus-Induced Leukopenia: Challenging the Cell Trafficking Paradigm During Oncolytic Virotherapy. Summit for Cancer Immunotherapy, Gatineau, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

84. Anthony Mutsaers, Byram W. Bridle, Brigitte Brisson, Michelle Oblak, Alicia Viloria-Petit, Geoffrey Wood and Paul Woods. (2017). Naturally-Occurring Bone Cancers in Pet Dogs as a Model of Human Osteosarcomas (poster presentation). Cancer Bone Society Annual Scientific Meeting, Indianapolis, United States of America
Main Audience: Researcher
Invited?: Yes, Keynote?: No

85. Jacob van Vloten, Mary Ellen Clark, Arthane Kodeeswaran, Katrina Geronimo, Julia De Carvalho, Julia Saturno, Rob Mould, Grant McFadden, James Petrik, Sarah Wootton and Byram W. Bridle. (2017). Simulated Pyrexia Attenuates Rhabdovirus-Mediated Oncolysis of Cancer Cells. Summit for Cancer Immunotherapy, Gatineau, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

86. Maedeh Darzianiazizi, Katrina Allison, Byram Bridle* and Khalil Karimi* *co-senior authors. (2017). Sex Disparity in Innate Immune Responses to Recombinant Vesicular Stomatitis Virus: the Role of Type I Interferon Signaling and Neutrophils. Summit for Cancer Immunotherapy, Gatineau, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

87. Mankerat Singh, Byram W. Bridle* and Khalil Karimi* *co-senior authors. (2017). Differentiating Dendritic Cells in the Presence of Interleukin-4 to Enhance Their Potential as Vaccines. 10th Annual Institute for Comparative Cancer Investigation Cancer Research Symposium, Guelph, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

88. Megan Strachan-Whaley, Amanda AuYeung, Lisa Santry, Tony Mutsaers, Sarah Wootton, Byram Bridle. (2017). A Combination of Oncolytic Viruses and Epigenetic Modifiers as a Novel Therapy for Acute Leukemias. Summit for Cancer Immunotherapy, Gatineau, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

89. R. Mould, A. AuYeung, J. van Vloten, D. Yu, L. Zhang, A. Pelin, J. Bell, Y. Wan, K. Karimi, L. Susta, J. Petrik, A. Mutsaers, G. Wood, S. Wootton and Byram W. Bridle. (2017). Clodronate-Mediated Depletion of Marginal Zone Macrophages Potentiates Rapid Induction of Tumour-Specific T Cell Responses by Oncolytic Virus Booster Vaccines. Summit for Cancer Immunotherapy, Gatineau, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

90. Lisa A. Santry, Amanda AuYeung, Thomas M. McAusland, Jacob P. van Vloten, Rob C. Mould, Kathy Matuszewska, Byram W. Bridle , James J. Petrik, Sarah K. Wootton. (2017). Evaluating the Therapeutic Potential of Oncolytic Newcastle Disease Virus in Mouse Models of Melanoma and Colon Carcinoma. 10th Annual Institute for Comparative Cancer Investigation Cancer Research Symposium, Guelph, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

91. Amanda WK AuYeung, Robert C. Mould, Jacob van Vloten, Mahi Azizi, Lisa Santry, Sarah K. Wootton, J. Paul Woods, Geoffrey Wood, James Petrik, Khalil Karimi and Byram W. Bridle. (2017). Virus-Induced Leukopenia: Challenging the Cell Trafficking Paradigm During Oncolytic Virotherapy. 10th Annual Institute for Comparative Cancer Investigation Cancer Research Symposium, Guelph, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

92. Kathy Matuszewska, Lisa Santry, Byram Bridle, Sarah K. Wootton, Jack Lawler, Jim Petrik. (2017). Combined Vessel Normalization and Oncolytic Virus Therapy in the Treatment of Advanced Stage Ovarian Cancer. Summit for Cancer Immunotherapy, Gatineau, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

93. Maedeh Darzianiazizi, Katrina Allison, Khalil Karimi, Byram Bridle. (2017). Sex Disparity in Innate Immune Responses to Recombinant Vesicular Stomatitis Virus: The Role of Type I Interferon Signaling and Neutrophils. 10th Annual Institute for Comparative Cancer Investigation Cancer Research Symposium, Guelph, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

94. Presented by: Allison K Co-authors: Karimi K, Bridle BW. (2016). Gender Disparity in Innate Immune Responses to Viral Infection: The Role of Type I Interferon. Ontario Veterinary College - Career Opportunities and Research Experience Program (poster presentation), Guelph, Canada
Main Audience: Researcher
Invited?: No, Keynote?: No

    Funding Sources: Natural Sciences and Engineering Research Council of Canada (NSERC) - 436264-2013

95. Presenter: Strachan-Whaley M Co-authors: AuYeung WA, Santry L, Mutsaers A, Wootton SK, Bridle BW. (2016). Sensitization of Leukemic Cells to Oncolytic Viruses Using Epigenetic Modifiers. Institute for Comparative Cancer Investigation 9th Annual Cancer Research Symposium (poster presentation), Guelph, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

    Funding Sources: Cancer Research Society (The) - 19046

96. Presenter: AuYeung WA Co-authors: Mould R, Woods JPI, Wood G, Petrik J, Bridle BW. (2016). Mechanisms That Allow Oncolytic Viral Replication Inside a Tumour Despite Pre-Existing Immunity Against a Virus-Encoded Antigen. Institute for Comparative Cancer Investigation 9th Annual Cancer Research Symposium (poster presentation), Guelph, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

    Funding Sources: National Centre of Excellence in Biotherapies for Cancer Treatment (BioCanRx) - FY16 / ES3

97. Presenter: Matuszewska K Co-authors: Santry L, Bridle BW, Wootton S, Petrik JJ. (2016). Combined Vessel Normalization and Oncolytic Virus Therapy in the Treatment of Advanced Stage Ovarian Cancer. Summit for Cancer Immunotherapy (podium and poster presentation), Halifax, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

98. Presenter: de Carvalho J Co-authors: van Vloten J, Bridle BW. (2016). The Impact of Temperature on the Oncolytic Activity of Viruses. Ontario Veterinary College - Career Opportunities and Research Experience Program (poster presentation), Guelph, Canada
Main Audience: Researcher
Invited?: No, Keynote?: No

    Funding Sources: Cancer Research Society (The) - 19046

99. Presenter: Deng L Co-authors: Kim J, Mould RC, van Vloten J, AuYeung WA, Desai M, Bridle BW. (2016). From Mice to Humans Via Dogs: Development of a Novel Biotherapy for Osteosarcomas. Summit for Cancer Immunotherapy (poster presentation), Halifax, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

    Funding Sources: Terry Fox Research Institute (TFRI) - 1041

100. Katrina Geronimo, Mary Ellen Clark, Arthane Kodeeswaran, Glen Kim and Byram Bridle. (2016). Hypoxia Variably Affects Oncolytic Virus Efficacy While Potentiating the Growth of Human Cervical Cancer Cells. Sanofi Biogenius Canada, Ontario - Greater Toronto Poster Competition, Toronto, Canada
Main Audience: Researcher
Invited?: No, Keynote?: No

