

# Department of Immunology

## Newsletter

image provided by Lori Waters

VOL VIII– ISSUE 1

May 2020

### **Message from the Chair, Dr. Juan Carlos Zúñiga-Pflücker**

The *Department of Immunology Newsletter* is back. After over a year without a Newsletter, I am happy to reconnect, and more so, as we experience new challenges brought about by the current pandemic. Nevertheless, I am inspired by the way that our staff, students and faculty have responded and risen to the occasion, ensuring that the department remains operational, delivering online courses and committee meetings.

We have adapted remarkably well to our new circumstances, holding virtual PhD presentations and defenses, final Applied MSc student presentations, and the upcoming Qualifying Exams. Moving forward, as you will note on the right-hand side, we will be re-starting our graduate student seminar presentations.

The latest *IMMpress Magazine* is out, another impactful issue, and just in time to fill your summer reading list.

We will also hold our upcoming Immunology Summer Retreat, Tuesday June 16<sup>th</sup>, using online tools, and I am very thankful to our IGSA leadership for their help in planning this celebration of all things Immunology at UofT. I am also happy to say that our department's alumna Prof. Barbara Kee, University of Chicago, will be our virtual Keynote speaker.

Unfortunately, our premier undergraduate event, the Ontario-Quebec Undergraduate Immunology Conference (OQUIC) was a victim of UofT closures. Nonetheless, I want to thank and acknowledge the IMMSA leadership for all their planning and diligence.

I know we are all itching to get back to our labs and perform the cutting-edge research that our department is known for. In the meantime, I can share that planning has started on how we will be allowed to restart, likely partially at first, in measured steps, while ensuring the safety and health of our immunology community.

I look forward to “seeing” you at upcoming events and hope that we can all stay safe and be together again in the near future.

### **UPCOMING SEMINARS**

#### **STUDENT SEMINARS – Online!**

**Join us online for the continuation of our 2019-20 Student Seminar Series – Wednesdays 10:30am beginning May 6th.**

**Zoom webinar info will be sent via email with the weekly seminar announcements.**

#### **May 6**

Identification of cytotoxic mechanisms in DN T cells for enhanced AML therapy

**Enoch Tin  
(Zhang lab)**

The role of flare macrophages during liver inflammation in chronic hepatitis B virus infected patients

**Juan Diego Sanchez Vasquez  
(Gehring lab)**

Effects of the aging gut microbiome on microglia in a model of demyelination

**Annie Pu  
(Gommerman lab)**

HIV susceptibility and correlates of genital inflammation in sub-Saharan African women

**James Pollock  
(Kaul lab)**

#### **May 13**

**Yota Ohashi  
(Hirano lab)**

**Nayanan Nathan  
(Girardin/Philpott labs)**

**Haadee Lone  
(Butler lab)**

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image provided by Lori Waters

### Graduate Program Update

#### Reclass/Qualifying Exams

Reclass/qualifying exams for 2<sup>nd</sup> year students will take place between May 15<sup>th</sup> and June 5<sup>th</sup>.

Faculty may be asked to serve as internal examiners, so please keep an eye out for emails from Kate (Graduate Immunology).

#### Admissions

We had an exceptional pool of applicants this year for both our Fundamental and Applied programs. Responses are still rolling in, and we will have an update soon on our incoming students.

#### Congratulations!

##### MSc (2019)

Tao Chan (Winer lab)  
Sai Wai Chung (MacParland lab)  
Sarah Colpitts (Paige lab)  
Ellie Doroshenko (Dunn lab)  
Dario Ferri (Wither lab)  
Jennifer Hoang (Eiwegger lab)  
Baweleta Isho (Poussier lab)  
Alexandra Johnson Valiente (Gehring lab)  
Alicia Kilfoy (Guidos lab)  
Jean-Soo Lee (Eiwegger lab)  
Sharon Ling (Yeung lab)  
Andrew Mazzanti (Iscove lab)  
Mohammad Saleh (Ostrowski/Zúñiga-Pflücker labs)  
Flora Wong (Mortha lab)  
Michelle Zuo (Guidos lab)

##### PhD (2019)

Dr. Mark Anczurowski (Hirano lab)  
Dr. Justin Tze Ho Chan (Ehrhardt lab)  
Dr. Edward Chen (Zúñiga-Pflücker lab)  
Dr. