Alyson A. Kelvin, Ph.D.
Associate Professor
University of Calgary
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Updated February 2025

Education

Ph.D.	**Queen's University, Belfast, United Kingdom** Centre for Infection and Immunity	**2007**
Thesis Title	*DUB3/USP17 regulates cell growth and movement, and Ras-like GTPase processing and activation.*	
H.B.Sc.	**Western University, London, Ontario**	**2003**
Concentration	Cell Biology	

Current Position

Associate Professor with Tenure	**University of Calgary** Faculty of Veterinary Medicine	**2025 –**

I. PERSONAL STATEMENT AND RESEARCH PROGRAM

The overall goal of my research program is to prevent viral pandemics and epizootics in humans and animals by understanding the biology of emerging viruses to develop broadly protective universal vaccines. To meet this goal, my research strategy leverages a One Health by studying emerging viruses in the animal reservoir, intermediate animal hosts, as well as incidental hosts such as people. Projects within my program including: 1.) Virus Surveillance – to determine what is the diversity of viruses that may emerge; 2.) Risk Assessment – to determine if these viruses will spillover and cause disease; 3.) Immune Protection and Vaccine Design – to understand immune memory to viruses and how to induce broadly protective responses. Understanding the viral diversity, the potential risk, and immunogenicity of emerging viruses ensures that universal vaccines that are developed will elicit long-lasting broadly protective immunity against large groups of related viruses that threaten the health of humans or animals.

I have extensive experience working with emerging viruses of high consequence. Specifically, I been involved in research and responses to several high-profile emerging viruses including pandemic influenza (H1N1), avian influenza viruses (H7N9, H5N1, and others), vector borne viruses (Chikungunya virus and Zika virus), Clade 1 and 2 Mpox viruses (formerly monkeypox virus), and coronaviruses (SARS-CoV and SARS-CoV-2).

My work has led to important discoveries and model development in the fields of viral immunology and vaccinology. Importantly, I have developed preclinical models (ferrets, Syrian hamsters, and mice) for several emerging viruses including SARS-CoV-2, pandemic H1N1, and Zika virus. These models, which were developed quickly, have been used to understand viral pathogenesis and evaluate novel vaccines during times of emergency. I have also identified new modes of transmission for H1N1 through breastfeeding and avian influenza virus H7N9 by aerosols. My work on the Chikungunya virus outbreak in Italy led to the first characterization of host immune mediators implicated in acute and chronic CHIKV disease. My research and expert commentaries have been covered by major news agencies such as the BBC, The Washington Post, and CBC's Quirks and Quarks.

II. POSITIONS AND APPOINTMENTS

Associate Professor, Tenure **2025 –**
Faculty of Veterinary Medicine
University of Calgary
Calgary, Alberta

Adjunct Professor **2021 –**
Department of Biochemistry, Microbiology, and Immunology
University of Saskatchewan
Saskatoon, Saskatchewan

Adjunct Professor **2021 –**
Department of Microbiology and Immunology
Dalhousie University
Halifax, Nova Scotia

Scientist II **2020 – 2025**
VIDO-InterVac
Saskatoon, Saskatchewan

Assistant Professor **2018 – 2021**
IWK Health Centre
Department of Pediatrics
Halifax, Nova Scotia

Cross-appointed **2018 – 2021**
Department of Microbiology and Immunology
Dalhousie University
Halifax, Nova Scotia

Research Scientist **2010 – 2017**
Immune Diagnostics and Research, IDR
Toronto, Canada

Visiting Professor **2009 – 2010**
University of Sassari
Sassari, Italy

Scientific Projects Director/Postdoctoral Fellow **2008 – 2010**
Sardinia Research and Development, SaRD, srl
Alghero, Italy

III. AWARDS AND HONOURS

Richard F. Lockey Award from AAAAI **2024-2025**
American Academy of Allergy Asthma & Immunology (AAAAI)
To be awarded in San Diego, USA
28 February to 3 March

APSselect Award **2023**
Article Chosen for Award by American Physiological Society
Sex differences in the cardiac stress response following SARS-CoV-2 infection of ferrets
Podcast coverage: https://ajpheart.podbean.com/e/cardiac-sex-differences-and-covid/

Nominated for the Royal Society of Canada **2022**
Nominated by the University of Saskatchewan
December 2022

Canadian Society for Virology Early Career Award of Excellence **2022**
Canadian Society for Virology (CSV)
Awarded at the 4th Symposium of the CSV
University of Alberta
June 5-7, 2022

Dr. Timothy D. G. Lee Teaching Award **2021**
Department of Microbiology and Immunology
Dalhousie University

Emerging Professional Award Finalist **2020**
Discovery Centre, Halifax, Nova Scotia

Early Career Research Excellence Award **2020**
Dalhousie University, Faculty of Medicine Award

Article Chosen as Featured Research by PLOS Pathogens and for Press Release **2015**
Influenza Transmission in the mother-Infant Dyad Leads to Severe Disease, Mammary Gland Infection, and Pathogenesis by Regulating Host Responses

Article Chosen for the 'Essential Collection: Virology Editors' Selection 2013' **2013**
Pandemic H1N1 influenza A directly induces a robust and acute inflammatory gene signature in primary human bronchial epithelial cells downstream of membrane fusion.

Highlighted Article in 'Virology,' January 2014 **2014**
Pandemic H1N1 influenza A directly induces a robust and acute inflammatory gene signature in primary human bronchial epithelial cells downstream of membrane fusion.

Dorothy Price Prize, Immunology Master Class **2006**
Irish Society of Immunology

Poster Prize **2005**
American Society of Biochemistry and Molecular Biology, ASBMB
FASEB Experimental Biology Conference, San Diego, USA

Overseas Research Studentship (ORS) **2004 – 2007**
British Federal Government, UK

Faculty of Medicine and Health Sciences Prize **2003 – 2006**
Queen's University, Belfast, UK

Faculty of Medicine and Health Sciences PhD Studentship **2003 – 2006**
Queen's University, Belfast, UK

Ontario Government Studentship in Science and Technology (OGSST) **2003**
Ontario Provincial Government, Canada

Life Science Award **2003**
Department of Immunology
University of Toronto, Toronto, Canada

Dean's Honor List **1999 – 2003**
Western University, London, Canada

Entrance Scholarship **1999**
Western University, London, Canada

IV. GRANT AND CONTRACT FUNDING

- **Canadian Institutes of Health Research (CIHR): Catalyst Grant: Avian Influenza OneHealth Research.**
  Leveraging the Ferret Model for understanding H5N1 2.3.4.4b virus pathogenesis in preimmune populations and mammary glands
  $150,000
  Role: Nominated Principal Applicant
  Status: Awarded
  August 2024 to July 2025

- **Canadian Institutes of Health Research (CIHR) Project Grant.** *Regulation of coronavirus cross-reactivity and immune durability for pan-coronavirus vaccine*
  $906,526
  Role: Nominated Principal Applicant
  Status: Awarded
  October 2023 to September 2028

- **Canadian Institutes of Health Research (CIHR) Project Grant: Pandemic Preparedness and Health Emergencies Research.** *Understanding mechanisms coronavirus cross-reactivity, immune durability, and pan-coronavirus vaccine protection.*
  $100,000.00
  Role: Nominated Principal Applicant
  Status: Awarded
  February 2023 to January 2024

- **Canadian Institutes of Health Research (CIHR) Project Grant: Pandemic Preparedness and Health Emergencies Research.** *Preclinical Models for Monkeypox Virus Infection and Therapeutic Development*.
  $100,000.00
  Role: Nominated Principal Applicant
  Status: Awarded
  February 2023 to January 2024

- **Canadian Institutes of Health Research (CIHR) Team Grant: Building capacity in interdisciplinary research on mpox (monkeypox) and other (re)emerging zoonotic threats to health.** *Investigation of Mpox virus spillover and spillback at the human-animal interface in the Democratic Republic of Congo.*
  $500,000.00
  Role: Nominated Principal Applicant
  Status: Awarded
  February 2023 to January 2025

- **Canadian Institutes of Health Research (CIHR) Project Grant: Pandemic Preparedness and Health Emergencies Research.** *Characterization of monkeypox virus circulation and transmission from wildlife to humans in Africa and identification of wildlife species at elevated risk for infection in Canada*.
  $750,000
  Role: Principal Investigator (NPA: Dr. Jason Kindrachuk, UM)
  Status: Awarded
  March 2023 to February 2028

- **Canada Biomedical Research Fund, Stage 1: Research Hub Selection.** *The CBRF PRAIRIE Hub: Protecting Canada by Building on Excellence in Pandemic Preparedness.*
  Administration Funding
  Role: Named Scientist and Co-applicant
  Status: Awarded
  2023

- **Canadian Institutes of Health Research (CIHR) Project Grant: Team Grant: Monkeypox Rapid Research Response**. *A prospective and retrospective multi-center, cohort study for clinical, virologic and immunologic characterization of monkeypox virus clade IIb by the International Monkeypox Response Consortium (IMREC)*.
  $1,840,500
  Role: Co-applicant (NPA: Dr. Jason Kindrachuk)
  Status: Awarded
  September 2022 to August 2023

- **SHRF Saskatchewan Health Research Foundation, 2022 Establishment Grant.** *Long COVID in Saskatchewan: Defining Long COVID Inflammation for the development of diagnostic tests and the identification of therapeutics.*
  $120,000.00
  Role: Nominated Principal Applicant
  Status: Awarded
  August 2022 to July 2025

- **SHRF Saskatchewan Health Research Foundation, 2021-22 Solutions - Innovation Grant.** *The Clinical Course and Lived Experience of Long COVID Patients Experiencing Dyspnea: A Prospective Cohort Study*.
  $49,987.00
  Role: Co-Principal Applicant (NPA: Dr. Donna Goodridge)
  Status: Awarded
  December 2021 to November 2022

- **CEPI (Coalition for Epidemic Preparedness Innovations) and CIHR (Canadian Institutes for Health Research), CEPI-CIHR Leadership Award in Vaccine Research.** *Universal vaccine approaches for current SARS-CoV-2 variants and future coronaviruses in LMICs.*
  Role: Award Recipient (Nominated Principal Investigator)
  Status: Awarded
  July 2022 to July 2024

- **Respiratory Research Centre (RRC): Team Building Grant 2021 –** *Longitudinal clinical symptom and experience analysis of Long COVID cases in Saskatchewan using a triangulation, mixed method, study leveraging app- or web-based and focus group participation.*
  $99,994.00
  Role: Nominated Principal Investigator
  Status: Awarded
  December 2021 to November 2022

- **Canadian Institutes for Heath Research, Operating Grant: Emerging COVID-19 Research Gaps and Priorities Funding Opportunity (March 2021) – Vaccines –** *SARS-CoV-2 virus infection in vaccinated vulnerable populations and the potential for variant emergence.*
  $499,900
  Role: Nominated Principal Investigator
  Status: Awarded
  August 2021 to July 2024

- **Canadian Foundation for Innovation** – *Development of Preclinical and Clinical models of COVID-19 Disease Severity for Vaccine, Antiviral and Immuno-therapeutic Evaluation.*
  $1,200,000
  Role: Principal Applicant (NPA: Dr. David Kelvin)
  Status: Awarded
  October 2020 to September 2025

- **Canadian Institutes for Health Research (CIHR) May 2020 COVID-19 Rapid Research Funding Opportunity** – *Rapid Prototyping and Deployment of a Therapeutic Pan-Coronavirus Fusogenix DNA Vaccine Engineered to Eliminate ADE.*
  Role: Co-Applicant (NPA: John Lewis)
  Status: Awarded
  Award amount: $158,000 over 1 year (total value $4,175,000)
  May 2020 to April 2023

- **Canadian Institutes for Health Research (CIHR) Canadian 2019 Novel Coronavirus (COVID-19) Rapid Research Funding Opportunity** - *Identification of biomarkers that predict severity of COVID-19 patients.*
  Role: Principal Investigator (NPA: Dr. David Kelvin)
  Status: Awarded February 2020 – January 2022
  Award amount: $25,000/year (total value $1,000,000)

- **Genome Canada - Using genomics to stem the spread of COVID-19** – *Host Responses to SARS-CoV-2 Infection in Mild and Severe Patients.*

Role: Co-Applicant (NPA: Dr. David Kelvin)
Status: Awarded June 2020 – June 2022
Award amount: $250,000

- **Canadian Institutes for Health Research (CIHR) Canadian 2019 Novel Coronavirus (COVID-19) Rapid Research Funding Opportunity** - *Animal models for SARS-CoV-2: vaccines and immune enhancement.*
  Role: Co-Applicant (NAP: Dr. Darryl Falzarano)
  Status: Awarded February 2020 – January 2022
  Award amount: $208,690 over 2 years (total value $999,793)

- **IWK Health Centre Establishment Grant** - *Immune mechanisms of influenza virus imprinting for guiding rational vaccine design.*
  Role: Nominated Principal Investigator
  Status: Awarded April 2019 – March 2022
  Award amount: $35,000/year

- **Nova Scotia Health Research Foundation Establishment Grant** - *Investigation of the humoral immune response and its influence on virus drift during influenza infection in the preimmune-vaccinated host.*
  Role: Nominated Principal Investigator
  Status: Awarded October 2018 – September 2021
  Award amount: $150,000

- **Nova Scotia COVID-19 Health Research Coalition** - *Expression and Purification of the Spike Protein (S) of Covid19 Virus for Diagnostic Purposes and Production of Live Attenuated Viral Vaccines.*
  Role: Co-PI (NPI: Dr. Chris Richardson)
  Status: Awarded April 2020 – March 2021
  Award Amount: $25,000

- **Nova Scotia COVID-19 Health Research Coalition** - *Development and Evaluation of Lead DNA Vaccine Candidates for COVID-19.*
  Role: Co-PI (NPI: Dr. Roy Duncan)
  Status: Awarded April 2020 – March 2021
  AWARD Amount: $25,000

- **Scotiabank – COVID-19 IMPACT** – *Vaccines for COVID-19*
  Role: Nominated Principal Investigator
  Status: Awarded June 2020 – June 2021
  Award amount: $25,000

- **Canadian Institutes for Health Research (CIHR) May 2020 COVID-19 Rapid Research Funding Opportunity** – *Expression and Purification of COVID19 Virus Spike (S) Protein for Diagnostics and Vaccines.*
  Role: Co-Applicant (NPA: Dr. Chris Richardson)
  Status: Awarded May 2020 – April 2021
  Award amount: $20,000 over 1 year ($138,097 total)

- **University of Saskatchewan, College of Medicine –** *Golden hamsters as a model for the effects of SARS-CoV-2 infection on sensory discrimination and social behaviour.*
  Role: Co-Investigator (NPA: Dr. John Howland)

Status: Awarded
Award Amount: $30,000

- **Mitacs Accelerate** - *Development of DNA-based SARS-CoV-2 vaccine platforms.*
  Role: Co-principal Investigator (NPA: Dr. Roy Duncan)
  Status: Awarded August 2020 to April 2021
  Award Amount: $30,000
  Company Partner: Entos Pharamceuticals

- **NIH NIAID Clinical Trial Planning Grant (R34), FOA no. PAR-19-281** – *Human challenge model of Bordetella pertussis infection.* Grant no. 1R34AI148056-01A1
  Role: Co-investigator (NPA: Dr. Scott Halperin)
  Status: Awarded 19 June 2020 to 31 May 2021
  Award Amount: US$145,720 (total of direct and indirect costs), approximately equivalent to CAN$193,808

- **NIH Pilot Project** – *Influenza Imprinting of the Infant Immune System and Mechanisms of Protection in the Infant Ferret Model*
  Role: Nominated Principal Investigator
  Status: Awarded September 2017 – August 2019
  Award amount: $165,000.00 USD

- **NIH UO1** – *Omics-Based Predictive Modeling of Age-Dependent Outcome to Influenza Infection*
  2013/09/01-2018/08/31
  Role: Subaward Director (NPI: Dr. Elodie Ghedin)
  Status: Award active until August 2019
  Award Amount: $749,267 USD (Total value for UHN 2013 to 2019)

- **Dalhousie Medical Research Foundation (DMRF) Conference Grant** – *CSV2018, the 2nd Symposium of the Canadian Society for Virology*
  2018/04/01-2018/06/31
  Role: Co-Applicant (Nominated Principal Applicant: Dr. Craig McCormick)
  Status: Completed

- **Jenex Corporation –** *Testing of TherOZap™ for inhibition of Zika virus infection.*
  2017/04/01-2018/01/01
  Role: Project Director
  Status: Completed
  http://tdc.uhnresearch.ca/content/jenex-corporation-collaboration-uhn%E2%80%99s-techna-institute-reports-promising-initial-results

- **NIH IDIQ Contract—HHSN272201000031I, Order#HHSN27200001, Task Order A88, NIH/NIAID**
  2015/09/01-2017/03/31 *Pre-Immune Ferret Model for the Evaluation of Influenza Vaccines and Vaccination Strategies*
  Role: Project manager/director
  Status: Completed
  Award Amount: Total Award value was $1,378,059 USD

- **CDRD – Canada's drug development and commercialization Centre –** *Testing Novel Neuraminidase Inhibitors for antiviral treatment against Oseltamivir resistant influenza virus strains.*

2014-2015
Role: Project Director
Status: Completed

- **NIH IDIQ Contract – HHSN272201000031I, Order#HHSN27200001, Task Order A42, NIH/NIAID**
  2012/04/01-2013/07/31
  Role: Project manager/director
  Status: Completed
  Ferret Influenza Model for Vaccine Proof of Concept Studies

V. PROFESSIONAL SOCIETY MEMBERSHIPS

CIHR College of Reviewers **2018 –**
Canadian Institutes for Health Research College of Reviewers

Canadian Society for Virology **2016 –**

American Society for Virology **2012 –**

American Society for Microbiology **2012 – 2014**

Biochemical Society, UK **2006 – 2007**

VI. PROFESSIONAL COMMITTEE MEBERSHIPS

Public Health Agency of Canada Expert Panel on Avian Influenza A(H5Nx) in Canada **2023 –**
Role: Member and Subject Matter Expert

World Health Organization (WHO) Advisory Committee on SARS-CoV-2 Vaccine Design **2020 –**
Now the Committee on Priority Pathogen Vaccine Design
Role: Member

Prairie Hub for Pandemic Preparedness **2022 –**
Canadian Biomedical research Fund (CBRF) Initiative
Role: Member of the Scientific Core Team

Department of Microbiology and Immunology Executive Committee **2020 – 2021**
Dalhousie University
Role: Member

Executive Committee of the Canadian Society for Virology **2019 – 2020**
Role: Director

Dalhousie Biosafety Committee **2018 – 2020**
Role: Member

DMRF Scientific Advisory Committee **2018 – 2020**
Dalhousie Medical Research Foundation (DMRF)
Role: Member

Department of Microbiology and Immunology Undergraduate Studies Committee **2018 – 2021**
Dalhousie University
Role: Member

Department of Microbiology and Immunology Safety Committee **2019 – 2020**
Dalhousie University
Role: Member

VII. GRANT REVIEW COMMITTEE MEMBERSHIPS

VMD (Vaccines against Microbial Diseases) Grant Panel **2022 – 2023**
United States NIAID (National Institute of Allergy and Infectious Diseases), NIH (National Institutes of Health)
Role: Panel Member

Biological Components of Aging (BCA) Grant Panel **2021 –**
CIHR (Canadian Institutes for Health Research)
Role: Panel Member

VIII. CONFERENCE ORGANIZING COMMITTEE INVOLVEMENT

Canadian Immunization Conference 2024 **2024**
Member of the Meeting Organizing Committee
To be held in Ottawa, Ontario

CSV 2024: 5th Symposium of the Canadian Society for Virology **2023 – 2024**
Member of the Local Organizing Committee
To be held in Saskatoon, Saskatchewan, 2 – 5 June 2024

Prairie Infectious Immunology Network (PIIN) 2023 Meeting **2023**
Member of the Organizing Committee
Held in Hecla, Manitoba, 24 – 26 September 2023

American Society for Virology 2023 WS Convener **2023**
Convener of WS43: Vaccines III: Coronaviruses
Held in Athens, Georgia, 24 – 28 June 2023

Canadian Immunization Conference 2023 **2022 – 2023**
Member of the Meeting Organizing Committee
Held in Ottawa, Ontario, 25 – 27 April 2023

American Society for Virology 2021 WS Convener **2021**
Convener of Coronaviruses II: Animal Models
Held virtually, 19 – 23 July 2021

SARS-CoV-2 in Canada: A Year in Review **2020**
CSV 2020: 2nd Canadian Society for Virology Virtual Workshop
Member of the Meeting Organizing Committee
Held virtually, December 2020

CSV 2020: 1st Canadian Society for Virology Virtual Workshop **2020**
Member of the Meeting Organizing Committee
Held virtually, August 2020

CSV 2018: The 2nd Workshop of the Canadian Society for Virology **2018**
Member of the Local Organizing Committee
Held in Halifax, Nova Scotia at Dalhousie University, June 2018

IX. GRANT REVIEWING EXPERIENCE

United Kingdom Research and Innovation UKRI **2024**
Reviewer
New Investigator Awards
December 2024

Canadian Institutes of Health Research CIHR **2024**
Reviewer Panel Member
2024 CIHR Post-PhD Fellowship Awards
November 2024 – January 2025

Canadian Institutes of Health Research CIHR **2024**
Reviewer Panel Member
Catalyst Grant: Development and validation of new biomedical techniques and technologies
October 2024

Canadian Institutes of Health Research CIHR **2024**
Reviewer Panel Member
2024 CIHR STBBI Catalyst Grants
23 – 25 July 2024

Canadian Foundation for Innovation CFI **2024**
John R. Evans Leaders Fund (JELF)
June 2024

Canadian Institutes of Health Research CIHR **2023 - 2024**
Reviewer Panel Member
2023 CIHR Post-PhD Fellowship Awards
November 2023 – January 2024

Canadian Institutes of Health Research CIHR **2023**
Reviewer Panel Member
Biological and Clinical Aspects of Aging Panel
Project Grant: Fall 2023 competition
December 2023

USask CIHR Project Grant: 2023 Fall Competition Review Program **2023**
Internal Reviewer
July 2023

Canadian Institutes of Health Research CIHR **2023**

Reviewer Panel Member
Biological and Clinical Aspects of Aging Panel
Project Grant: Spring 2023 competition
May 2023

United Kingdon Research and Innovation UKRI **2023**
Grant Reviewer
May 2023

Canadian Institutes of Health Research CIHR **2022**
Reviewer Panel Member
Biological and Clinical Aspects of Aging Panel
Project Grant: Fall 2022 competition
December 2022

Canadian Institutes of Health Research CIHR **2022**
Reviewer Panel Member
Biological and Clinical Aspects of Aging Panel
Project Grant: Spring 202s competition
25-27th May 2022

VMD (Vaccines against Microbial Diseases) Grant Panel **2022**
United States NIAID (National Institute of Allergy and Infectious Diseases), NIH (National Institutes of Health)
3-4th March 2022

Canadian Institutes of Health Research CIHR **2021**
Reviewer Panel Member
Biological and Clinical Aspects of Aging Panel
Project Grant: Fall 2020 competition
1-3rd December 2021

United States Department of Defense **2021**
Congressionally Directed Medical Research Programs (CDMRP)
Grant Panel Scientific Reviewer
Peer Reviewed Medical Research Program (PRMRP)
October 2021

United States NIH NIAID P01 Grant Scheme **2021**
Grant Panel Reviewer
FOA NOT-AI-21-002 "Emergency Awards: Notice of Special Interest (NOSI) on Pan-Coronavirus Vaccine Development Program Projects"
6-7th October 2021
PAR-20-072

Canadian Foundation for Innovation (CFI) **2021**
Grant Reviewer
John R. Evans Leaders Fund
June 2021

Canadian Institutes of Health Research CIHR **2021**

Reviewer Panel Member
Biological and Clinical Aspects of Aging Panel
Project Grant: Spring 2021 competition
27 May 2021

Canadian Institutes of Health Research CIHR **2021**
Reviewer Panel Member
Biological and Clinical Aspects of Aging Panel
Project Grant: Fall 2020 competition
27 – 29 January 2021

United States NIH NIAID R01 and R21 Grant Scheme **2020**
Grant Panel Reviewer
NIAID Emergency COVID-19 and SARS/CoV-2 Grants Review Committee
3 December 2020
RFA/PA: PAR-20-177; RFA/PA: PAR-20-178 (**SEP ZAI1-AWA-W-J2**)

New Frontiers in Research Fund **2020**
External Reviewer
Exploration 2020 competition

Michael Smith Research Foundation **2020**
Reviewer
MSFHR COVID-19 Research Response Fund review panel

United States NIH NIAID R01 and R21 Grant Scheme **2020**
Grant Panel Reviewer
NIAID Emergency COVID-19 and SARS/CoV-2 Grants Review Committee
25 June 2020
RFA/PA: PAR-20-177; RFA/PA: PAR-20-178 (**ZAI1-JHM-X-S3**)

Canadian Institutes of Health Research CIHR **2020**
Reviewer
May 2020 COVID-19 Rapid Research Funding Opportunity

Ontario Lung Association **2020**
Basic Science Panel Member
2020-2021 Ontario Lung Association Team Breathe Research Award (Grant-in-Aid for Basic Science)

Canadian Lung Association **2019**
External Reviewer
2018/19 National Grant Peer Review for The Lung Association's Grant-in-Aid competition.

PSI Foundation
External Reviewer **2018**
2018 grant competition

United States NIH R21 Grant Scheme **2016**
Grant Panel Reviewer
PAR-16-106 "Rapid Assessment of Zika Virus (ZIKV) Complications (R21)"

ZAI1 RRS M M3

X. JOURNAL REVIEWING EXPERIENCE

Journals I review for on a regularly/irregularly: *PLoS One* (2010+); *Virology Journal* (2011+); *Virus Research* (2011+); *Clinical Microbiology and Infection* (2011+); *Pharmaceuticals* (2012+); *Expert Review of Vaccines* (2012+); *The Journal of Rheumatology* (2015); *PLOS Pathogens* (2017+); *Viruses* (2018+); *Nature Microbiology* (2018+); *Vaccines* (2019+); *Eurosurveillance* (2019+); *PNAS* (2019+); *Lancet Infectious Diseases* (2020+); *Lancet Pediatrics* (2020+); *Science* (2020+); *Lancet Respiratory Medicine* (2020); *Scientific Reports* (2021+); *Virology* (2021+); *Science Translational Medicine* (2021+); *eBioMedicine* (2022+); *mSphere* (2022+); *Cell* (2022+); *Science Signaling* (2023+); *Nature Communications* (2023+); *NPJ Vaccine* (2023+); *mBio* (2023+); *Journal of Virology* (2023+); *NPJ Viruses* (2023+)

XI. EDITORIAL EXPERIENCE

Vaccines **2019**
Guest Editor
Special Issue – Influenza Vaccines: Viral Imprinting and Vaccine Design of Influenza and other Viruses

Journal of Infection in Developing Countries, JIDC **2010 –**
Associate Editor

XII. STUDENT SUPERVISION AND STUDENT COMMITTEE EXPERIENCE

UNDERGRADUATE STUDENTS
Below is a list of summer students, undergraduate learners, and junior technicians that I have supervised or co-supervised.

Kailey Kowalchuk, Summer Research Student, University of Saskatchewan **2023**
Brian McPhee, Honours Student and NSERC Summer Student, University of Saskatchewan **2022 – 2023**
Jack Bell, Honours Student, University of Saskatchewan **2022 – 2023**
Anthony Yourkowski, Summer Student, University of Saskatchewan **2021 – 2022**
Anni Ge, NSERC and Experiential Student, Dalhousie University **2020 – 2022**
Mary Foley, Honors and NSERC Summer Student, Dalhousie University **2019 – 2020**
Mara McNeil, Honors, Experiential learning, and NSERC Summer Student, Dalhousie University **2019 – 2020**
Taylor Caddell, Experiential 3rd Year Student, Dalhousie University **2019**
Morgan King, Junior Technician, Dalhousie University **2018 – 2019**
Jared Mullins, Summer Student, Dalhousie University **2018**
April Bell, Summer Student, U of T **2015**
Jessica Bartoszko, Summer Student, U of T **2014**
Andrew Zarnke, Summer Student and Research Technician, UHN and Dalhousie University **2010 – 2019**
Derek Ng, Summer Student, UHN **2010 – 2011**

GRADUATE STUDENTS
Below is a list of Masters and PhD students that I have co-supervised or mentored.

Alaa Selim, M.Sc. Student, University of Saskatchewan **2022 – 2024**
Anthony Yourkowski, M.Sc. Student, University of Saskatchewan **2022 –**
Ethan Jansen, M.Sc. Student, University of Saskatchewan **2021 – 2024**
Melissa Rioux, Master's Student, Dalhousie University **2019 – 2022**
Magen Francis, Ph.D. Student, Dalhousie University and University of Saskatchewan **2018 – 2024**

Jaclyn Law, Ph.D., Rotation Student, U of T	**2016**
Stephane Paquette, Ph.D. Student, U of T	**2010 – 2015**
Stephen Huang, Ph.D. Student, U of T	**2010 – 2013**
Jane (Zhen) Lin, Ph.D. Student, U of T	**2011 – 2013**
Colin (Yuan) Fang, Ph.D. Student, U of T	**2009 – 2013**
Abu Sidahmed, Ph.D. Student, U of T	**2009 – 2013**
Ali Danesh, Ph. D. Student, U of T	**2009 – 2014**
Illaria Borghetto, Ph.D. Student, SaRD	**2008 – 2009**
Paola Sansonetti, Ph.D. Student, SaRD	**2008 – 2009**
Dionigia, Meloni, PhD. Student, SaRD	**2008 – 2009**

POSTDOCTORAL MENTORSHIPS

Below is a list of postdoctoral fellows and Research Associates or Technicians I have mentored.

Zahed Khatooni, PhD, Postdoctoral Fellow, VIDO	**2023 – 2024**
Matthew Rogers, PhD, Research Associate, VIDO	**2023 – 2024**
Joseph Darbellay, PhD, Postdoctoral Fellow, VIDO	**2022 – 2023**
Pacifique Ndishimye, PhD, Postdoctoral Fellow, Dalhousie University	**2020 – 2024**
Cynthia Swan, PhD, Research Associate/Technician, VIDO	**2020 –**
Andrea Kroeker, PhD, Research Associate/Technician, VIDO	**2020 – 2021**
Erin Gill, PhD, Research Associate, Dalhousie University	**2018**
Amber Farooqui, PhD, Postdoctoral Fellow, UHN	**2016 – 2017**
Adnan Khan, PhD, Postdoctoral Fellow, UHN	**2016 – 2017**
Raquel Almansa, PhD, Postdoctoral Fellow, UHN	**2013**
Charit Seneviratne, PhD, Postdoctoral Fellow, IDR	**2013**
Amber Farooqui, PhD, Postdoctoral Fellow, SaRD	**2008 – 2009**

GRADUATE STUDENT THESIS COMMITTEES

Below is a list of graduate student thesis committees I have participated

Shruti Sasikumar, Master's Student, University of Saskatchewan	**2023 –**
Lauren Aubrey, PhD Student, University of Saskatchewan	**2023 –**
Maddie Stewart, PhD Student, University of Saskatchewan	**2022 –**
Satyajit Biswas, PhD Student, University of Saskatchewan	**2022 –**
Zoe Parker-Cates, MSc Student, University of Saskatchewan	**2021 –**
Guoyu Hu, PhD Student, Dalhousie University	**2021 – 2024**
Milad Vahedi, Master's Student, Dalhousie University	**2021 – 2022**
Patrick Slaine, PhD Student, Dalhousie University	**2018 – 2019**

GRADUATE STUDENT EXAM COMMITTEES

Below is a list of graduate student exam committees I have participated

Benjamin Hewins, Master's Student, Dalhousie University	**2023**
Abdullah Mahmud-Al-Rafat, Master's Student, Dalhousie University	**2023**
Julia Liu, PhD Student, Dalhousie University	**2020**
Amal Nabbout, PhD Student, Dalhousie University	**2019**

XIII. TEACHING EXPERIENCE AND CLASSES

Below is a list of courses that I have taught lectures. In all classes, lectures are distributed among other professors.

BMIS321 – University of Saskatchewan 2023
Principles of Immunology – Lecture Course
Considers the cellular, molecular and genetic mechanisms responsible for the physiological functioning of the immune system. Topics include the clonal selection theory, the structure and diversity of antibody molecules, the MHC-restricted recognition of antigen by T cells and the regulation of the immune response.
*I teach immune responses to intracellular and extracellular bacterial pathogens

BMIS390 – University of Saskatchewan 2021-2025
Experimental Microbiology and Immunology – Lab Course
Department of Biochemistry, Microbiology, and Immunology
The principles and applications of techniques used in microbiology and immunology are covered with an emphasis on problem solving by experimentation. Included are methods relating to safe handling, growth and identification of microbes and methods for studying virology and immunology.
*I teach lectures and design the labs on quantifying viral load and antibodies

MICI 4116 – Dalhousie University 2019
Current Topics in Mucosal Immunology – Lecture Course
Department of Microbiology and Immunology
This advanced course focuses on the mucosal immune system, which maintains a state of tolerance to environmental antigens while mounting a strong immune response to infectious agents. The course consists of lectures and student presentations based on review articles and research papers. Topics include: immune mechanisms in the gastrointestinal tract and respiratory and genitourinary systems.
* I taught the Respiratory Mucosa Section of the course for 2019

MICI 2100 – Dalhousie University 2018-2020
Introduction to Microbiology – Lecture and Lab Based Course
Department of Microbiology and Immunology
An introduction to the basic concepts of microbiology and immunology. Topics include: structure, genetics and biology of microorganisms, basic immunology and host defence mechanisms. The class is designed to interrelate the major research themes within the Department (bacteriology and microbial pathogenesis, immunology, microbial and molecular genetics, virology and cancer biology).
* I taught the Virology Section of the course for 2018 and 2019 and designed the corresponding labs

Biomedical Science for 3rd year Medical Students – University of Sassari 2010
University of Sassari, Sassari, Italy

Confocal Microscopy Training 2005 – 2007
Department of Immunology
Centre for Infection and Immunity
Queen's University, Belfast

XIV. INTERVIEWS WITH MEDIA AND PUBLIC FIGURES – Shortlist

A more comprehensive list of interviews can be found in the Appendix

CBC Saskatchewan 2023
Sask. scientists developing vaccines to protect birds and humans from avian flu

https://www.cbc.ca/news/canada/saskatchewan/sask-avian-flu-vaccine-research-1.6804715
Interview with Sam Samson, 10 April 2023

Nature – News **2022**
Flu causes huge spike in child hospitalizations in Canada
Interview with Nicola Jones, 12 Dec 2022
https://www.nature.com/articles/d41586-022-04408-7

New York Times **2022**
One Step Closer to a Universal Flu Vaccine?
Interview with Apoorva Mandavilli, 29 Nov 2022
https://www.nytimes.com/2022/11/29/health/universal-flu-vaccine.html

USA Today – Health **2022**
Experimental flu shot aims to target 20 influenza viruses in a single vaccine
Interview with Karen Weintraub, 28 Nov 2022
https://www.usatoday.com/story/news/health/2022/11/28/experimental-flu-vaccine-single-shot-20-viruses/10759632002/

CBC – Health – Analysis **2022**
New mRNA vaccine targeting all known flu strains shows early promise
Interview with Adam Miller, 24 Nov 2022
https://www.cbc.ca/news/health/mrna-flu-vaccine-study-influenza-pandemic-universal-flu-shot-1.6662809

CBC – Health **2022**
Canada not shifting to stretch supply of monkeypox vaccine yet
Interview with Adam Miller, 12 August 2022
https://www.cbc.ca/news/health/monkeypox-vaccine-canada-outbreak-1.6549614

CBC – Saskatchewan – New **2022**
Sask. vaccine manufacturing facility the first of its kind in Canada
Interview with Sam Maciag, 28 June 2022
https://www.cbc.ca/news/canada/saskatchewan/sask-vaccine-manufacturing-facility-first-of-kind-in-canada-1.6503798

CBC – The National **2022**
Influenza and COVID-19
https://www.youtube.com/watch?v=y7OKcJGuow4
1 May 2022