101. (2016). Career Night (small group meetings with academic trainees to discuss aspects of a career as a faculty member). A career night hosted by the Faculty of Health Sciences PDF Association at McMaster University, Hamilton, ON. This was open to all trainees at McMaster University and other regional universities (there were attendees from U. of Waterloo and Guelph), Hamilton, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

102. Presenter: AuYeung WA Co-authors: Mould R, Woods JP, Wood G, James P, Bridle BW. (2016). Mechanisms that Allow Oncolytic Viral Replication Inside a Tumour Despite Pre-Existing Immunity Against a Virus-Encoded Antigen (podium and poster presentation). Summit for Cancer Immunotherapy, Halifax, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

Funding Sources: National Centre of Excellence in Biotherapies for Cancer Treatment (BioCanRx) - FY16 / ES3

103. Presenter: Desai M Co-authors: van Vloten J, Santry L, Bridle BW. (2016). Evaluating the Impact of Temperature on the Oncolytic Potential of Viruses In Canine and Murine Osteosarcoma Cells. Ontario Veterinary College - Career Opportunities and Research Experience Program (poster presentation), Guelph, Canada
Main Audience: Researcher
Invited?: No, Keynote?: No

Funding Sources: Terry Fox Research Institute (TFRI) - 1041

104. Presenter: Woods JP Co-authors: Bridle BW, Oblak M, Foster R, Sabine V, Skowronski K, Hummel J, Lichty B. (2016). Novel Oncolytic Maraba Virus for the Adjuvant Treatment of Feline Mammary Carcinoma. Summit for Cancer Immunotherapy (poster presentation), Halifax, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

105. (2016). Cancer Biotherapies: Lessons Learned from Translational Research. Department of Molecular and Cellular Biology Seminar Series, University of Guelph, Guelph, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: Yes

106. Presenter: Strachan-Whaley M Co-authors: AuYeung WA, Santry L, Mutsaers A, Bienzle D, Wootton SK, Bridle BW. (2016). Sensitization of Leukemic Cells to Oncolytic Viruses Using Epigenetic Modifiers. Summit for Cancer Immunotherapy (poster presentation), Halifax, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

Funding Sources: Cancer Research Society (The) - 19046

107. Presenter: Woods JP Co-authors: Bridle BW, Bienzle D, Delay J, Morrison A, Cieplak M, Hummel J, Lichty B. (2016). A Safety Assessment of a Novel Oncolytic Maraba Virus in Cats. American College of Veterinary Internal Medicine Forum (poster presentation), Denver, United States of America
Main Audience: Researcher
Invited?: Yes, Keynote?: No

108. Presenter: Mould R Co-authors: AuYeung WA, Wood G, Wootton SK, Susta L, Petrik JJ, Mustaers A, Bridle BW. (2016). Increasing the Magnitude of Tumour-Specific T Cell Responses by Spreading a Vaccine Dose Across Multiple Injection Sites. Summit for Cancer Immunotherapy (podium and poster presentation), Halifax, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

Funding Sources: Terry Fox Research Institute (TFRI) - 1041

109. Presenter: Deng L Co-authors: Kim J, Mould RC, van Vloten J, AuYeung WA, Bridle BW. (2016). From Mice to Humans Via Dogs: Development of a Novel Biotherapy for Osteosarcomas. Institute for Comparative Cancer Investigation 9th Annual Cancer Research Symposium, Guelph, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

    Funding Sources: Terry Fox Research Institute (TFRI) - 1041

110. Presenter: Santry L Co-authors: van Vloten JP, Matuszewska K, Bridle BW, Petrik JJ, Wootton SK. (2016). Recombinant Newcastle Diease Virus as an Oncolytic Therapy for Ovarian and Prostate Cancers. American Society of Gene and Cell Therapy Annual Meeting (poster presentation), Washington, United States of America
Main Audience: Researcher
Invited?: Yes, Keynote?: No

111. Presenter: Ingrao J Co-authors: Shapiro K, de Jong J, van Vloten J, Barta JR, Menzies PI, Bridle BW, Wootton SK. (2016). Development of a Vaccine Against Parasitic Abortion in Sheep. OMAFRA/Rural Policy Learning Commons 2016 Product Development Research Day, Guelph, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

112. Arthane Kodeeswaran, Mary Ellen Clark, Katrina Geronimo, Glen Kim and Byram W. Bridle. (2016). The Effect of Temperature on the Efficacy of Oncolytic Viruses in Human Cervical Cancer Cells (awarded 3rd place). Sanofi Biogenius Canada, Ontario - Greater Toronto Poster Competition, Toronto, Canada
Main Audience: Researcher
Invited?: No, Keynote?: No

113. Presenter: van Vloten J Co-authors: Clark M, Geronimo K, Kodeeswaran A, Santry L, Mould RC, McFadden G, Petrik JJ, Wootton SK, Bridle BW. (2016). Fever-Grade Temperatures Attenuate Rhabdovirus-Mediated Oncolysis of Cancer Cells. Summit for Cancer Immunotherapy (poster presentation), Halifax, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

    Funding Sources: Cancer Research Society (The) - 19046

114. Presenter: Saturno J Co-authors: van Vloten J, Santry L, Bridle BW. (2016). Temperature as a Confounding Variable in Oncolytic Virotherapy for Canine Melanomas. Ontario Veterinary College - Career Opportunities and Research Experience Program (poster presentation), Guelph, Canada
Main Audience: Researcher
Invited?: No, Keynote?: No

    Funding Sources: National Centre of Excellence in Biotherapies for Cancer Treatment (BioCanRx) - FY16 / ES3

115. Presenter: Mould RC Co-authors: AuYeung WA, Wood G, Wootton SK, Susta L, Petrik JJ, Mustaers A, Bridle BW. (2016). Increasing the Magnitude of Tumour-Specific T Cell Responses by Spreading a Vaccine Dose Across Multiple Injection Sites. Institute for Comparative Cancer Investigation 9th Annual Cancer Research Symposium (poster presentation), Guelph, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

    Funding Sources: Terry Fox Research Institute (TFRI) - 1041

116. Presenter: Saturno J Co-authors: van Vloten J, Santry L, Bridle BW. (2016). Temperature as a Confounding Variable in Oncolytic Virotherapy for Canine Melanomas. 2016 Merial NIH National Veterinary Scholars Symposium (poster presentation), Columbus, United States of America
Main Audience: Researcher
Invited?: Yes, Keynote?: No

Funding Sources: National Centre of Excellence in Biotherapies for Cancer Treatment (BioCanRx) - FY16 / ES3

117. Presenter: AuYeung WA Co-authors: Spangler-Forgione H, Woods JP, Petrik JJ, Wood G, Bridle BW. (2016). Suppression of Oxygen Reactive Species Decreases Melanogenesis Resulting in Melanomas with Reduced Immunogenicity. Summit for Cancer Immunotherapy (poster presentation), Halifax, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

