



Immunology
UNIVERSITY OF TORONTO

IMMSA Graduate School Seminar

March 10, 2017

GRADUATE COORDINATOR

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GRADUATE ADMINISTRATION

Kate Sedore

Graduate Program Assistant

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**WHY DO YOUR GRADUATE WORK
WITH US?**

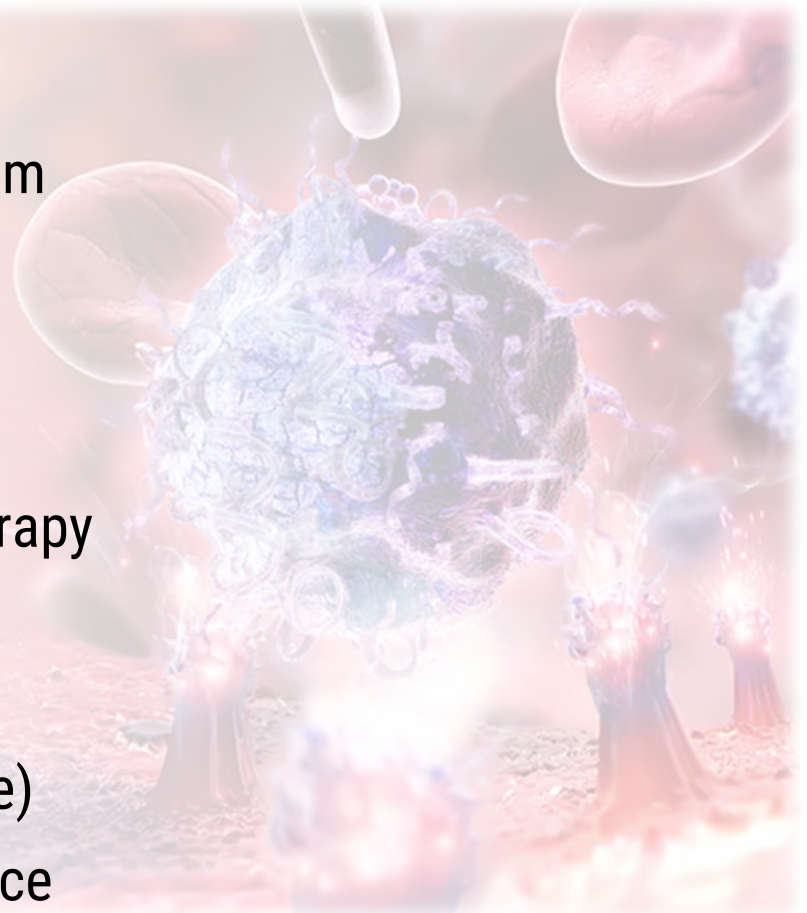
WHO WE ARE



- City wide academic unit
- Training programs:
 - Undergraduate
 - Graduate
 - Postdoctoral
- Research Powerhouse
- **Leading Immunology Program in Canada**

RESEARCH THEMES

- Cellular & Molecular Immunology
- Development of the Immune System
- Autoimmunity & Inflammation
 - Diabetes, SLE, MS, RA
- Primary Immunodeficiencies
- Cancer Immunology & Immunotherapy
- Infectious Diseases
 - Flu, HIV/AIDS
- Mucosal Immunology (Microbiome)
- Transplantation & Immune tolerance



WHO WE ARE

57 Faculty Members

Hospital for Sick Children 8

Medical Sciences Building 12

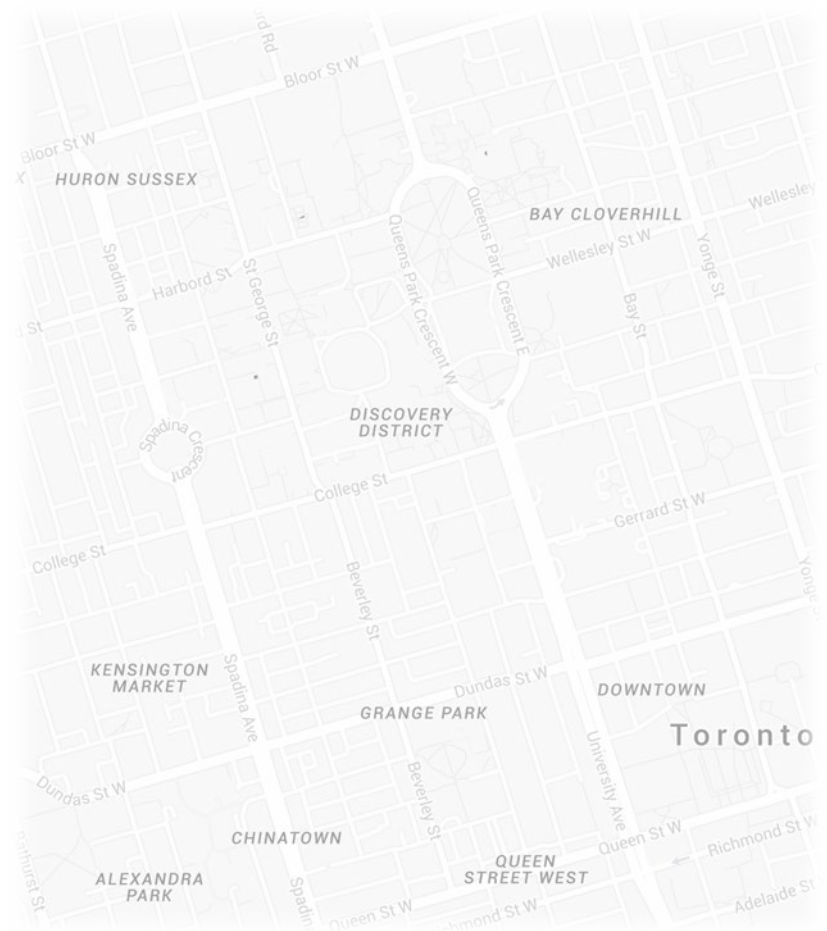
Mount Sinai Hospital 3

St. Michael's Hospital 2

Sunnybrook Research Inst. 8

University Health Network 23

U of T – Scarborough 1



RESEARCH POWERHOUSE

- Over 2,000 publications in past 10 years
 - With >37,000 citations
- >\$20M in operating grant support
- \$15M in recent infrastructure support
 - Host-Microbiome Research Network
- 120 Graduate students and over 220 Postdoctoral fellows

RESEARCH POWERHOUSE

Seminal Discoveries

- Identification of the T cell receptor
- Identification of early hematopoietic stem/progenitor cells
- Isolation of genes for Crohn's disease
- Identification of CTLA4 immune-regulatory function
- Function of adipose tissue regulatory T cells
- Characterization of tyrosine phosphatases, SHP1
- Isolation of primary immunodeficiency genes, CD3d
- Mechanisms of T cell co-stimulation
- Molecular characterization of positive selection of T cells
- Description of an independent intestinal Immune system
- Use of interferons for the treatment of SARS
- Development of an in vitro system for the generation of T cells

STUDENT LIFE



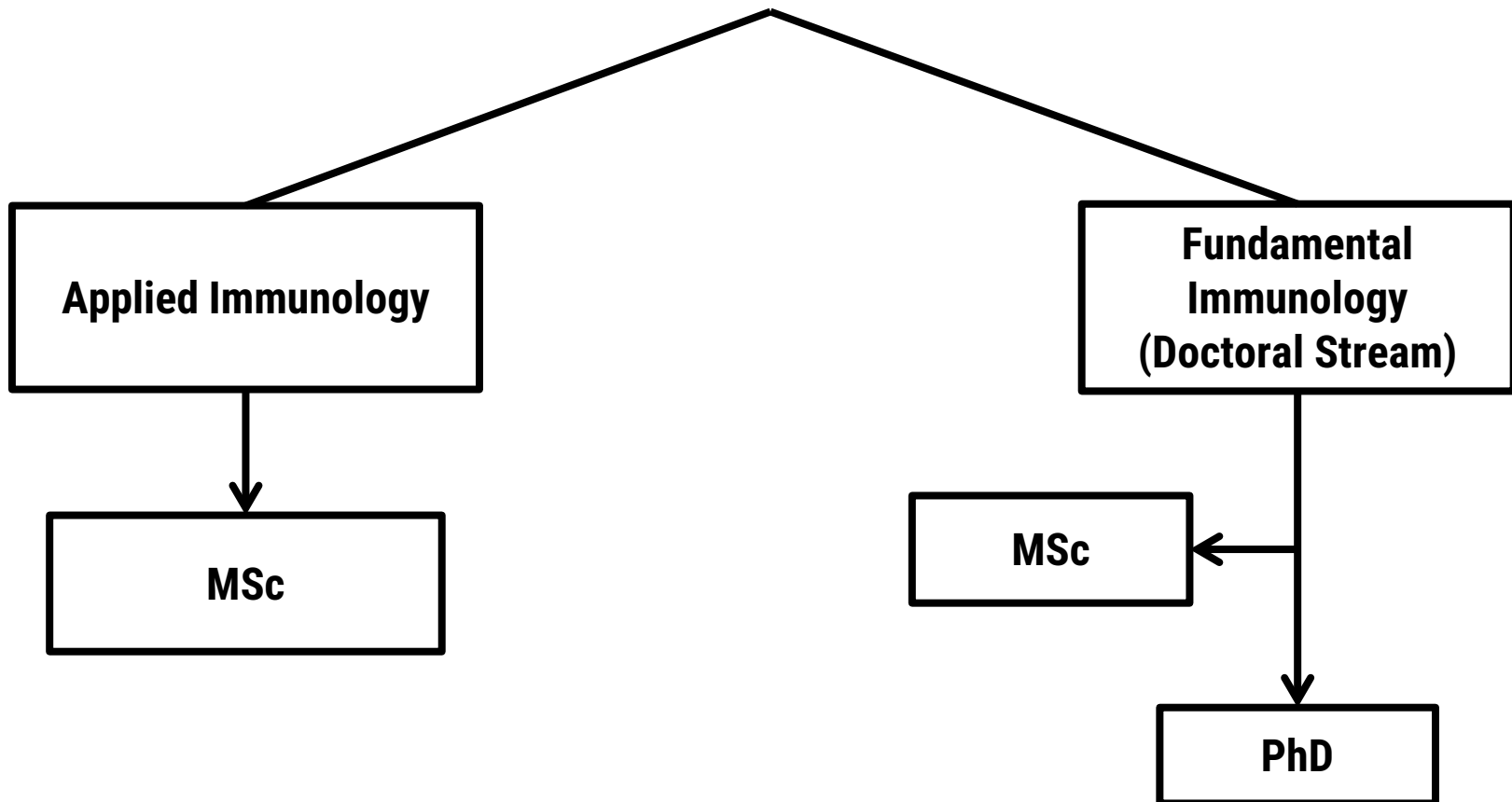
Immunology Graduate Students' Association (IGSA)