Global News – Saskatchewan – Health **2022**
COVID-19 survivors praise VIDO-InterVac research on long COVID
Interview with Kelly Skjerven, 13 February 2022
https://globalnews.ca/news/8617138/covid-19-icu-long-covid-vido-intervac/

Forbes **2022**
'Flurona' Isn't A New Virus, It's Just Someone With Covid-19 And The Flu
Interview with Victoria Forster, 5 January 2021
https://www.forbes.com/sites/victoriaforster/2022/01/05/flurona-isnt-a-new-virus-its-just-someone-with-covid-19-and-the-flu/?sh=6b044bd6b9bc

The Globe and Mail **2021**
Understanding space, improving life on Earth – Excellence in Research and Innovation Report
https://www.theglobeandmail.com/business/adv/article-understanding-space-improving-life-on-earth/
19 November 2021

CBC – White Coat, Black Art – The Dose **2021**
How the technology used to make COVID-19 vaccines could improve flu shots
Interview with Amina Zafar, 31 October 2021
https://www.cbc.ca/radio/whitecoat/flu-covid-vaccines-combined-1.6228595

Nature – News **2021**
Mounting evidence suggests Sputnik COVID vaccine is safe and effective
Interview with Bianca Nogrady, 6 July 2021
https://www.nature.com/articles/d41586-021-01813-2?utm_source=Nature+Briefing&utm_campaign=3808e4fcab-briefing-dy-20210706&utm_medium=email&utm_term=0_c9dfd39373-3808e4fcab-45097686

The Washington Post – Americas **2021**
Canada's variant-fueled covid-19 surge prompts new restrictions
https://www.washingtonpost.com/world/2021/04/03/canada-coronavirus-restrictions-variants/
3 April2021

Fortune – Health – COVID-19 vaccine **2021**
Only one of the Big Four vaccine makers produced a COVID-19 winner. What happens next?
Interview with Kat Eschner, 3 March 2021
https://fortune.com/2021/03/03/covid-vaccines-pfizer-moderna-big-pharma/

Popular Science – Health **2021**
Ramping up COVID-19 vaccine production is harder than it seems
Interview with Kat Eschner, 19 Feb 2021
https://www.popsci.com/story/health/mrna-covid-vaccine-ramp-up-production/

Toronto Star – Canada **2021**
Equity is a main concern for researchers amid COVID-19 vaccine shortages
Interview with Nebal Snan, 12 Feb 2021
https://www.thestar.com/news/canada/2021/02/12/equity-is-a-main-concern-for-researchers-amid-covid-19-vaccine-shortages.html

Fortune Magazine **2021**
Johnson & Johnson's lower-immunity single-dose COVID vaccine might be just what the doctor ordered
Interview with Kat Escher, 1 Feb 2021
https://fortune.com/2021/02/01/johnson-johnsons-covid-vaccine/

The Washington Post – World **2021**
Israel recommends coronavirus vaccine for pregnant women, marking a shift as some countries reassess risk
Interview with Miriam Berger, 22 Jan 2021
https://www.washingtonpost.com/world/2021/01/22/coronavirus-vaccine-pregnant-women-israel-risks/

CBC – Health – Second Opinion **2020**

Why talking about getting vaccinated could help counter COVID-19 vaccine hesitancy
Interview with Adam Miller, 12 December 2020
https://www.cbc.ca/news/health/covid-19-vaccine-hesitancy-canada-1.5838154

The Washington Post **2020**
Medical research again leaves pregnant women waiting for a vaccine — this time for coronavirus
Interview with Miriam Berger, 10 December 2020
https://www.washingtonpost.com/world/2020/12/10/pregnant-women-are-excluded-initial-covid-19-vaccinations-highlighting-worldwide-research-gap/

CBC – Health **2020**
Why rollout of COVID-19 vaccine could be 'the most difficult part' in Canada
Interview with Adam Miller, 11 November 2020
https://www.cbc.ca/news/health/coronavirus-canada-covid-19-vaccine-rollout-1.5797082

CBC – Quirks and Quarks **2020**
Fast, effective and ethically distributed — what we need from a COVID vaccine.
Interview with Bob McDonald, 18 September 2020
https://www.cbc.ca/radio/quirks/sep-19-woodpeckers-fight-violent-wars-understanding-hibernating-squid-and-more-1.5729266/fast-effective-and-ethically-distributed-what-we-need-from-a-covid-vaccine-1.5729267

Self Magazine **2020**
We've Got a Coronavirus Vaccine Update for You
Interview with Dr. Tara Smith, 26 August 2020
https://www.self.com/story/coronavirus-vaccine-update

Chatelaine Magazine – Health **2020**
Vaccines, Antibodies, & Other Things To Know Right Now About COVID-19
Interview with Rebecca Gao, 18 August 2020
https://www.chatelaine.com/health/vaccines-antibodies-flu-r0-covid/

CBC Cross Country Check Up **2020**
Aug. 9, 2020: Ask Me Anything: COVID-19 vaccine edition
Interview with Adrienne Arsenault, 9 August 2020
https://www.cbc.ca/listen/live-radio/1-13/clip/15791158

Interview with the British High Commissioner to Canada, Susan le Jeune d'Allegeershecque **2020**
COVID-19 Vaccines for the Global Vaccine Summit 2020 in London and Gavi, the Global Vaccine Alliance
27 May 2020
https://www.youtube.com/watch?v=ihT84ciqCKM&feature=youtu.be

Associated Press – features in the *Washington Post* **2020**
Monkeys, ferrets offer needed clues in COVID-19 vaccine race
By Lauran Neergaard, 2 June 2020
https://www.washingtonpost.com/climate-environment/monkeys-ferrets-offer-needed-clues-in-covid-19-vaccine-race/2020/06/02/17f9497e-a4b4-11ea-898e-b21b9a83f792_story.html

New York Times **2020**
A New Entry in the Race for a Coronavirus Vaccine: Hope
Interview with Knvul Sheikh, 18 May 2020

https://www.nytimes.com/2020/05/20/health/coronavirus-vaccines.html

CBC National News **2020**
The COVID-19 Vaccine Landscape
Interview with Natasha Fatah, 18 May 2020
https://twitter.com/NatashaFatah/status/1262529353767890944

Nature – Careers Q&A **2020**
On the front lines of the coronavirus-vaccine battle
Interview with Virginia Gewin, 16 April 2020
https://www.nature.com/articles/d41586-020-01116-y

Maclean's **2020**
How science is accelerating to try and catch up with COVID-19
Interview with Christina Frangou, 30 March 2020
https://www.macleans.ca/society/health/how-science-is-accelerating-to-try-and-catch-up-with-covid-19/

CBC – Quirks and Quarks **2020**
How aging increases vulnerability to COVID19
Interview with Bob McDonald and producer Sonya Buyting, 20 March 2020
https://www.cbc.ca/radio/quirks/mar-21-covid-19-vulnerability-covid-and-climate-and-more-1.5504342/how-aging-increases-vulnerability-to-covid-19-and-how-pollution-can-make-it-worse-1.5504347

CBC – The Current **2020**
Finding a COVID19 Vaccine
Interview with Matt Galloway and producer Benjamin Jamieson, 20 March 2020
https://www.cbc.ca/listen/live-radio/1-63-the-current/clip/15766771-finding-a-covid-19-vaccine-during-a-pandemic-health-care-in-rural-canada-in-the-face-of-a-pandemic

Readers Digest **2020**
10 Quirky Questions About Coronavirus Answered
Readers Digest Best Health Q&A with Jela Tejada, 20 March 2020
https://www.besthealthmag.ca/best-you/covid-19/coronavirus-questions/

CBC – The National **2020**
Coronavirus outbreak in 2019-2020
Interviewed by Christine Birak, 26 January 2020
https://www.cbc.ca/news/the-national-for-january-26-2020-1.5441363

DalMedia – THE BIG PICTURE **2020**
VACCINES — HOW THEY WORK, AND WHY WE STILL NEED THEM
Dalhousie Media
Interview with Michele Charlton photos by Danny Abriel, 22 February 2020
https://www.dal.ca/news/2020/02/21/the-big-picture--vaccines---how-they-work--and-why-we-still-need.html

The Globe and Mail **2020**
As peak flu season arrives, Canadian hospitals seeing higher than usual pediatric cases
Interviewed by Carly Weeks, 12 January 2020
https://www.theglobeandmail.com/life/health-and-fitness/article-as-peak-flu-season-arrives-canadian-hospitals-seeing-higher-than/

CBC – Health – Second Opinion **2019**
What you need to know before flu season hits in Canada
Interviewed by Adam Miller, 10 October 2019
https://www.cbc.ca/news/health/flu-shot-flu-season-canada-1.5318796

CTV Atlantic **2018**
The Upcoming Flu Season and Review of Last Flu Season
Interviewed by Bruce Frisko, 30 September 2018
https://atlantic.ctvnews.ca/video?clipId=1502886

ResearchGate **2016**
Researchers need Zika data fast. This mobile app could deliver
4 April 2016
https://www.researchgate.net/blog/post/researchers-need-zika-data-fast-this-mobile-app-could-deliver

ALN **2015**
In Ferrets, Influenza is Spread from Mother to Offspring Through Infected Breast Cells
30 October 2015
http://www.alnmag.com/news/2015/10/ferrets-influenza-spread-mother-offspring-through-infected-breast-cells

The Naked Scientists - BBC Radio 5 **2015**
Flu breast infection
University of Cambridge, 9 October 2015
http://www.thenakedscientists.com/HTML/science-news/news/1000802/

XV. MEDIA COVERAGE OF MY RESEARCH – PRINT AND PODCASTS

AJP-Heart and Circulatory Physiology Podcast **2023**
Cardiac Sex Difference and COVID
https://ajpheart.podbean.com/e/cardiac-sex-differences-and-covid/
7 December 2023

New Chinese research may point to possible role of children in coronavirus spread **2020**
Yahoo News
https://sg.news.yahoo.com/chinese-research-may-point-possible-103316480.html
28 March 2020

CIDRAP: COVID-19 may spread from moms to infants and by seemingly healthy kids **2020**
CIDRAP - Center for Infectious Disease Research and Policy
http://www.cidrap.umn.edu/news-perspective/2020/03/covid-19-may-spread-moms-infants-and-seemingly-healthy-kids
26 March 2020

TWiV 363: Eat flu and dyad **2015**
This Week In Virology with Vincent Racaniello.
http://www.twiv.tv/2015/11/15/twiv-363/
October 2015

CIDRAP: Ferret study shows live flu viruses in breast tissue, milk. **2015**
CIDRAP - Center for Infectious Disease Research and Policy
http://www.cidrap.umn.edu/news-perspective/2015/10/flu-scan-oct-08-2015

Virology Blog. Influenza virus in breast milk **2015**
Virology Blog. All about viruses and disease.
http://www.virology.ws/2015/11/12/influenza-virus-in-breast-milk/

Constatan en hurones que las mamas también son fuente de contagio de la gripe. **2015**
La Vanguardia
http://www.lavanguardia.com/vida/20151008/54437989378/constatan-en-hurones-que-las-mamas-tambien-son-fuente-de-contagio-de-la-gripe.html

Role of breast cell infection in flu transmission between mothers and breast-feeding ferrets **2015**
Medical Express
http://medicalxpress.com/news/2015-10-role-breast-cell-infection-flu.html

Study is the first to prove flu can be transmitted through breast tissue **2015**
Examiner
http://www.examiner.com/article/study-is-the-first-to-prove-flu-can-be-transmitted-through-breast-tissue

XVI. Oral Presentations

Alyson A. Kelvin. Teamwork makes the Dream work -- Tackling Long COVID in Saskatchewan with a multidisciplinary group of experts. ANSC 990 Seminar from the College of Agriculture and Bioresources. 14th November 2023. Saskatoon, Saskatchewan, Canada.

Alyson A. Kelvin. The Power of First Impressions – Using viral imprinting for broadly reactive vaccine development. BMI/PRISM Combined Seminar. 23rd November 2023. Saskatoon, Saskatchewan, Canada.

Alyson A. Kelvin. Pneumonia, COVID-19, and Influenza Vaccines 101: Prevention is good medicine. Lung Life Webinar for Lung SASK. 3rd October 2023. Online.

Alyson A. Kelvin. Does last year's cold protect against this year's COVID? CAHLN Annual Meeting. 5th June 2023. Saskatoon, Saskatchewan, Canada.