Funding Sources: National Centre of Excellence in Biotherapies for Cancer Treatment (BioCanRx) - FY16 / ES3

118. Presenter: van Vloten J Co-author: Bridle BW. (2016). Fever-Grade Temperatures Attenuate Rhabdovirus-Mediated Oncolysis of Cancer Cells. Institute for Comparative Cancer Investigation 9th Annual Cancer Research Symposium (podium presentation), Guelph, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

Funding Sources: Cancer Research Society (The) - 19046

119. Poster presented by: AuYeung WKA Co-authors: Mould RC, Kim J, Spangler H, Bridle BW. (2015). Mechanisms that Allow Oncolytic Viral Replication Inside a Tumour Despite Pre-Existing Immunity Against a Virus-Encoded Antigen. Summer Research and Leadership Program, Ontario Veterinary College, Guelph, Canada
Main Audience: Researcher
Invited?: No, Keynote?: No

120. Presenter: Matuszewska K Co-authors: Santry L, Petrik J, Bridle BW, Wootton SK. (2015). Combined Vessel Normalization and Oncolytic Virus Therapy in the Treatment of Advanced Stage Ovarian Cancer. Ontario Veterinary College Graduate Student Research Symposium (poster presentation), Guelph, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

121. Presenter: AuYeung WA Co-authors: Mould RC, Spangler H, Kim J, Bridle BW. (2015). Mechanisms that Allow Oncolytic Viral Replication Inside a Tumor Despite Pre-Existing Immunity Against a Virus-Encoded Antigen. Ontario Veterinary College Graduate Student Research Symposium (poster presentation), Guelph, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

Funding Sources: National Centre of Excellence in Biotherapies for Cancer Treatment (BioCanRx) - FY16 / ES3

122. Talk given by: Santry LA Co-authors: van Lieshout L, Au Yeung WKA, Bridle BW, Wootton SK. (2015). Manipulation of Akt Isoform Expression Levels and Their Effect on Transformation by the Jaagsiekte Sheep Retrovirus Envelope Protein. Workshop #22: Retroviruses II, 34th Annual Meeting of the American Society for Virology, London, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

123. Poster presented by: Spangler H* Co-authors: van Vloten J*, Wootton SK, Viloria-Petit A, Bridle BW. (2015). Par6 Influences the Susceptibility of Mammary Carcinoma Cells to Oncolytic Viruses. Summer Research and Leadership Program, Ontario Veterinary College, Guelph, Canada
Main Audience: Researcher
Invited?: No, Keynote?: No

124. Poster presented by: Rasiuk A* Co-authors: Walsh S*, Bridle BW. (2015). The Necessity of the Type I Interferon Receptor in Regulating Cytokines Produced Upon Viral Infection. Poster Session #35: Viruses and Innate and Acquired Immunity, 34th Annual Meeting of the American Society for Virology, London, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

125. (2015). Companion Animal Cancer Biotherapies. The Hamilton Academy of Veterinary Medicine, Hamilton, Canada
Main Audience: Knowledge User
Invited?: Yes, Keynote?: Yes

126. Presenter: Mould R Co-authors: Kim J, Walsh S, de Jong J, Wood G, Wootton S, Susta L, Petrik J, Mutsaers A, Bridle BW. (2015). Combining Virotherapy with Immunotherapy to Treat Osteosarcoma in a Preclinical and Clinical Model. Ontario Veterinary College Graduate Student Research Symposium (poster presentation), Guelph, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

    Funding Sources: Terry Fox Research Institute (TFRI) - 1041

127. Poster presented by: van Vloten JP* Co-authors: Ingrao J, Mould RC*, Bridle BW, Wootton SK. (2015). Assessing the Oncolytic Potential of ORFV Strains In Vitro. Poster Session #12: Oncolytic Viruses and Gene Therapy, 34th Annual Meeting of the American Society for Virology, London, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

128. Presenter: van Vloten J Co-authors: Wootton S, Bridle BW. (2015). Harnessing Immunogenic Cell Death to Potentiate Anti-Cancer Efficacy During ORFV-Induced Oncolysis. Ontario Veterinary College Graduate Student Research Symposium (podium presentation), Guelph, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

    Funding Sources: Cancer Research Society (The) - 19046

129. Poster presented by: Strachan-Whaley MR* Co-authors: AuYeung A*, Kim J*, Bienzle D, Wootton SK, Bride BW. (2015). Using Viruses to Potentiate Epigenetic Modifier-Mediated Killing of Leukemic Cells. Poster Session #12: Oncolytic Viruses and Gene Therapy, 34th Annual Meeting of the American Society for Virology, London, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

130. Presenter: Ingrao J Co-authors: van Vloten J, Shapiro K, Barta J, Menzies P, Bridle BW, Wootton S. (2015). Development of Orf Virus (Parapoxvirus ovis) as a Multivalent Viral Vector Platform Against Toxoplasma gondii. Ontario Veterinary College Graduate Student Research Symposium (poster presentation), Guelph, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

131. Talk given by: Kozak RA Co-authors: Hattin L*, Biondi MJ, Walsh S*, Morgenstern J*, Lusty E*, Chereponov V, McBey B-A, Leishman DP, Feld JJ, Bridle BW, Nagy É. (2015). In Vitro Oncolytic Activity of a Novel Orthoreovirus Against Hepatocellular Carcinoma. Workshop #43: Oncolytic Viruses, 34th Annual Meeting of the American Society for Virology, London, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

132. Poster presented by: Kim J Co-authors: AuYeung A, Deng L, Mould RC, Bridle BW. (2015). Assessment of the Potential to Treat Canine Cancers with an Oncolytic Vaccine. Summer Research and Leadership Program, Ontario Veterinary College, Guelph, Canada
Main Audience: Researcher
Invited?: No, Keynote?: No

133. Presenter: Strachan-Whaley M Co-authors: AuYeung WA, Kim J, Bienzle D, Mutsaers A, Wootton S, Bridle BW. (2015). Combining Oncolytic Viruses with Epigenetic Modifiers as a Novel Therapy for Leukemia. Ontario Veterinary College Graduate Student Research Symposium (poster presentation), Guelph, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

    Funding Sources: Cancer Research Society (The) - 19046

134. (2015). Canine Osteosarcoma Biotherapy: Revolutionizing How Bone Cancers are Treated in Humans. Valérie's Flutter Foundation Gala Dinner, Ottawa, Canada
Main Audience: General Public
Invited?: Yes, Keynote?: Yes

135. Hattin, L.*, Kozak, R., & Bridle, B. W. (2014). Investigation of Recombinant NDV as an Oncolytic Therapy for Prostate Tumors. Poster presented by summer student Larissa Hattin. Summer Research and Leadership Program, Ontario Veterinary College, Guelph, Canada
Main Audience: Researcher
Invited?: No, Keynote?: No

136. Mould, R.*, Walsh, S.*, van Vloten, J.*, Wootton, S., & Bridle, B. W. (2014). Combining Antigen Presenting Cell-Based Vaccination with Oncolytic Viruses for the Treatment of Prostate Cancer Poster presented by summer student Robert Mould (awarded 3rd place).Summer Research and Leadership Program, Ontario Veterinary College, Guelph, Canada
Main Audience: Researcher
Invited?: No, Keynote?: No