- Social events
- Community Outreach
- Fundraising
- Organized Sports

GRADUATE PROGRAMS

GRADUATE PROGRAMS IN IMMUNOLOGY

Graduate Program

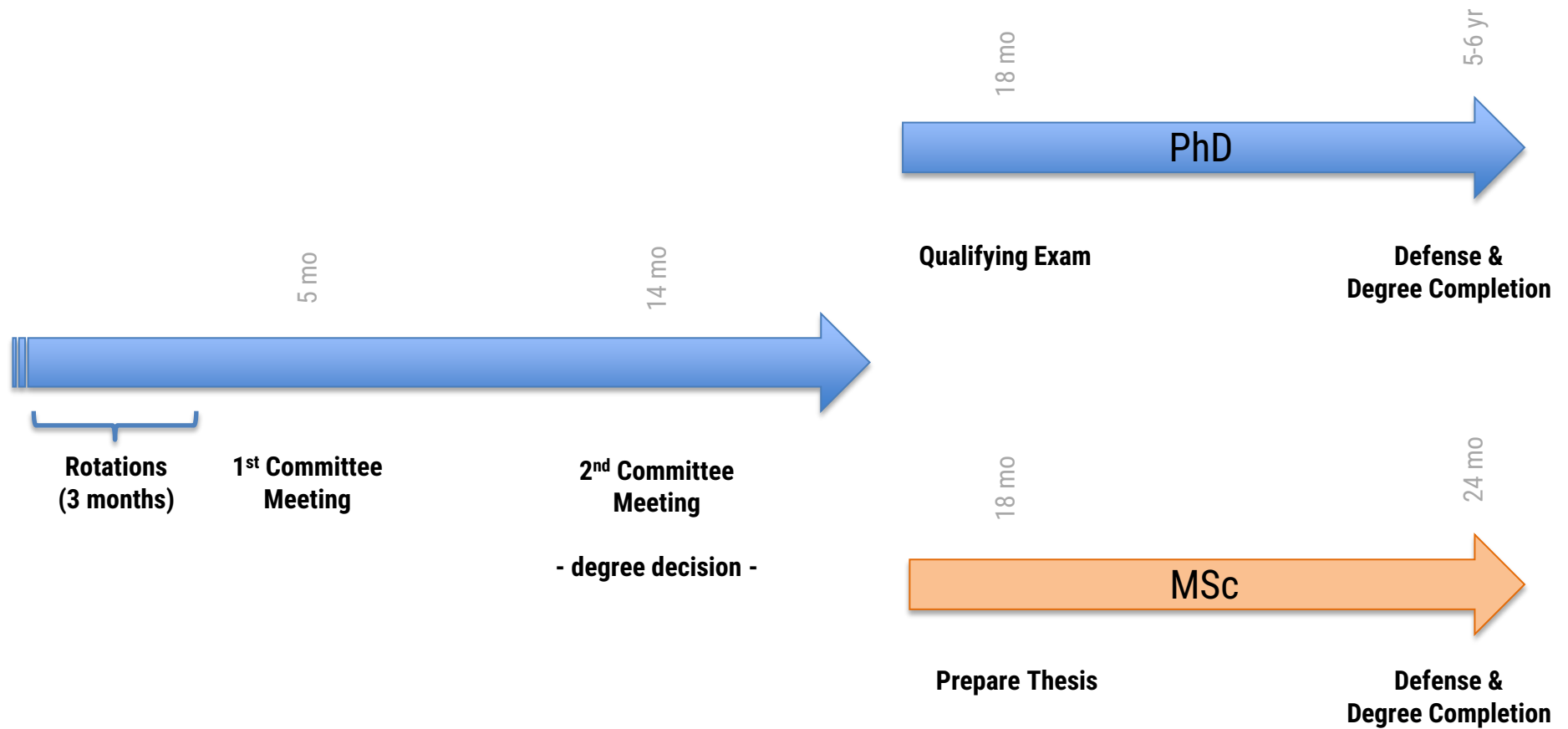


FUNDAMENTAL IMMUNOLOGY

FUNDAMENTAL IMMUNOLOGY

- An advanced research program intended to reflect a level of training consistent with the ability of the student to function as an independent research scientist
- Thesis-based; Successful completion of course work as well as a demonstrated ability to carry out research of publishable quality

TIMELINE



GRADUATE FUNDING – FUNDAMENTAL IMM

- Incoming students
 - \$18,000 + tuition fees
 - [~\$26,500 for domestic students]

- Students who successfully pass their qualifying/reclassification exam
 - \$20,000 + tuition fees
 - [~\$28,500 for domestic students]

APPLIED IMMUNOLOGY

HOW IS THIS PROGRAM DIFFERENT?

- Not necessarily hypothesis driven
- Focus is more on applying technical knowledge to solve problems and create efficiencies
 - assay development and optimization
 - hone skills desired by modern biomedical research companies
- Fixed-length (20 months; or 16 months with Advanced Standing)

HOW LONG IS THE PROGRAM?

STANDARD ENROLMENT PERIOD

ADVANCED STANDING ENROLMENT PERIOD

	Fall (Year 1)	Winter (Year 1)	Summer (Year 1)	Fall (Year 2)	Winter (Year 2)	Summer (Year 2)
Core Courses	IMM1450Y, IMM1435H, IMM2041H		IMM1550Y	IMM2550Y		IMM2551H
Auxiliary Courses	Two from the following: <ul style="list-style-type: none"> • IMM1428H • IMM1429H • IMM1430H 			Two from the following: <ul style="list-style-type: none"> • IMM 2888H • JBZ 1472H • JTB 2010H • JTB 2020H • JFK 1120H • JFK 1121H • LMP 1006H • LMP 1019H • LMP 1407H • BTC 1860H 		Practical Placement (either on- or off-campus)

DO I GET TO WORK IN A LAB?

- Yes!
- Major research project will be to develop a new assay / technique or improve upon an existing one that will ultimately benefit your host lab.
- At the end of the term, you'll submit a report on your findings and give an oral presentation.

WHAT CAN I DO WITH THIS DEGREE?

- **Business**

- Management Consulting
- Innovations Officer (MaRS)
- Market Analyst

- **Communications**

- Writing/Editing for Scientific Journals, Newspapers, etc.
- Technical Consultant/Tech Transfer Officer/Patent Agent
- Science Translation
- Regulatory affairs/Med Affairs

- **Government**

- Research and Development
- Office of Innovations
- Policy

- **Biotech Industry**

- Field or Application Scientist
- Product/Project Manager
- Pharma or Biotech Sales
- Food & Agricultural Immunology R&D
- Technologist for Immune Assays