Alyson A. Kelvin. The acute and continuing impacts of emerging viruses. University of Saskatchewan's Department of Medicine's Research Day. Keynote Speaker. May 2023. Saskatoon, Saskatchewan, Canada.

Alyson A. Kelvin. Does last year's cold protect against this year's COVID? Banff Conference for Infectious Diseases. 17th May 2023. Banff, Alberta, Canada.

Alyson A. Kelvin with Donna Goodridge and Nate Osgood. *Long COVID research in Saskatchewan*. Presentation for the Patient Advisory Council. 23rd January 2023. Online.

Alyson A. Kelvin. *Long COVID*. Presentation for VIDO's Community Liaison Public Meeting. 22nd June 2022, Saskatoon, Saskatchewan, Canada.

Alyson A. Kelvin. *Vaccines for emerging viruses and preparing for a pandemic.* 26th June 2022. UBC Vaccine Information Fair 2022. Vancouver, British Columbia, Canada.

Alyson A. Kelvin. *COVID-19 for 2022 – Variants, Vaccines, and Long COVID.* Presentation for the Medical Health Officers (MHO) group of Saskatchewan. 7 December 2021. Online.

Alyson A. Kelvin with Catalina Lopez-Correa and Caroline Coljin. Presentation and Discussion regarding the threat of the SARS-CoV-2 variant Omicron with the Senate of Canada organized by Senator Stanley Kutcher and *ScienceUpFirst*. 2 December 2021. Online.

Alyson A. Kelvin. *Preparedness for pandemics and response to unknowns of the pathogenesis of SARS-CoV-2.* CRCHUM, Montreal. 22 October 2021. Online.

Alyson A. Kelvin. *Pandemic Pre-preparedness – How the end of SARS1 led to preparedness for SARS2 through Influenza.* 2021 BSL4ZNet International Conference. Preparing and responding to new post-pandemic challenges. 23 September 2021. Online.

Alyson A. Kelvin. *SARS-CoV-2 and COVID-19 in older age groups – Understanding the Virology, Immunology, and Long-COVID after SARS-CoV-2 infection.* Respiratory Research Centre, University of Saskatchewan's Seminar Series. 27 April 2021. Online.

Alyson A. Kelvin. *Emerging viruses and the need for flexible vaccine platforms – The COVID-19 vaccine story.* World STEM Day. 21 March 2021. Online.

Alyson A. Kelvin. *Emerging viruses and the need for flexible vaccine platforms – The COVID-19 vaccine story.* BC Clinical Trial Conference 2021 – The Modernization of Clinical Trials Conference. 27 January 2021. Online.

Alyson A. Kelvin. *Preclinical models of SARS-CoV-2: Male sex and age bias viral burden and interferon responses during SARS-CoV-2 infection.* The Canadian Society for Virology's 2nd Virtual Symposium. 15 December 2020. Online.

Alyson A. Kelvin. *Male sex and age biases viral burden and shedding during SARS-CoV-2 infection in ferrets.* Microbiology Society at the Dalhousie University's Department of Microbiology and Immunology. 4 November 2020. Online.

Alyson A. Kelvin. *Emerging solutions for emerging viruses – development of COVID-19 vaccines and research tools.* PIIN – Prairie Infectious Immunology Network Conference 2020. 20 October 2020. Online.

Alyson A. Kelvin. *Male sex and age biases viral burden and shedding during SARS-CoV-2 infection in ferrets.* ImmunoNet Seminar Series at The University of Alberta. 15 October 2020. Online.

Alyson A. Kelvin. *Male Sex and Age Biases Viral Burden and Shedding during SARS-CoV-2 infection in ferrets.* RiboClub 2020 meeting. 25 September 2020. Online.

Alyson A. Kelvin. *SARS-CoV-2 and COVID-19 Vaccine development.* Presentation for the Northern SK Public Health Team. 15 September 2020. Online.

Alyson A. Kelvin. *SARS-CoV-2, COVID-19 Vaccines, and pandemic preparedness.* IWK Health Centre Grand Rounds. 24 June 2020 - https://www.youtube.com/watch?v=X2RjfXH7Pk0&t=2086s

Alyson A. Kelvin. *Research Canada: A Race against the Clock: COVID-19 Vaccine and Treatment R&D in Canada* Panel Discussion to Parliamentarians. 15 June 2020. Online.

Alyson A. Kelvin. *Preparing for a pandemic – the emerging virus and vaccine development lab at Dalhousie***.** Dalhousie Faculty of Medicine Research Day. 8 June 2020. Online.

Alyson A. Kelvin. *Research Canada: A Race Against the Clock: COVID-19 Vaccine and Treatment R&D in Canada.* I participated in a panel discussion on May 21, 2020 addressing COVID-19 and potential therapeutics and vaccines. Specifically, I spoke about SARS-CoV-2 vaccine development and the Canadian efforts. This event was organized by Research Canada for researchers and parliamentarians. Due to the COVID-19 pandemic, this event was held online.
https://www.youtube.com/watch?time_continue=1&v=6H3Gts1oGdE&feature=emb_logo

Alyson A. Kelvin. *Influenza Vaccination and Immune History … I was sick last year, should I be vaccinated this year.* April 30, 2019. 24th Annual ID Research Day & 11th Annual CCfV Symposium. Halifax, Nova Scotia, Canada.

Alyson A. Kelvin. *Modern Methods for Characterizing the 1918 Influenza Pandemic Virus.* November 6, 2018. Dalhousie Medical School Grand Rounds. Remembrance Rounds. Halifax, Nova Scotia, Canada

Alyson A. Kelvin. *Influenza Host Responses and Vaccination at the Intersection of Age and Immune History.* April 12, 2018. Canadian Centre for Vaccinology (CCfV) and Canadian Immunization Research Network (CIRN). Research Education Series. Presentation held at IWK Health Centre, Halifax, Canada.

Alyson A. Kelvin. *Infant immune imprinting and influenza transmission in the mother-infant dyad.* March 5, 2018, Department of Microbiology and Immunology Seminar Series. Dalhousie University, Halifax, Canada

Alyson A. Kelvin. *Expert Panel Discussion for Let's Talk Microbiology*. February 23, 2017, York University, Toronto, Canada

Alyson A. Kelvin. *Mammary gland pathogenesis and infection and virus kinetics in an infant-mother ferret influenza transmission model*. June 29, 2016. Invited talk at the NEIDL (National Emerging Infectious Disease Laboratory) and Boston University. Boston, Massachusetts.

Alyson A. Kelvin. *Mammary gland pathogenesis and infection and virus kinetics in an infant-mother ferret influenza transmission model*. February 23 to 25, 2015. NIH Systems Biology Programmatic Meeting. Seattle Biomedical Research Institute, Seattle, Washington.

Alyson A. Kelvin. *Immunological Analyses of Influenza-Infected Infant Ferrets*. April 28 to 29, 2014. NIAID/DMID Systems Biology 1st Annual Meeting. NIH Campus, Bethesda, Maryland.

Alyson A. Kelvin. *Models of Influenza*. March 2012. Models of Human Diseases Seminar Series held at the University of Toronto. Toronto, Ontario, Canada.

Alyson A. Kelvin and James A. Johnston. *The Deubiquitinating Enzyme DUB3/USP17 Regulates Cellular Movement and Cancer Cell Invasion*. March 2007 Queen's University, Belfast.

Alyson A. Kelvin and James A. Johnston. *The Deubiquitinating Enzyme DUB3/USP17 Regulates Cellular Movement and Cancer Cell Invasion*. June 2006. Cancer Research Technologies UK grant proposal. Queen's University, Belfast.

Alyson A. Kelvin and James A. Johnston. May 2006. *The Deubiquitinating Enzyme DUB3/USP17 Regulates Cellular Movement and Cancer Cell Invasion*. PhD student seminars. Queen's University, Belfast.

Alyson A. Kelvin. *The deubiquitinating enzyme DUB3/USP17 regulates cellular movement and tumour invasion.* July 2006. Irish Society of Immunology Master Class. Manooth, Ireland.

Alyson Kelvin, James Burrows, Cheryl McFarlane and Jim Johnston. *DEUBIQUITINATING ENZYMES AS THERAPEUTIC TARGETS?* March 2006. Invest Northern Ireland grant review. Queen's University, Belfast.

XVII. Book Chapters

1. **Kelvin AA**, Banner D, Danesh A, Seneviratne C, Ochi A, and Kelvin DJ. Ferret TNF-alpha and IFN-gamma immunoassays. Trends in immunolabelled and related techniques. InTech, Croatia 2012;

XVIII. PATENTS

1. US Patent application title: DUB3 as a Cancer Therapy Target. Inventors: Johnston JA, James Burrows JF, and **Kelvin AA** http://www.faqs.org/patents/app/20090208446

XIX. SCIENCT OUTREACH – TV, PANEL DISCUSSIONS, AND COMMUNICATION ARTICLES

Below is a list of public outreach events I have participated in and includes TV episodes, panel discussions, podcast interviews, Canadian government public health messaging campaigns, public outreach articles, and event organization.

Nature Microbiology Community Blog Post. *Does last year's cold protect against this year's COVID? – Lessons from preclinical models on sequential coronavirus infections.* This was a blog post written by myself and my PhD student Magen Francis on our publication in Nature Communications. 20 October 2023 https://communities.springernature.com/posts/does-last-year-s-cold-protect-against-this-year-s-covid-lessons-from-preclinical-models-on-sequential-coronavirus-infections

CBC The Nature of Things with David Suzuki – Inside the Great Vaccine Race. Inside The Great Vaccine Race is a documentary that told the story of vaccine development during the COVID-19 pandemic. I am prominently featured in the documentary which told my story of discovering the outbreak of a new respiratory virus and the effort I made to develop a preclinical model for vaccine and therapeutic evaluation. The documentary will air on 5 November 2021. https://www.cbc.ca/natureofthings/episodes/inside-the-great-vaccine-race

CBC Kids News TV Episode – Vaccine Myths and Vaccine Truths. In the fall of 2021, I again worked with Isabelle MacNeil and Sabrina Fabian on a CBC Kids News program providing kids to dispel myths associated with COVID-19 vaccines. The episode covered various vaccine myths such as microchips and vaccines and autism. The interview by Isabelle MacNeil with Sabrina Fabian aired on 4 October 2021. https://www.cbc.ca/kidsnews/post/watch-why-there-are-no-microchips-in-the-covid-19-vaccine

Panel discussion for SNIWWOC, the Support Network for Indigenous Women and Women of Colour on COVID-19 vaccines. *For Us, About Us: A Vaccine Literacy Campaign*. Due to the success of the first SNIWWOC vaccine information panel, a second panel was planned. I led this second online panel discussion for SNIWWOC to disseminate information on COVID-19 vaccines. The panel occurred on 15 September 2021.

Panel discussion for SNIWWOC, the Support Network for Indigenous Women and Women of Colour on COVID-19 vaccines. *For Us, About Us: A Vaccine Literacy Campaign*. I led an online panel discussion for SNIWWOC regarding information on COVID-19 vaccines. The panel occurred on 26 August 2021.