137. Kim, J.*, Walsh, S.*, & Bridle, B. W. (2014). Screening Canine Melanoma and Osteosarcoma Specimens for Putative Tumour-Associated Antigen Expression. Poster presented by summer student Julia Kim. Summer Research and Leadership Program, Ontario Veterinary College, Guelph, Canada
Main Audience: Researcher
Invited?: No, Keynote?: No

138. van Vloten, J.*, de Jong, J.*, Rasiuk, A.*, Bridle, B. W., & Wootton, S. (2014). The Generation of Immune-Modulatory Gene-Knockout Orf Virus Recombinants for Use in Oncolytic Virotherapy Poster presented by Jacob Van Vloten. International Union of Microbiological Societies, Montreal, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

139. Kozak, R., Hattin, L.*, Yeung, W. A., Lusty, E.*, Leishman, D., J. Feld, B. W. Bridle, E. Nagy. (2014). A Novel Orthoreovirus as a Potential Therapeutic for Hepatocellular Carcinoma Talk given by Robert Kozak. International Union of Microbiological Societies, Montreal, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

140. Talan, M.*, Tin, B.*, Ternamian, C.*, Syed, Z.*, & Bridle, B. W. (2014). The Effects of Quercetin and Kaempferol on the Cytotoxicity of Carboplatin and Entinostat on Various Cancer Cell Lines Poster presented by Micaella Talan and Brittney Tin. Sanofi BioGENEius Challenge Canada, Toronto, Canada
Main Audience: Researcher
Invited?: No, Keynote?: No

141. Ternamian, C.* & Bridle, B. W. (2014). Oncolytic Rhabdoviruses in Combination with Histone Deacetylase Inhibition Synergistically Kill Murine B Lymphoblastic Leukemia Cells Talk given by Christian Ternamian. Institute for Comparative Cancer Investigation 7th Annual Cancer Research Symposium, Guelph, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

142. Santry, L., Yeung, W. A.*, Bridle, B. W., & Wootton, S. (2014). Function of Akt Isoforms in Transformation by the Jaagsiekte Sheep Retrovirus Envelope Protein Talk given by Lisa Santry. International Union of Microbiological Societies, Montreal, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

143. Kozak, R., Hattin, L.*, Feld, J., Ackford, J., Nagy, E., B. W. Bridle. (2014). Oncolytic Viruses as Therapy for Hepatocellular Carcinoma Poster presented by Robert Kozak. National CIHR Research Training Program in Hepatitis C, 3rd Canadian Symposium on HepC Virus, Toronto, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

144. Syed, Z.*, Walsh, S.*, & Bridle, B. W. (2014). Treating High-Grade Glioma with Oncolytic Virotherapy and Histone Deacetylase Inhibitors Poster presented by Zafir Syed. Institute for Comparative Cancer Investigation 7th Annual Cancer Research Symposium, Guelph, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

145. Walsh, S.*, Rasiuk, A.*, & Bridle, B. W. (2014). Negative Regulation of Cytokine Expression by Type One Interferon Signaling in VSV Infection Poster presented by Scott Walsh. International Union of Microbiological Societies, Montreal, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

146. Van Vloten, J.*, de Jong, J.*, Rasiuk, A.*, Bridle, B. W., & Wootton, S. (2014). The Development of Recombinant Parapoxvirus ovis (OrfV) for Use in Oncolytic Virotherapy. Poster presented by summer student Jacob Van Vloten. Summer Research and Leadership Program, Ontario Veterinary College, Guelph, Canada
Main Audience: Researcher
Invited?: No, Keynote?: No

147. (2014). Treating Feline Mammary Carcinoma With an Oncolytic Vaccine: Companion Animal Trials as a Stepping Stone Towards Successful Translation into Human Patients. Cancer Grand Rounds at Western University, London, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

148. (2013). A Novel Barrier to Cancer Immunotherapy in the Brain. Talk in the speed-poster session of the 6th annual meeting of the Canadian Cancer Immunotherapy Consortium; plus a poster presentation., Toronto, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No, Competitive?: No

149. Poster presentation by my MSc student, Zafir Syed* Co-author: B. Bridle. (2013). Oncolytic Immunotherapy for the Treatment of High-Grade Glioma. Graduate Research Symposium, Ontario Veterinary College, University of Guelph, Guelph, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

150. A poster presented by my MSc student, Christian Ternamian* Co-author: B. Bridle. (2013). Synergizing Oncolytic Virotherapy and HDAC Inhibition in a Murine Model of B-Cell Lymphoblastic Leukemia. Graduate Research Symposium, Ontario Veterinary College, University of Guelph, Guelph, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

151. This was a talk given by my fourth-year research project student, Evan Lusty* Co-author: B. Bridle. (2013). Characterizing Oncolytic Viruses, Toll-Like Receptor Ligands and Histone Deacetylase Inhibitors in the In Vitro Treatment of Human Prostate Cancer. 6th Annual Cancer Research Symposium, Institute for Comparative Cancer Investigation, Guelph, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

152. (2013). Tumour Immunology. Seminar presentation in the Cancer Biology rounds, Clinical Oncology Group, University of Guelph, Guelph, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

153. A poster presented by my undergraduate research assistant, Wing Ka Au Yeung* Co-author: B. Bridle. (2013). Development of a Flow Cytometry-Based Immunological Assay to Support Pre-Clinical and Clinical Companion Animal Cancer Trials. Ontario Veterinary College's Summer Leadership and Research Program, poster presentations., Guelph, Canada
Main Audience: Researcher
Invited?: No, Keynote?: No

154. Poster presentation by my undergraduate research associate, Evan Lusty* Co-presenter: Jason Morgenstern* Co-author: B. Bridle. (2012). Establishment of Leukemia/Lymphoma Cell Lines from Clinical Specimens and Evaluation of Their Susceptibility to Oncolytic Viruses.Summer Leadership and Research Program, Ontario Veterinary College, University of Guelph, Guelph, Canada
Main Audience: Researcher
Invited?: No, Keynote?: No

155. (2012). Replication-Deficient Adenovirus and Oncolytic Rhabdoviruses as Cancer Vaccines. Keynote speaker at symposium entitled "Viral delivery and nanoparticle vectors" organized by students in Molecular Virology (MICR*4330) course, University of Guelph., Guelph, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: Yes, Competitive?: No

156. (2012). Paradoxically, Immunotherapy Might be More Efficacious When Tumours are Inside the Brain. Plenary talk at the "Modelling Cancer In Vivo, In Vitro and In Silico" session of the Institute for Comparative Cancer Investigation 4th Annual Cancer Research Symposium, University of Guelph., Guelph, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No, Competitive?: Yes