- **Education**

- High School Teacher / Head of Science
- Science/Immunology Outreach Programs

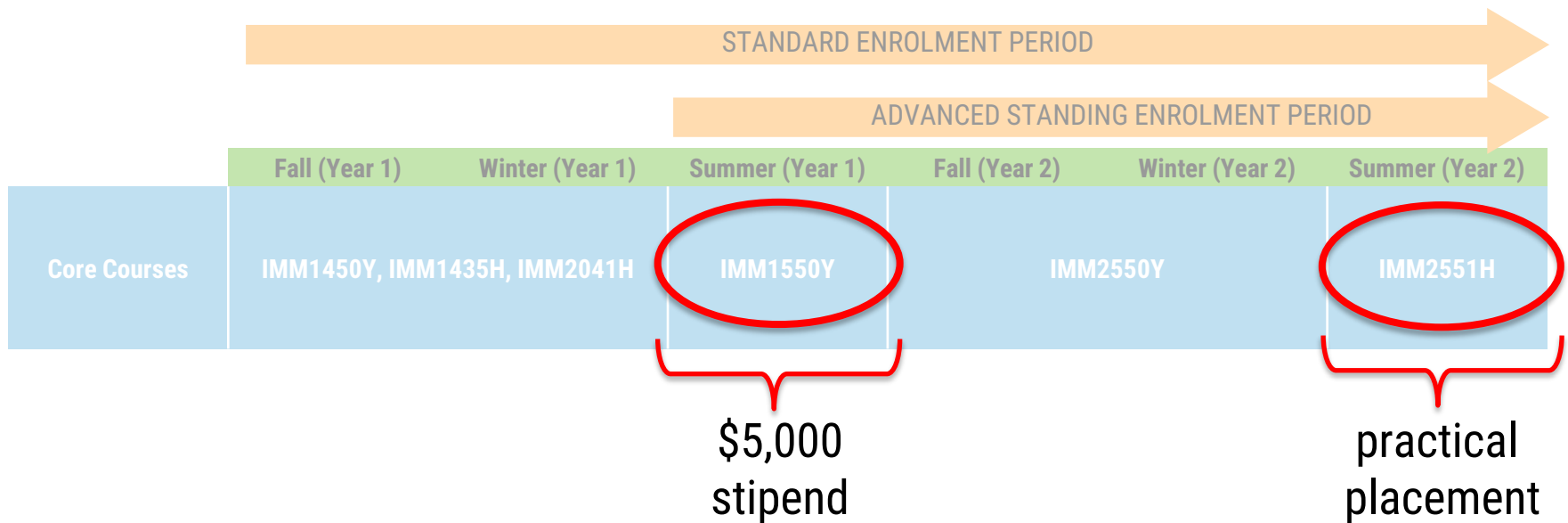
- **Non-profit**

- Independent Science Research Foundations
- Social Programs & Public/Global Health Organizations
- Public Policy & Research
- Laboratory Technologist at Hospitals or Academia

- **Preparation for MD/PhD/DDS**

GRADUATE FUNDING – APPLIED IMM

- Students in the Applied Immunology Program are not funded – however:



How do I apply for these programs?

GRADUATE ADMISSIONS

ADMISSION REQUIREMENTS

FUNDAMENTAL IMMUNOLOGY

- 4 year Life Sciences BSc, with at least a **B+** in the final two years (10 FCEs)
- For direct-entry PhD, must have **A-** in the final two years
- 4th year courses in Immunology
- Strong research experience, e.g. senior thesis or equivalent

APPLIED IMMUNOLOGY

- 4 year Life Sciences BSc, with at least a **B+** in the final two years (10 FCEs)
- 2nd/3rd year courses in Immunology
- Some lab experience
- Advanced Standing option:
 - IMM435H, IMM450Y and 2 of: IMM428H, IMM429H, IMM430H
 - Already have a research supervisor who is a Faculty Member in the Department of Immunology (usually your supervisor for IMM450Y)

SUPPORTING DOCUMENTS

- CV
- Letter of intent
 - max 2 pages, single spaced, 1-inch margins
- Three letters of reference
 - from people familiar with your academic and research capabilities
 - webform: questions + letter
- Transcripts
 - scanned is acceptable
 - official, final transcript required prior to registration

ONLINE APPLICATION

- Apply via the School of Graduate Studies
 - SGS Online Admissions Application:
<https://apply.sgs.utoronto.ca>
- DoI website for info on procedure, required documents, admissions FAQ
<http://uoft.me/applytoimmunology>

IMPORTANT DATES / DEADLINES

- Each year there is an **early** deadline and a **final** deadline. We highly encourage applicants to apply by the early deadline, especially international students
- For September 2017 starts:
 - Early: January 13, 2017
 - Final: **May 1, 2017**

ADMISSIONS ASSISTANCE

- Fundamental Program
 - Kate Sedore, MSB 7205
 - graduate.immunology@utoronto.ca
- Applied Program
 - Korosh Kianizad, MSB 7255A
 - applied.immunology@utoronto.ca