Public health messaging campaign for COVID-19 vaccines in children with the Public Health Agency of Canada (PHAC). *How do I know a COVID-19 vaccine is safe for my youth without long-term data?* I worked with the Public Health Agency of Canada on a public health messaging campaign supporting the use of COVID-19 vaccines for children and youth. This video focused on the long-term safety of COVID-19 for youth. The campaign first aired on 10 August 2021 and has been featured on television and the internet. https://youtu.be/8xpZDopn8i4

Public health messaging campaign for COVID-19 vaccines in children with the Public Health Agency of Canada (PHAC). *Should youth get a COVID-19 vaccine as soon as it's available to them?* I worked with the Public Health Agency of Canada on a public health messaging campaign supporting the use of COVID-19 vaccines for children and youth. This video focused on if youth should get the COVID-19 vaccine when it's available. The campaign first aired on 10 August 2021 and has been featured on television and the internet. https://youtu.be/DYdkTAeUOVM

Podcast Interview for Turning Point with Priya Sam. *Dr. Alyson Kelvin on being a virologist during the pandemic.* I spoke with Priya Sam about the COVID-19 pandemic and life as a female scientist for her podcast Turning Point. The episode was released on 14 July 2021. https://youtu.be/VA21GwrYOYs

Podcast Interview for Science Monday with Dr. Bahijja Raimi-Abraham. *Episode 66: COVID19, Ferrets and more: Conversation with Dr Alyson Kelvin* *https://www.mondaysciencepodcast.com/listen/episode/1f3a92c9/episode-66-covid19-ferrets-and-more-conversation-with-dr-alyson-kelvin*

CBC Kids News TV Episode – WATCH — COVID-19 vaccine: Does it work? Is it safe? When can kids get it? In December 2020, I worked again with Isabelle MacNeil and Sabrina Fabian on another episode of CBC Kids News. This episode focused on the importance of COVID-19 vaccines and the timing of COVID-19 for kids. The interview with Isabelle MacNeil aired on 16 December 2020. https://www.cbc.ca/kidsnews/post/watch-your-covid-19-vaccine-questions-answered

Podcast Interview for The places Between with Lesli Boldt. *Canadian vaccine researcher Dr. Alyson Kelvin on COVID-19 vaccines.* I spoke with Lesli Boldt about SARS-CoV-2, COVID-19, and vaccine development. 24 November 2020. https://podcasts.apple.com/gb/podcast/canadian-vaccine-researcher-dr-alyson-kelvin-on-covid/id1510863577?i=1000501783892

Instagram Takeover for Science Connecting Youth Vancouver. This was an outreach project where I organized the posts for Science Connecting Youth Vancouver for an entire day. I went through my research and my daily activities. I was also able to give everyone a mini-tour of the Containment Level 3 facility. 30 October 2020.

Panel Discussion and Presentation for STEMPower. *COVID-19 and Vaccines.* This was an outreach program run by high school students to engage other high school students in science. 31 August 2020.

ALYSON KELVIN & KARINA TOP: Nova Scotia leads way in COVID-19 vaccine research. Dr. Karina Top of the IWK Health Centre and I wrote a perspectives piece for Halifax's The Chronicle Herald. The article was published on 30th July 2020. Our discussion covered the Canadian COVID-19 vaccines in development and the major efforts being put forth by researchers at Dalhousie University.

https://www.thechronicleherald.ca/opinion/local-perspectives/alyson-kelvin-karina-top-nova-scotia-leads-way-in-covid-19-vaccine-research-479301/

Podcast Beyond the Books, University of Waterloo. I spoke with the creators and hosts of the Podcast Beyond the Books on the 15th of July 2020. We discussed my research career and the progress of COVID-19 vaccines. https://anchor.fm/beyond-the-books/episodes/The-Covid-19-Vaccine-with-Dr--Alyson-Kelvin-egq8e4/a-a2n8pva

Dalhousie Medical Research Foundation Discussion Panel Leader. I led a community discussion on COVID-19 for the Dalhousie Medical Research Foundation on April 9, 2020. The discussion was called Open Dialogue - Confronting COVID-19. I gave a short presentation summarizing the SARS-CoV-2 outbreak and the work I have initiated on vaccines. I then answered questions from the online viewers. The discussion can be seen at this link - https://www.youtube.com/watch?v=CMnMzngmiQQ

CIC Halifax: Multidisciplinary Virtual Panel On The Coronavirus (COVID-19) – Discussion Panel Leader. I led a community discussion on COVID-19 for the Canadian International Council on March 25, 2020. The discussion was called Open Dialogue - Confronting COVID-19. I gave a short presentation summarizing the SARS-CoV-2 outbreak and the work I have initiated on vaccines. I then answered questions from the online viewers. The discussion can be seen at this link - https://www.facebook.com/DalMIPP/videos/1065074077194640/

Go Fund Me Medical Supplies for Wuhan – Initiative Organizer. I established a Go Fund Me initiative representing the Canadian Society for Virology and Dalhousie University to raise money to purchase and ship medical supplies including N95 masks, Tyvek suits, and gloves to Wuhan, China during the height of the 2019-2020 SARS-CoV-2 outbreak. Our goal was to raise $50,000 and we were able to collect more than $45,000. We sent thee supplies over 5 shipments to Wuhan, China. January-March 2020

Kindrachuk J and **Kelvin AA. How social media is changing research and reactions to coronavirus outbreak**. Dr. Jason Kindrachuk and I wrote an analysis of the 2019-2020 SARS-CoV-2 outbreak for a general science and social science communication platform called *The Conversation*. Our particular article analyzed how social media in 2020 changes the spread of information and science communication during a major infectious disease outbreak. Specifically, we suggest that members of the public look to their local, national, and international public health officers and organizations for directives on how to stay safe during this time. The Conversation. 30 January 2020
https://theconversation.com/how-social-media-is-changing-research-and-reactions-to-coronavirus-outbreak-130748

Soapbox Science Halifax 2019 Co-organizer. In 2019 I was a co-organizer of the Soapbox Science Halifax event in July 2019 held at the Halifax Seaport Market. The event features female scientists speaking about their research. Soapbox Science has two goals: 1.) to promote the contributions of women to science disciplines and their daily struggles with discrimination and exploitation, and 2.) to provide a platform for communicating scientific research to the general public. Halifax Seaport Market. July 2019

CBC Kids News TV Episode – Misinformation about measles. Preventing the spread of misinformation about measles. In 2019 I worked with Isabelle MacNeil and Sabrina Fabian on a CBC Kids program providing kids with accurate and digestible information on measles, the measles virus, and the measles vaccine. The interview by Isabelle MacNeil with Sabrina Fabian aired on 18 March 2019.
https://www.youtube.com/watch?v=pAQVOuwhYWY

Soapbox Science Halifax 2018 Speaker. In 2018 I was a speaker at the Soapbox Science Halifax event in June 2018 held at the Halifax Seaport Market. As mentioned above, the event features female scientists speaking

about their research. Soapbox Science has two goals: 1.) to promote the contributions of women to science disciplines and their daily struggles with discrimination and exploitation and 2.) to provide a platform for communicating scientific research to the general public. In 2018, I spoke to a crowd about my research with emerging viruses. Specifically, I gave a demonstration on how a pandemic virus is formed using candy props representing viruses and their genomes. Halifax Seaport Market. June 2018.

Let's Talk Microbiology 2016 Expert Panel Member. In 2016 I was an Expert Panel Member at the Let's Talk Microbiology event held at York University. I spoke to a large group of over 200 high school students on aspects of my work with emerging viruses. Specifically, I spoke about the epidemic details of the then current 2016 Zika Virus outbreak. York University. February 2016.

Scientists in Schools 2012-2017. Between 2012 and 2017 I volunteered for Scientist in Schools at Eglinton Public School in Toronto, Canada. Scientists in Schools is a program in Canadian primary schools to bring engaging science based activities to children to encourage active learning. https://www.scientistsinschool.ca/ I was involved as a volunteer assisting science demonstrators who led mini-science experiments with the children.

XX. MANUSCRIPTS

I have authored **71** published manuscripts and **1** manuscript under review. My name appears in bold and the names of the students or postdoctoral fellows that I supervised are underlined.

1. Baker PH, Moyer M, Bai Y, Stafford LS, Kelvin, AA, Lee C, Kenney SP, and Langel SN. Intramammary infection of bovine H5N1 influenza virus in ferrets leads to transmission and mortality in suckling neonates. *Under Review and Biorxiv*. 2024. https://www.biorxiv.org/content/10.1101/2024.11.15.623885v2
2. Hu G, Do DN, Manafiazar G, **Kelvin AA**, Sargolzaei M, Plastow G, Wang Z, Davoudi P and Miar Y. Identifying Selection Signatures for Immune Response and Resilience to Aleutian Disease in Mink Using Genotype Data. *Frontiers in Genetics*. 2024 July 12; 15:1370891.
3. Garg R, Liu Q, Van Kessel J, Asavajaru A, Uhlemann EM, Joessel M, Hamonic G, Khatooni Z, Kroeker A, Lew J, Scruten E, Pennington P, Deck W, Prysliak T, Nickol M, Apel F, Courant T, **Kelvin AA**, Van Kessel A, Collin N, Gerdts V, Köster W, Falzarano D, Racine T, and Banerjee A. Efficacy of a stable broadly protective subunit vaccine platform against SARS-CoV-2 variants of concern. *Vaccine.* 2024 May 19:S0264-410X(24)00586-3. doi: 10.1016/j.vaccine.2024.05.028.
4. Masirika LM, Kumar A, Dutt M, Ostadgavahi AT, Hewins B, Nadine MB, Steeven BK, Mweshi FK, Mambo LM, Mbiribindi JB, Siangoli FB, **Kelvin AA**, Udahemuka JC, Kelvin P, Flores L, Kelvin DJ, and Sganzerla Martinez G. Complete Genome Sequencing, Annotation, and Mutational Profiling of the Novel Clade I Human Mpox Virus, Kamituga Strain. *J Infect Dev Ctries.* 2024 Apr 30;18(4):600-608. doi: 10.3855/jidc.20136.
5. Jansen EB, Ostadgavahi AT, Hewins B, Buchanan R, Thivierge BM, Sganzerla Martinez G, Goncin U, Francis ME, Swan CL, Scruten E, Bell J, Darbellay J, Facciuolo A, Falzarano D, Gerdts V, Fenton ME, Hedlin P, Kelvin DJ, and **Kelvin AA**. PASC (Post Acute Sequelae of COVID-19) is associated with decreased neutralizing antibody titers and increased inflammatory cytokines depending on sex. ***Scientific Reports***. 2024. Apr 29; 14(1):9854. doi: 10.1038/s41598-024-60089-4.
6. Nuñez IA, Jang H, Huang Y, **Kelvin A**, and Ross TM. Influenza virus immune imprinting dictates the clinical outcomes in ferrets challenged with highly pathogenic avian influenza virus H5N1. ***Frontiers Veterinary Science***. 2023 Dec 19;10:1286758. doi: 10.3389/fvets.2023.1286758. eCollection 2023. PMID: 38170075