157. Poster presentation by my undergraduate research assistant, Jason Morgenstern* Co-presenter: Evan Lusty* Co-author: B. Bridle. (2012). Using an Innate Anti-Viral Immune Response in the Presence of a Histone Deacetylase Inhibitor to Treat Leukemias. Summer Leadership and Research Program, Ontario Veterinary College, University of Guelph, Guelph, Canada
Main Audience: Researcher
Invited?: No, Keynote?: No

158. (2012). Using Oncolytic Viruses to Potentiate Immunotherapy for Childhood Cancers. Talk given at the Canadian Oncolytic Virus Consortium Annual Meeting, Lake Cecebe, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No, Competitive?: No

159. Poster presentation by B. Bridle Co-authors: Chantal Lemay, Jean-Simon Diallo, Lan Chen, Jonathan Pol, Andrew Nguyen, Jonathan Bramson, John Bell, Brian Lichty and Yonghong Wan. (2011). A Histone Deacetylase Inhibitor Dramatically Improves the Therapeutic Index of an Oncolytic Vaccine by Augmenting Anti-Tumour Activity While Inhibiting Autoimmune Sequellae. CIHR New Principal Investigators Meeting, Toronto, Canada
Main Audience: Researcher
Invited?: No, Keynote?: No

160. Poster presentation by Jonathan Pol Co-authors: Byram Bridle, Liang Zhang, Stephen Hanson, Natasha Kazdhan, Jonathan Bramson, David Stojdl, Yonghong Wan, Brian Lichty. (2011). Maraba virus: a new vector for oncolytic viro-immunotherapy.6th International Conference on Oncolytic Viruses as Cancer Therapeutics, Las Vegas, United States of America
Main Audience: Researcher
Invited?: No, Keynote?: No

161. Poster presentation by Jonathan Pol Co-authors: Byram Bridle, Liang Zhang, Stephen Hanson, Natasha Kazdhan, Jonathan Bramson, David Stojdl, Yonghong Wan, Brian Lichty. (2011). Maraba virus: a new vector for oncolytic viro-immunotherapy.14th Annual Meeting of the Translational Research Cancer Centers Consortium, Seven Springs, United States of America
Main Audience: Researcher
Invited?: No, Keynote?: No

162. (2011). Oncolytic Vaccines: the Billion Dollar Idea. Seminar Series, Ottawa Hospital Research Institute, Ottawa, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No, Competitive?: No

163. (2011). A Histone Deacetylase Inhibitor Dramatically Improves the Therapeutic Index of an Oncolytic Vaccine by Augmenting Anti-Tumour Activity While Inhibiting Autoimmune Sequella. Talk given in the concurrent symposium "Personalized Medicine: From Discovery and Validation to Implementation", 1st Annual Canadian Cancer Research Conference., Toronto, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No, Competitive?: Yes

164. (2011). Rapid and Massive Boosting of Tumour-Specific T Cells by Targeting Antigen Presentation to Follicular B Cells. Concurrent session, 14th Annual Meeting of the Translational Research Cancer Centers Consortium., Seven Springs, United States of America
Main Audience: Researcher
Invited?: Yes, Keynote?: No, Competitive?: Yes

165. (2011). Immunoediting and Immunotherapy of Cancers. Seminar presentation in the Cancer Biology rounds, Clinical Oncology Group, University of Guelph, Guelph, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No, Competitive?: No

166. (2010). Antigen Presentation by B Cells Maximizes Secondary T Cell Number and Quality: Implications for Booster Vaccines. 1st Annual McMaster University Faculty of Health Sciences Post-Doctoral Research Day (received award for best presentation), Hamilton, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No, Competitive?: Yes

167. Poster presented by Liang Zhang. Co-authors: Byram Bridle, Jonathan Pol, Allison Rosen, Jonathan Bramson, Brian Lichty, Yonghong Wan. (2010). Virus infected B cells are potent antigen presenting cells.3rd Annual Cancer Immune Therapy Symposium, Niagara Falls, Canada
Main Audience: Researcher
Invited?: No, Keynote?: No

168. Poster presented by Stephen Hanson. Co-authors: Byram Bridle and Brian Lichty. (2010). The placenta specific gene Plac1 is a potential target for therapeutic cancer vaccines.Ontario Institute for Cancer Research Annual Meeting, Alliston, Canada
Main Audience: Researcher
Invited?: No, Keynote?: No

169. Additional co-chair: Tommy Alain, McGill University. (2010). Improving the Therapeutic Index of Cancer Immunotherapy With A Histone Deacetylase Inhibitor Also, was the session co-chair, leading a discussion on the viro- vs. immune-centric approach to oncolytic virotherapy.Ontario Regional Biotherapeutics Program, 2nd Annual Scientific Retreat, Haliburton, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No, Competitive?: No

170. (2010). Fine-Tuning Oncolytic Immunovirotherapy With A Histone Deacetylase Inhibitor. Meeting of the Canadian Oncolytic Virus Consortium, Montreal, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No, Competitive?: No

171. Oral presentation by Brian Lichty. Co-authors: Byram Bridle, K. Stephenson, J. Boudreau, S. Koshy, N. Kazdhan, E. Pullenayegum, J. Brunellière, J. Bramson and Y. Wan. (2010). Potentiating cancer immunotherapy using an oncolytic virus.4th European Congress of Virology, Cernobbio, Italy
Main Audience: Researcher
Invited?: Yes, Keynote?: No

172. Poster presented by Jonathan Pol. Co-authors: Byram Bridle, Natasha Kazdhan, Jonathan Bramson, David Stojdl, Yonghong Wan, Brian Lichty. (2010). Maraba virus: a new oncolytic vaccine vector.Ontario Institute for Cancer Research Annual Meeting, Alliston, Canada
Main Audience: Researcher
Invited?: No, Keynote?: No

173. (2010). Antigen Presentation by B Cells Maximizes Secondary T Cell Number and Quality: Implications for Booster Vaccines. 1st session, 3rd Annual Meeting of the Canadian Cancer Immunotherapy Consortium, Niagara Falls, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No, Competitive?: Yes

174. (2010). Fine-Tuning Oncolytic Immunovirotherapy with a Histone Deacetylase Inhibitor. Concurrent session, Annual Meeting, Ontario Institute for Cancer Research, Alliston, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No, Competitive?: Yes

175. Poster presented by Liang Zhang. Co-authors: Byram Bridle, Jonathan Pol, Allison Rosen, Jonathan Bramson, Brian Lichty, Yonghong Wan. (2010). Virus infected B cells are potent antigen presenting cells.23rd Annual Meeting of the Canadian Society for Immunology, Niagara Falls, Canada
Main Audience: Researcher
Invited?: No, Keynote?: No

176. (2009). Treating Brain Cancer with Immunotherapy and Oncolytic Viruses. Research Seminar Series, Central Animal Facility, McMaster University, Hamilton, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No, Competitive?: No

177. Poster Presentation by B. Bridle Co-authors: Kyle Stephenson, Jeanette Boudreau, Sandeep Koshy, Natasha Kazdhan, Jonathan Bramson, Brian Lichty and Yonghong Wan. (2009). Potentiating cancer immunotherapy using an oncolytic virus.McMaster Industry Liaison Office Innovation Showcase, Hamilton, Canada
Main Audience: Knowledge User
Invited?: Yes, Keynote?: No

178. Jean-Simon Diallo, Ottawa Hospital Research Institute. (2009). Session Co-Chair; Led a discussion on: Combination Cancer Treatment Strategies. Ontario Regional Biotherapeutics Program, 1st Annual Scientific Retreat, Haliburton, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No, Competitive?: No

179. Poster presentation. Co-presenters: Kyle Stephenson, Jeanette Boudreau, Sandeep Koshy, Natasha Kazdhan, Jerome Brunellière, Jonathan Bramson, Brian Lichty B and Yonghong Wan. (2009). Embracing anti-viral immunity to make an oncolytic vector more effective.The 5th International Meeting on Replicating Oncolytic Virus Therapeutics, Banff, Canada
Main Audience: Researcher
Invited?: No, Keynote?: No

180. Poster Presentation by B. Bridle Co-authors: Ruby Chang, Brian Lichty, Shucui Jiang, jonathan Bramson and Yonghong Wan. (2009). Immunotherapy can reject intracranial tumour cells without overt damage to the brain despite sharing the target antigen.Ontario Institute for Cancer Research Annual Meeting, Alliston, Canada
Main Audience: Researcher
Invited?: No, Keynote?: No

181. Poster presentation given by Jeanette Boudrea. Co-authors: Kyle Stephenson, Patrick Palidino, Byram Bridle, Brian Lichty, Jonathan Bramson and Yonghong Wan. (2009). Activation of natural killer cells by dendritic cell vaccines is strongly influenced by maturation protocol and plays a key role in determining cancer therapeutic efficacy.Ontario Institute for Cancer Research Annual Meeting, Alliston, Canada
Main Audience: Researcher
Invited?: No, Keynote?: No

182. Oral presentation given by Brian Lichty. Co-authors: Byram Bridle, Kyle Stephenson, Jeanette Boudreau, Sandeep Koshy, Natasha Kazdhan, Jerome Brunellière, Jonathan Bramson and Yonghong Wan. (2009). Vaccinating against an oncolytic virus can enhance therapy.Plenary Session, The 5th International Meeting on Replicating Oncolytic Virus Therapeutics, Banff, AB, 2009, Banff, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No

183. (2008). Combining Cancer Vaccination with Viral Oncolysis to Maximize Tumour Destruction. Ottawa Hospital Research Institute Seminar Series, Ottawa, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No, Competitive?: No

184. (2008). Combining Immunological and Oncolytic Virotherapy to Treat Brain Cancer. Infection and Immunity Seminar Series, McMaster University, Hamilton, Canada
Main Audience: Researcher
Invited?: Yes, Keynote?: No, Competitive?: No

## Broadcast Interviews

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| 2021/05/01 | Since May 2021, I have engaged in ~150 additional media commitments related to COVID-19. (I have not had time to delineate the details of each of these service commitments but most are publicly available via internet searches) |

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| 2021/04/07 | Decisions Made by the National Advisory Committee on Immunization Re: COVID-19 Vaccines, Interviewed by host Alex Pierson for the ON Point radio show, AM640 Toronto |
| 2021/04/01 | Transmission of SARS-CoV-2 Via Aerosols, Interviewed by host Arlene Bynaon for the ON Point radio show, AM640 Toronto |
| 2021/03/25 | COVID-19 Vaccine Hesitancy, Interviewed by host Alex Pierson for the ON Point radio show, AM640 Toronto |
| 2021/03/23 | Risk of Damage to Children's Immune Systems Due to Prolonged COVID-19 Policy-Mandated Isolation, Interviewed by host Alex Pierson for the ON Point radio show, AM640 Toronto |
| 2021/03/16 | Risk of Damage to Children's Immune Systems Due to Prolonged COVID-19 Policy-Mandated Isolation, Interviewed by host Mike Stubbs for Global News Radio London (980 CFPL). |
| 2021/03/12 | Risk of Damage to Children's Immune Systems Due to Prolonged COVID-19 Policy-Mandated Isolation, Interviewed by host Shayne Ganam for 770CHQR Global News, Calgary. |
| 2021/03/12 | Risk of Damage to Children's Immune Systems Due to Prolonged COVID-19 Policy-Mandated Isolation, Interviewed by host Alex South for Sputnik Radio in Edinburgh, Scotland |
| 2021/03/11 | A year of COVID-19 lockdown is putting kids at risk of allergies, asthma and autoimmune diseases, 570 News Talk Radio (Kitchener, Ontario, Canada) I was interviewed by host Brian Burke. |
| 2021/03/11 | A year of COVID-19 lockdown is putting kids at risk of allergies, asthma and autoimmune diseases, CTV National News Interviewed by Merella Fernandez for the national news show. |
| 2021/03/11 | A year of COVID-19 lockdown is putting kids at risk of allergies, asthma and autoimmune diseases, CTV News Kitchener I was interviewed by host Carmen Wong for the local news show. |
| 2021/03/09 | 5 factors that could dictate the success or failure of the COVID-19 vaccine rollout, 106.5 ELMNT FM Toronto/95.7 ELMNT FM Ottawa I was interviewed by host David Moses for a show called "Moment of Truth". |
| 2021/02/22 | Byram Bridle, Associate Professor of Viral Immunology at the University of Guelph talks to Peter about the COVID vaccine, Magic Talk radio program, New Zealand, https://www.magic.co.nz/home/news/2021/02/byram-bridle--associate-professor-of-viral-immunology-at-the-uni.html, Peter Williams |
| 2021/02/18 | 5 factors that could dictate the success or failure of the COVID-19 vaccine rollout, Magic Talk Radio, Mediaworks, New Zealand I was interviewed live on air by host Peter Williams |
| 2021/02/12 | 5 factors that could dictate the success or failure of the COVID-19 vaccine rollout, 570 News Talk Radio (Kitchener, Ontario, Canada) Interviewed live on radio by host Mike Farwell |
| 2020/12/14 | The mink link: How COVID-19 mutations in animals affect human health and vaccine effectiveness, CBC Radio, Windsor, Ontario I was interviewed on radio. |
| 2020/12/14 | The mink link: How COVID-19 mutations in animals affect human health and vaccine effectiveness, CBC Radio, Peterborough/Kingston/Barrie, Ontario I was interviewed on the "Ontario Morning" radio show. |