7. Kumar A, Dutt M, Dehury B, Sganzerla Martinez G, Swan CL, **Kelvin AA**, Richardson CD, and Kelvin DJ. Inhibition potential of natural flavonoids against selected omicron (B.1.19) mutations in the spike receptor binding domain of SARS-CoV-2: a molecular modeling approach. Journal of ***Biomolecular Structure and Dynamics***. 2023. Dec 19:1-15. doi: 10.1080/07391102.2023.2291165. PMID: 38115191
8. Rouhana S, Jacyniak K, Francis ME, Falzarano D, **Kelvin AA**, and Pyle WG. Sex differences in the cardiac stress response following SARS-CoV-2 infection of ferrets. ***American Journal of Physiology Heart Circulatory Physiology***. 2023. Nov 1; 325(5):H1153-H1167. doi: 10.1152/ajpheart.00101.2023.
9. Francis ME, Jansen EB, Yourkowski A, Selim A, Swan CL, MacPhee BK, Thivierge B, Buchanan R, Lavender KJ, Darbellay J, Rogers MB, Lew J, Gerdts V, Falzarano D, Skowronski DM, Sjaarda C, and **Kelvin AA**. Previous infection with seasonal coronaviruses does not protect male Syrian hamsters from challenge with SARS-CoV-2. ***Nature Communications***. 2023. Sep 26; 14(1):5990. doi: 10.1038/s41467-023-41761-1.
10. Swan CL, Dushimiyimana V, Ndishimye P, Buchanan R, Yourkowski A, Semafara S, Nsanzimana S, Francis ME, Thivierge B, Lew J, Facciuolo A, Gerdts V, Falzarano D, Sjaarda C, Kelvin DJ, Bitunguhari L, and **Kelvin AA**. Third COVID-19 vaccine dose boosts antibody function in Rwandans with high HIV viral load. ***iScience***. 2023. Sep 19;26(10):107959. doi: 10.1016/j.isci.2023.107959. eCollection 2023 Oct 20.
11. Ahmed N, Francis ME, Ahmed N, **Kelvin AA**, and Pezacki JP. microRNA-185 Inhibits SARS-CoV-2 Infection through the Modulation of the Host's Lipid Microenvironment. ***Viruses***. 2023. Sep 14; 15(9):1921. doi: 10.3390/v15091921. PMID: 37766327
12. Zeng TS, Yang DS, **Kelvin AA**, and Kelvin DJ. Host Transcriptome Analysis of Ferret Tissues Following Henipavirus Infection. ***Methods in Molecular Biology***. 2023. 2682:281-299. doi: 10.1007/978-1-0716-3283-3_20.PMID: 37610589
13. Hu G, Do DN, Manafiazar G, **Kelvin AA**, Sargolzaei M, Plastow G, Wang Z, and Miar Y. Population genomics of American mink using genotype data. ***Frontiers in Genetics***. 2023. May 9; 14:1175408. doi: 10.3389/fgene.2023.1175408. eCollection 2023.PMID: 37274788
14. Facciuolo A, Van Kessel J, Kroeker A, Liao M, Lew JM, Falzarano D, **Kelvin AA**, Gerdts V, and Napper S. Longitudinal analysis of SARS-CoV-2 reinfection reveals distinct kinetics and emergence of cross-neutralizing antibodies to variants of concern. ***Frontiers in Microbiology***. 2023. Mar 29; 14:1148255. doi: 10.3389/fmicb.2023.1148255. eCollection 2023. PMID: 37065160.
15. Dutt M, Kumar A, Rout M, Dehury B, Martinez G, Ndishimye P, **Kelvin AA**, and Kelvin DJ. Drug repurposing for Mpox: Discovery of small molecules as potential inhibitors against DNA-dependent RNA polymerase using molecular modeling approach. ***Journal of Cellular Biochemistry***. 2023. May; 124(5):701-715. doi: 10.1002/jcb.30397. Epub 2023 Mar 22. PMID: 36946432
16. **Kelvin AA** and Falzarano DF. The influenza universe in an mRNA vaccine. ***Science***. 2022. Nov 25; 378(6622):827-828
17. Hu G, Do DN, Davoudi P, Manafiazar G, Kelvin AA, Plastow G, Wang Z, Sargolzaei M, and Miar Y. Genetic and Phenotypic Correlations between Aleutian Disease Tests with Body Weight, Growth, and Feed Efficiency Traits in Mink. ***Journal of Animal Science.*** 2022. 100(12). skac346.
18. Jansen EB, Orvold SN, Swan CL, Yourkowski A, Thivierge BM, Francis ME, Ge A, Rioux M, Darbellay J, Howland JG, and **Kelvin AA**. After the virus has cleared – Can preclinical models be employed for Long COVID research? ***Plos Pathogens***. 2022. 18(9): e1010741
19. Hewins B, Richardson C, Rubino S, **Kelvin A**, Ostadgavahi AT, Kelvin DJ. Molecular mechanisms responsible for SARS-CoV-2 antibody waning and vaccine escape in Omicron sublineages BA.4 and BA.5. ***Journal of Infection in Developing Countries***. 2022. 16(7): 1122-1125.

20. Hewins B, Rahman M, Bermejo-Martin JF, **Kelvin AA**, Richardson CD, Rubino S, Kumar A, Ndishimye P, Toloue AO, Mahmud-Al-Rafat A, and Kelvin DJ. Alpha, Beta, Delta, Omicron, and SARS-CoV-2 Breakthrough Cases: Defining Immunological Mechanisms for Vaccine Waning and Vaccine-Variant Mismatch. ***Frontiers in Virology***. 2022. 2:849936. doi: 10.3389/fviro.2022.849936

21. Francis ME, Goncin U, Kroeker A, Swan C, Ralph R, Lu Y, Etzioni AL, Falzarano D, Gerdts V, Machtaler S, Kindrachuk J, and **Kelvin AA**. SARS-CoV-2 infection in the Syrian hamster model causes inflammation as well as type I interferon dysregulation in both respiratory and non-respiratory tissues including the heart and kidney. ***Plos Pathogens***. 2021; 17(7): e1009705. doi: 10.1371/journal.ppat.1009705. PMID: 34265022

22. Foley MK, Searle SD, Toloue A, Booth R, Falkenham A, Falzarano D, Rubino S, Francis ME, McNeil M, Richardson C, LeBlanc J, Olford S, Andrew MK, McNeil SA, Clarke B, Rockwood K, Kelvin DJ, and **Kelvin AA**. Centenarians and extremely old people living with frailty can elicit durable SARS-CoV-2 spike specific IgG antibodies with virus neutralization functions following virus infection. ***EClinical Medicine***. 2021; 37:100975 doi: 10.1016/j.eclinm.2021.100975. PMID: 34222846

23. Francis ME, Richardson B, Goncin U, McNeil M, Rioux M, Foley MK, Ge A, Pechous RD, Kindrachuk J, Cameron CM, Richardson C, Lew J, Machtaler S, Cameron MJ, Gerdts V, Falzarano D, and **Kelvin AA**. Sex and age bias viral burden and interferon responses during SARS-CoV-2 infection in ferrets. ***Scientific Reports***. 2021; 11(1):14536. doi: 10.1038/s41598-021-93855-9.

24. Rioux M, Francis ME, Swan CL, Ge A, Kroeker A, **Kelvin AA**. The Intersection of Age and Influenza Severity: Utility of Ferrets for Dissecting the Age-Dependent Immune Responses and Relevance to Age-Specific Vaccine Development. ***Viruses*****.** 2021; 13(4):678. https://doi.org/10.3390/v13040678

25. Koff WC, Schenkelberg T, Williams T, Baric RS, McDermott A, Cameron CM, Cameron MJ, Friemann MB, Kawaoka Y, **Kelvin AA**, Ross TM, Schultz-Cherry S, Mastro T, Priddy FH, Moore KA, Ostrowsky JT, Osterholm MT, and Goudsmit J. Development and deployment of COVID-19 vaccines for those most vulnerable. ***Science Translational Medicine***. 2021; 13(579):eabd1525

26. Forbes KM, Anzala O, Carlson CJ, **Kelvin AA**, Kuppalli K, Leroy EM, Maganga GD, Masika MM, Mombo IM, Mwaengo DM, Niama RF, Nziza J, Ogola J, Pickering BS, Rasmussen AL, Sironen T, Vapalahti O, Webala PW, Kindrachuk J. (2021). Towards a coordinated strategy for intercepting human disease emergence in Africa. Lancet Microbe. 2(2): e51-e52.

27. Tedim AP, Almansa R, Domínguez-Gil M, González-Rivera M, Micheloud D, Ryan P, Méndez R, Blanca-López N, Pérez-García F, Bustamante E, Manuel Gómez J, Doncel C, Trapiello W, **Kelvin AA**, Booth R, Ostadgavahi AT, Oneizat R, Puertas C, Barbé F, Ferrer R, Menéndez R, Bermejo-Martin JF, Eiros JM, Kelvin DJ, Torres A. Comparison of real-time and droplet digital PCR to detect and quantify SARS-CoV-2 RNA in plasma. ***European Journal of Clinical Investigation.*** 2021 Jan 29; e13501. doi: 10.1111/eci.13501.

28. Bermejo-Martin JF, González-Rivera M, Almansa R, Micheloud D, Tedim AP, Domínguez-Gil M, Resino S, Martín-Fernández M, Ryan Murua P, Pérez-García F, Tamayo L, Lopez-Izquierdo R, Bustamante E, Aldecoa C, Gómez JM, Rico-Feijoo J, Orduña A, Méndez R, Fernández Natal I, Megías G, González-Estecha M, Carriedo D, Doncel C, Jorge N, Ortega A, de la Fuente A, Del Campo F, Fernández-Ratero JA, Trapiello W, González-Jiménez P, Ruiz G, **Kelvin AA**, Ostadgavahi AT, Oneizat R, Ruiz LM, Miguéns I, Gargallo E, Muñoz I, Pelegrin S, Martín S, García Olivares P, Cedeño JA, Ruiz Albi T, Puertas C, Berezo JÁ, Renedo G, Herrán R, Bustamante-Munguira J, Enríquez P, Cicuendez R, Blanco J, Abadia J, Gómez Barquero J, Mamolar N, Blanca-López N, Valdivia LJ, Fernández Caso B, Mantecón MÁ, Motos A, Fernandez-Barat L, Ferrer R, Barbé F, Torres A, Menéndez R, Eiros JM, Kelvin DJ. Viral RNA load in plasma is associated with critical illness and a dysregulated host response in COVID-19. ***Critical Care.*** 2020 14;24(1):691

29. Rioux ML, McNeil M, Francis ME, Dawe N, Foley M, Langley J, and **Kelvin AA.** The Power of First Impressions: Can Influenza Imprinting during Infancy Inform Vaccine Design? Infant Immune Imprinting in the context of influenza vaccination. ***Vaccines***. 2020. 8(3): E546.

30. Heindel DW, Koppolu S, Zhang Y, Kasper B, Meche L, Vaiana CA, Bissel S, Carter CE, **Kelvin AA**, Elaish M, Lopez-Orozco J, Zhang B, Zhou B, Chou TW, Lashua LP, Hobman TC, Ross T, Ghedin E, Mahal LK. Glycomic analysis of host-response reveals high mannose as a key mediator of influenza severity. ***PNAS***. 2020; 117(43): 26926 - 26935

31. **Kelvin AA** and Halperin S. COVID-19 in Children: the link in the transmission chain. ***Lancet Infectious Diseases*** 2020; 20, 4

32. Rahim MMA, Parsons BD, Price EL, Slaine PD, Chilvers BL, Seaton GS, Wight A, Medina-Luna D, Dey S, Grandy SL, Anderson LE, Cuervo NZ, Grandvaux N, Gaglia MM, **Kelvin AA**, Khaperskyy DA, McCormick C, Makrigiannis AP. Defective influenza A virus RNA products mediate MAVS-dependent upregulation of human leukocyte antigen class I proteins. ***Journal of Virology***. 2020; JVI.00165-20. doi:10.1128/JVI.00165-20

33. Ralph R, Lew J, Zeng T, Francis ME, Bei X, Roux ML, Toloue A, Rubino S, Dawe NJ, Al-Ahdal MN, Kelvin DJ, Richardson C, Kindrachuk J, Falzarano D, and **Kelvin AA.** 2019-nCoV (Wuhan virus), A Novel Coronavirus, linked to Chinese Pneumonia Cases: Human-to-Human Transmission, Travel-Related Cases and Vaccine Readiness. ***Journal of Infection in Developing Countries.*** 2020. 14(1): 3-17

34. **Kelvin AA** and Zambon M. Influenza imprinting in childhood and the influence on vaccine response later in life. ***Eurosurveillance.*** 2019; 24, 48.

35. Francis ME, McNeil M, Dawe NJ, Foley MK, King ML, Ross TM, and **Kelvin AA.** Historical H1N1 Influenza Virus Imprinting Increases Vaccine Protection by Influencing the Activity and Sustained Production of Antibodies Elicited at Vaccination in Ferrets. ***Vaccines*** 2019; *7*, 133.