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| 2020/12/14 | The mink link: How COVID-19 mutations in animals affect human health and vaccine effectiveness, ELMNT FM Radio, 106.5 FM in Toronto and 95.7 FM in Ottawa I was interviewed on the David Moses talk show. |
| 2020/12/14 | The mink link: How COVID-19 mutations in animals affect human health and vaccine effectiveness, CBC Radio, Toronto, Ontario I was interviewed on radio. |
| 2020/12/14 | The mink link: How COVID-19 mutations in animals affect human health and vaccine effectiveness, CBC Radio, London, Ontario I was interviewed on radio. |
| 2020/12/14 | The mink link: How COVID-19 mutations in animals affect human health and vaccine effectiveness, CBC Radio, Sudbury, Ontario I was interviewed on radio. |
| 2020/12/14 | The mink link: How COVID-19 mutations in animals affect human health and vaccine effectiveness, CBC Radio, Sudbury, Ontario I was interviewed on radio. |
| 2020/12/14 | Article title: The mink link: How COVID-19 mutations in animals affect human health and vaccine effectiveness, CBC Radio, Kitchener, Ontario I was interviewed on radio. |
| 2020/11/25 | The mink link: How COVID-19 mutations in animals affect human health and vaccine effectiveness, CBC Radio, Sudbury, Ontario I was interviewed by host Jonathan Pinto on the "Up North" program. |
| 2020/11/25 | The mink link: How COVID-19 mutations in animals affect human health and vaccine effectiveness, CBC Radio, Montreal, Quebec I was interviewed by host Sabrina Marandola on the "Let's Go" program. |
| 2020/11/25 | The mink link: How COVID-19 mutations in animals affect human health and vaccine effectiveness, CBC Radio, Vancouver, British Columbia I was interviewed by host Gloria Macarenko on the "On the Coast" program. |
| 2020/11/25 | The mink link: How COVID-19 mutations in animals affect human health and vaccine effectiveness, CBC Radio, London/Windsor, Ontario I was interviewed by host Chris dela Torre on the "Afternoon Drive" program. |
| 2020/11/25 | The mink link: How COVID-19 mutations in animals affect human health and vaccine effectiveness, CBC Radio, Whitehorse, Yukon I was interviewed by host Dave White on the "Airplay" program. |
| 2020/11/25 | The mink link: How COVID-19 mutations in animals affect human health and vaccine effectiveness, UK Radio, Radio Sputnik, Edinburgh, Scotland I was interviewed by host Alex South. |
| 2020/11/25 | The mink link: How COVID-19 mutations in animals affect human health and vaccine effectiveness, CBC Radio, Saskatchewan I was interviewed by host Garth Materie on the "Afternoon Edition" program. |
| 2020/11/25 | The mink link: How COVID-19 mutations in animals affect human health and vaccine effectiveness, CBC Radio, Winnipeg, Manitoba I was interviewed on the "Up to Speed" program. |
| 2020/10/12 - 2020/10/12 | "U of G Covid Vaccine Research", https://www.facebook.com/uofguelph/videos/u-of-g-covid-vaccine-research/274022033801852/, Facebook video |
| 2020/10/10 - 2020/10/10 | "Training our immune systems: Why we should insist on a high-quality COVID-19 vaccine", Interviewed live on-air (two time slots) for 'Weekend Mornings on CKNW" by host Stirling Faux, CKNW Radio, Vancouver, BC |
| 2020/10/08 - 2020/10/08 | "Training our immune systems: Why we should insist on a high-quality COVID-19 vaccine", Interviewed live on-air by host Brian Bourke, 570 News Talk Radio (Kitchener, Ontario, Canada) |

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| 2020/08/16 - 2020/08/16 | "Fast COVID-19 vaccine timelines are unrealistic and put the integrity of scientists at risk", Interviewed by Miriam Harris for a radio show, Newshub in Auckland, New Zealand |
| 2020/08/16 - 2020/08/16 | "COVID-19 Vaccines:<?>Facts to Inform Policies", https://www.youtube.com/watch?v=HndetYzK8gU, New Zealand's COVID-19 Science and Policy Symposium |
| 2020/08/05 - 2020/08/05 | "Why vaccines are less effective in the elderly, and what it means for COVID-19", Interviewed live on-air on the Mike Farwell show, 570 News Talk Radio (Kitchener, Ontario, Canada) |
| 2020/07/29 - 2020/07/29 | "Why vaccines are less effective in the elderly, and what it means for COVID-19", Interviewed live on-air by host Scott Radley, 900 CHML (radio station in Hamilton, Ontario, Canada) |
| 2020/07/27 - 2020/07/27 | "Why vaccines are less effective in the elderly, and what it means for COVID-19", Interviewed live on air by host Jill Bennett, NewsTalk 980 CKNW, Vancouver (radio) |
| 2020/07/13 - 2020/07/13 | "Fast COVID-19 vaccine timelines are unrealistic and put the integrity of scientists at risk", Interviewed by host David Moses for a second, follow-up talk show, ELMNT FM Radio; 106.5 FM in Toronto and 95.7 FM in Ottawa |
| 2020/07/07 - 2020/07/07 | "Fast COVID-19 vaccine timelines are unrealistic and put the integrity of scientists at risk", Interviewed by host David Moses for a talk show, ELMNT FM Radio; 106.5 FM in Toronto and 95.7 FM in Ottawa |
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| 2020/06/22 - 2020/06/22 | "Fast COVID-19 vaccine timelines are unrealistic and put the integrity of scientists at risk", Interviewed live on-air by host Devon Peacock, Global News Radio 980 CFPL (London, Ontario, Canada) |
| 2020/06/21 - 2020/06/21 | "Fast COVID-19 vaccine timelines are unrealistic and put the integrity of scientists at risk", Interviewed by Mercedes Stephenson (https://globalnews.ca/video/7088465/short-timelines-for-coronavirus-vaccine-are-giving-people-false-hope-bridle), The West Block (Global National News) |
| 2020/06/18 - 2020/06/18 | "Fast COVID-19 vaccine timelines are unrealistic and put the integrity of scientists at risk", Live on-air interview with host Kristy Cameron, CFRA 580 News Talk Radio (Ottawa, Ontario, Canada) |
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# Publications

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## Books

1. By Byram Bridle, PhD, and Harvey Risch, MD, PhD With: Matt Bain, MD Steven Hatfill, MD, MSc, MSc, MMed Peter A. McCullough, MD, MPH Jane Orient, MD Jessica Rose, PhD Josh Stirling, MBA James Thorp, MD Kelly Victory, MD David Wiseman, PhD, MRPharmS Martin Wucher, DDS. (2024). Toxic Shot: Facing the Dangers of the COVID "Vaccines". : 350.
First Listed Author
Published,
Refereed?: No
Number of Contributors: 12
Description of Contribution Role: Lead author.
Description / Contribution Value: Along with Professor of Epidemiology Harvey Risch from Yale University, I was asked to take the co-lead in writing a book outlining the scientific truths underpinning COVID-19 vaccines. This was in recognition of the fact that I was willing to speak early and often about the fact that the shots were not entirely "safe and effective". More importantly, it recognizes that my concerns were ultimately supported by the overwhelming weight of the scientific evidence. Among many examples, this included my early warning that the modified RNA shots might cause the serious adverse event of myocarditis. Written by genuine subject matter experts, this book presents the scientific truths about the COVID-19 shots and shatters the official public narrative, which was justified with mis- and dis-information and by withholding information. The book promotes the precautionary principle, medical autonomy, and facilitates genuine informed consent.

2. (2024). Canary in a Covid World: How Money, Fear and Power Converged to Reset Our World.
Co-Author
In Press,
Refereed?: No
Description of Contribution Role: I authored a chapter in the book entitled "PublicHealth Officials Broke Public Trust Through Deception".
Description / Contribution Value: This book recognizes the fact that I was among relatively few subject matter experts to question the COVID-19 narrative early on. It also recognizes that the overwhelming weight of the scientific evidence proved that my concerns were correct. In honour of my public service as a 'canary in a coal mine' to provide early warning signals that COVID-19 vaccines were not entirely "safe and effective", I was invited to contribute a chapter. My chapter provides definitive proof that public health officials withheld information about COVID-19 vaccines that was critical to support informed consent. It even shows how the public promotion of COVID-19 vaccines for pregnant women involved bald-faced lying. Overall, the book shows how the overall weight of the primary scientific data shatters the official narrative about COVID-19. The book facilitates true informed consent for the public.

## Book Chapters

1. Waito M, WALSH SCOTT R, RASIUK ALEXANDRA, Bridle Byram W, Willms A. (Dr. Bridle's HQP in capital letters). (2016). A Mathematical Model of Cytokine Dynamics During a Cytokine Storm. Bélair J, Frigaard IA, Kunze H, Makarov R, Melnik R, Spiteri RJ. Mathematical and Computational Approaches in Advancing Modern Science and Engineering. : pp 331-339.
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Funding Sources: Natural Sciences and Engineering Research Council of Canada (NSERC) - 436264-2013

## Encyclopedia Entries

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24. First Listed Author. Byram W. Bridle. A Look Inside a COVID-19 Masking Case. (2022).
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28. First Listed Author. Byram W. Bridle. The Real Anthony Fauci: The Movie. (2022).
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### Conference Publications

1. Waito M, WALSH SCOTT R, RASIUK ALEXANDRA, Bridle Byram W, Willms AR (Dr. Bridle's HQP in capitals). (2015). A Mathematical Modelof Cytokine Dynamics During a Cytokine Storm. Proceedings of the joint international meeting of Applied Mathematics, Modeling and Computational Sc. Joint international meeting of Applied Mathematics, Modeling and Computational Science and The Canadian Applied and Industrial Mathematics Society, Waterloo, Canada,
   Conference Date: 2015/6
   Paper
   Co-Author
   Submitted
   Refereed?: Yes, Invited?: No

   Funding Sources: Natural Sciences and Engineering Research Council of Canada (NSERC) - 436264-2013

## Intellectual Property

### Patents

1. Engineered Newcastle Disease Virus Vector and Uses Thereof. . 2022/06/03.
   Patent Status: Pending
   Inventors: Sarah Wootton, Leonardo Susta, BYRAM BRIDLE, Pierre Major, Lisa Santry, Yanlong Pei
   A fully synthetic viral vector for use as an oncolytic virus and vaccine platform, including for use as a vaccine against SARS-CoV-2 for the prevention of COVID-19.
2. ONCOLYTIC VIRUSES WITH REPLICATIVE ABILITY AT TEMPERATURES HIGHER THAN WILDTYPE AND USES THEREOF. United States of America. Provisional Application No. 62/976,616. 2020/02/21.
   Patent Status: Pending
   Inventors: Byram W. Bridle Jacob P. van Vloten
   Describes two novel oncolytic rhabdoviruses with superior oncolytic activity at temperatures above 37oC as compared to the parental viruses. Also describes a method to generate these types of viruses. This will enhance efficacy of oncolytic rhabdoviruses in tumours that are at higher temperatures than ambient tissues and in human patients that develop fevers (a common response to this therapy) and in veterinary patients whose normal body temperatures are >37oC.
3. AVIAN ONCOLYTIC VIRUS HAVING MODIFIED SEQUENCES AND USES THEREOF. United States of America. 2018/12/14.
   Patent Status: Pending
   Inventors: KOZAK; Robert; (London, CA) ; BRIDLE; Byram; (Guelph, CA) ; NAGY; Eva; (Puslinch, CA) ; THOMPSON; Bradley; (Calgary, CA)
   The present disclosure relates to one or more modified avian-virus based agents, therapies, treatments, and methods of use of the modified avian-virus based agents and/or therapies and/or treatments for cancer. The disclosure also provides for methods of generating modified avian-virus based agents. One of the five claims is particularly notable: "The oncolytic agent of claim 1, where the modified avian virus is one of an avian pox virus, an avian reovirus, a Newcastle's disease virus, a duck hepatitis virus, an infectious bursal disease virus, a chicken parvovirus and a combination thereof."
4. A METHOD OF VACCINATION COMPRISING A HISTONE DEACETYLASE INHIBITOR. Canada. International Application No.: PCT/CA2012/000212. 2012/09/03.
   Patent Status: Pending
   A vaccination method is provided. The method comprises administering to a mammal a histone deacytelase inhibitor in conjunction with a vaccine that expresses an antigen to which the mammal has a pre-existing immunity.

   Funding Sources: Canadian Institutes of Health Research (CIHR) - MOP-67066

5. VACCINATION METHODS. Canada. PCT/CA2010/000379. 2011/09/16.
Patent Status: Pending
In one aspect, a method of treating cancer in a mammal is provided. The method comprises administering to the mammal an oncolytic vector that expresses a tumour antigen to which the mammal has a pre-existing immunity. In another aspect, a method of boosting immune response in a mammal having a pre-existing immunity to an antigen is provided comprising intra-venous administration to the mammal of a B-cell infecting vector that expresses the antigen.

Funding Sources: Canadian Institutes of Health Research (CIHR) - MOP-67066

## Disclosures

1. Heat-Adapted Maraba Virus for Treating Cancers
Disclosed
Filing Date: 2019/08/09
An application was submitted to patent a novel oncolytic virus. There is one other co-inventor (my PhD student Jacob van Vloten).

2. Quantifying Antigen-Specific T-Cell Responses When Using Antigen-Agnostic Immunotherapies
Disclosed
Filing Date: 2019/07/05
A report of invention for a novel method to quantify T cell responses was submitted to the intellectual property office at the University of Guelph. There is one other co-inventor (my PhD student Jacob van Vloten).

3. Quantifying Antibody Responses Induced by Antigen-Agnostic Immunotherapies
Disclosed
Filing Date: 2019/07/05
A report of invention for a novel method to quantify antibody responses was submitted to the intellectual property office at the University of Guelph. There is one other co-inventor (my PhD student Jacob van Vloten).

4. Avian Orthoreovirus Strain PB1: A Novel Oncolytic Virus
Disclosed
Filing Date: 2019/02/05
An application was submitted to patent a novel oncolytic virus. There are two other co-inventors (research collaborators).

5. Combining Epigenetic Modifiers with Oncolytic Viruses for the Treatment of Leukemias
Disclosed
Filing Date: 2018/03/21
A report of invention was submitted to the University of Guelph's intellectual property office. There are four other co-inventors (all former students of mine; Megan Strachan-Whaley, Christian Ternamian, Jason Morgenstern and Evan Lusty).

6. Avian orthoreovirus (ARV) strain PB1: a potential oncolytic, vaccine and adjuvant
Disclosed
Filing Date: 2014/01/31