36. Bissel SJ, Carter CE, Wang G, Johnson SK, Lashua LP, **Kelvin A**, Wiley CA, Ghedin E, Ross TM. Age-related pathology associated with H1N1 A/California/07/2009 influenza virus infection. ***American Journal of Pathology.*** 2019; 1. pii: S0002-9440(19)30749-7

37. Francis ME, King ML, and **Kelvin AA.** Back to the Future for Influenza Preimmunity—Looking Back at Influenza Virus History to Infer the Outcome of Future Infections. ***Viruses*** 2019; 11(2), 122; https://doi.org/10.3390/v11020122

38. **Kelvin AA**, Banner D, Pamplona L, Alencar C, Rubino S, Heukelbach J. ZIKATracker: A mobile App for reporting cases of ZIKV worldwide. ***Journal of Infection in Developing Countries.*** 2016 Feb;10(2):113-5

39. Heukelbach J, Alencar CH, **Kelvin AA**, De Oliveira WK, Pamplona de Goes CL. Zika virus outbreak in Brazil. ***Journal of Infection in Developing Countries.*** 2016;10(2):116-20

40. Farooqui A, Liu W, Kelvin DJ, Zeng T, Liu Y, Zhang L, Khan A, Wu X, Wu R, Wu S, Huang L, Cai Y, **Kelvin AA**, Paquette SG, Hu K, Zheng N, Chen H, Xu S, Lin C, Sun P, Yao Z, Wang J, Ma H, Zhu Z, Lin P, Chen W, Fang X, Bermejo-Martin JF, Leon AJ. Probable Hospital Cluster of H7N9 Influenza Infection. ***New England Journal of Medicine.*** 2016 Feb 11;374(6):596-8

41. Farooqui A, Huang L, Wu S, Cai Y, Su M, Lin P, Chen W, Fang X, Zhang L, Liu Y, Zheng T, Paquette SG, Khan A, **Kelvin AA** and Kelvin DJ. Assessment of antiviral properties of Peramivir against H7N9 avian influenza virus in an experimental mouse model. ***Antimicrobial Agents and Chemotherapeutics.*** 2015 Dec;59(12):7255-64

42. Paquette SG, Banner D, Huang SS, Almansa R, Leon A, Xu L, Bartoszko J, Kelvin DJ, and **Kelvin AA**. Influenza Transmission in the Mother-Infant Dyad Leads to Severe Disease, Mammary Gland Infection, and Pathogenesis by Regulating Host Responses. ***PLoS Pathogens.*** 2015 Oct;11(10):e1005173

43. Huang SS, Banner D, Paquette SG, Leon AJ, **Kelvin AA**, and Kelvin DJ. Pathogenic influenza B virus in the ferret model establishes lower respiratory tract infection. ***Journal of General Virology.*** 2014 Oct;95(Pt 10):2127-39. PMCID:PMC4165929

44. **Kelvin AA**, Degousee N, Banner D, Stefanski E, Leon AJ, Angoulvant D, Paquette SG, Huang SS, Danesh A, Robbins CS, Noyan H, Husain M, Lambeau G, Gelb M, Kelvin DJ, and Rubin BB. Lack of group X secreted phospholipase A(2) increases survival following pandemic H1N1 influenza infection. ***Virology.*** 2014 Apr;454-455:78-92. PMCID:PMC4106042

45. Lin Z, Farooqui A, Li G, Wong GK, Mason AL, Banner D, **Kelvin AA**, Kelvin DJ, and Leon AJ. Next-generation sequencing and bioinformatic approaches to detect and analyze influenza virus in ferrets. ***Journal of Infection in Developing Countries.*** 2014;8(4):498-509

46. Paquette SG, Banner D, Chi le TB, Leon AJ, Xu L, Ran L, Huang SS, Farooqui A, Kelvin DJ, and **Kelvin AA**. Pandemic H1N1 influenza A directly induces a robust and acute inflammatory gene signature in primary human bronchial epithelial cells downstream of membrane fusion. ***Virology.*** 2014 Jan 5;448:91-103

47. Paquette SG, Huang SS, Banner D, Xu L, Leon A, **Kelvin AA**, and Kelvin DJ. Impaired heterologous immunity in aged ferrets during sequential influenza A H1N1 infection. ***Virology.*** 2014 Sep;464-465:177-83. PMCID:PMC4157083

48. Sidahmed AM, Leon AJ, Banner D, **Kelvin AA**, Rowe T, Boudakov I, Degousse N, Rubin BB, and Kelvin DJ. CXCL14 deficiency does not impact the outcome of influenza or Escherichia coli infections in mice. ***Journal of Infection in Developing Countries.*** 2014 Oct;8(10):1301-6
*Co-analyzed the data and co-wrote the manuscript.

49. Huang SS, Lin Z, Banner D, Leon AJ, Paquette SG, Rubin B, Rubino S, Guan Y, Kelvin DJ, and **Kelvin AA**. Immunity toward H1N1 influenza hemagglutinin of historical and contemporary strains suggests protection and vaccine failure. ***Scientific Reports.*** 2013;3:1698. PMCID:PMC3633051

50. Leon AJ, Banner D, Xu L, Ran L, Peng Z, Yi K, Chen C, Xu F, Huang J, Zhao Z, Lin Z, Huang SH, Fang Y, **Kelvin AA**, Ross TM, Farooqui A, and Kelvin DJ. Sequencing, annotation, and characterization of the influenza ferret infectome. ***Journal of Virology.*** 2013 Feb;87(4):1957-66. PMCID:PMC3571481

51. Zhu H, Wang D, Kelvin DJ, Li L, Zheng Z, Yoon SW, Wong SS, Farooqui A, Wang J, Banner D, Chen R, Zheng R, Zhou J, Zhang Y, Hong W, Dong W, Cai Q, Roehrl MH, Huang SS, **Kelvin AA**, Yao T, Zhou B, Chen X, Leung GM, Poon LL, Webster RG, Webby RJ, Peiris JS, Guan Y, and Shu Y. Infectivity, transmission, and pathology of human-isolated H7N9 influenza virus in ferrets and pigs. ***Science.*** 2013 Jul 12;341(6142):183-6

52. Banner D and **Kelvin AA**. The current state of H5N1 vaccines and the use of the ferret model for influenza therapeutic and prophylactic development. ***Journal of Infection in Developing Countries.*** 2012 Jun;6(6):465-9

53. Cameron MJ, **Kelvin AA**, Leon AJ, Cameron CM, Ran L, Xu L, Chu YK, Danesh A, Fang Y, Li Q, Anderson A, Couch RC, Paquette SG, Fomukong NG, Kistner O, Lauchart M, Rowe T, Harrod KS, Jonsson CB, and Kelvin DJ. Lack of innate interferon responses during SARS coronavirus infection in a vaccination and reinfection ferret model. ***PLoS One.*** 2012;7(9):e45842. PMCID:PMC3454321

54. Fang Y, Banner D, **Kelvin AA**, Huang SS, Paige CJ, Corfe SA, Kane KP, Bleackley RC, Rowe T, Leon AJ, and Kelvin DJ. Seasonal H1N1 influenza virus infection induces cross-protective pandemic H1N1 virus immunity through a CD8-independent, B cell-dependent mechanism. ***Journal of Virology.*** 2012 Feb;86(4):2229-38. PMCID:PMC3302411

55. Huang SS, Banner D, Degousee N, Leon AJ, Xu L, Paquette SG, Kanagasabai T, Fang Y, Rubino S, Rubin B, Kelvin DJ and **Kelvin AA**. Differential pathological and immune responses in newly weaned ferrets are associated with a mild clinical outcome of pandemic 2009 H1N1 infection. ***Journal of Virology.*** 2012 Dec;86(24):13187-201. PMCID:PMC3503035

56. **Kelvin AA**, Meloni D, Sansonetti P, Borghetto I, Rowe T, Santangelo R, Pisu D, Cameron CM, Paglietti B, Banner D, Farooqui A, Marongiu P, Santona A, Fadda G, Kelvin DJ, and Rubino S. Influenza monitoring in Sardinia, Italy identifies H3 subtype in Mediterranean wild migratory birds. ***Journal of Infection in Developing Countries.*** 2012;6(11):786-97

57. Paquette SG, Banner D, Zhao Z, Fang Y, Huang SS, Leon AJ, Ng DC, Almansa R, Martin-Loeches I, Ramirez P, Socias L, Loza A, Blanco J, Sansonetti P, Rello J, Andaluz D, Shum B, Rubino S, de Lejarazu

RO, Tran D, Delogu G, Fadda G, Krajden S, Rubin BB, Bermejo-Martin JF, **Kelvin AA**, and Kelvin DJ. Interleukin-6 is a potential biomarker for severe pandemic H1N1 influenza A infection. ***PLoS One.*** 2012;7(6):e38214. PMCID:PMC3367995

58. Danesh A, Cameron CM, Leon AJ, Ran L, Xu L, Fang Y, **Kelvin AA**, Rowe T, Chen H, Guan Y, et al. Early gene expression events in ferrets in response to SARS coronavirus infection versus direct interferon-alpha2b stimulation. ***Virology.*** 2011 Jan 5;409(1):102-12

59. de l, V[#], **Kelvin AA[#]**, Dunican DJ, McFarlane C, Burrows JF, Jaworski J, Stevenson NJ, Dib K, Rappoport JZ, Scott CJ, et al. The deubiquitinating enzyme USP17 is essential for GTPase subcellular localization and cell motility. ***Nature Communications.*** 2011;2:259. PMCID:PMC3072070
[#]Co-first author

60. Huang SS, Banner D, Fang Y, Ng DC, Kanagasabai T, Kelvin DJ, and **Kelvin AA**. Comparative analyses of pandemic H1N1 and seasonal H1N1, H3N2, and influenza B infections depict distinct clinical pictures in ferrets. ***PLoS One.*** 2011;6(11):e27512. PMCID:PMC3217968

61. **Kelvin AA**. Outbreak of Chikungunya in the Republic of Congo and the global picture. ***Journal of Infection in Developing Countries.*** 2011 Jun;5(6):441-4

62. **Kelvin AA**, Banner D, Silvi G, Moro ML, Spataro N, Gaibani P, Cavrini F, Pierro A, Rossini G, Cameron MJ, Bermejo-Martin JF, Paquette SG, Xu L, Danesh A, Farooqui A, Borghetto I, Kelvin DJ, Sambri V, and Rubino S. Inflammatory cytokine expression is associated with chikungunya virus resolution and symptom severity. ***PLoS Neglected Tropical Diseases.*** 2011 Aug;5(8):e1279. PMCID:PMC3156690

63. **Kelvin AA**. Outbreak of cholera in the Republic of Congo and the Democratic Republic of Congo, and cholera worldwide. ***Journal of Infection Developing Countries.*** 2011 Oct;5(10):688-91

64. McFarlane C, **Kelvin AA**, de l, V, Govender U, Scott CJ, Burrows JF, and Johnston JA. The deubiquitinating enzyme USP17 is highly expressed in tumor biopsies, is cell cycle regulated, and is required for G1-S progression. ***Cancer Research.*** 2010 Apr 15;70(8):3329-39

65. Rowe T, Banner D, Farooqui A, Ng DC, **Kelvin AA**, Rubino S, Huang SS, Fang Y, and Kelvin DJ. In vivo ribavirin activity against severe pandemic H1N1 Influenza A/Mexico/4108/2009. ***Journal of General Virology.*** 2010 Dec;91(Pt 12):2898-906

66. Stevenson NJ, McFarlane C, Ong ST, Nahlik K, **Kelvin A**, Addley MR, Long A, Greaves DR, O'Farrelly C, and Johnston JA. Suppressor of cytokine signalling (SOCS) 1 and 3 enhance cell adhesion and inhibit migration towards the chemokine eotaxin/CCL11. ***FEBS Letters.*** 2010 Nov 5;584(21):4469-74

67. Burrows JF, **Kelvin AA**, McFarlane C, Burden RE, McGrattan MJ, de l, V, Govender U, Quinn DJ, Dib K, Gadina M, Scott CJ, and Johnston JA. USP17 regulates Ras activation and cell proliferation by blocking RCE1 activity. ***Journal of Biological Chemistry.*** 2009 Apr 3;284(14):9587-95. PMCID:PMC2666611

68. Danesh A, Seneviratne C, Cameron CM, Banner D, Devries ME, **Kelvin AA**, Xu L, Ran L, Bosinger SE, Rowe T, Czub M, Jonsson CB, Cameron MJ, and Kelvin DJ. Cloning, expression and characterization of ferret CXCL10. ***Molecular Immunology.*** 2008 Mar;45(5):1288-97

69. Devries ME, **Kelvin AA**, Xu L, Ran L, Robinson J, and Kelvin DJ. Defining the origins and evolution of the chemokine/chemokine receptor system. ***Journal of Immunology.*** 2006 Jan 1;176(1):401-15

70. Devries ME, Hosiawa KA, Cameron CM, Bosinger SE, Persad D, **Kelvin AA**, Coombs JC, Wang H, Zhong R, Cameron MJ, and Kelvin DJ. The role of chemokines and chemokine receptors in alloantigen-independent and alloantigen-dependent transplantation injury. ***Seminars in Immunology.*** 2003 Feb;15(1):33-48

71. Devries ME, Cao H, Wang J, Xu L, **Kelvin AA**, Ran L, Chau LA, Madrenas J, Hegele RA, and Kelvin DJ. Genomic organization and evolution of the CX3CR1/CCR8 chemokine receptor locus. ***Journal of Biological Chemistry.*** 2003 Apr 4;278(14):11985-94

72. Barlic J, Andrews JD, **Kelvin AA**, Bosinger SE, Devries ME, Xu L, Dobransky T, Feldman RD, Ferguson SS, and Kelvin DJ. Regulation of tyrosine kinase activation and granule release through β-arrestin by CXCR1. ***Nature Immunology*****.** 2000 Sept; 1(3): 227-233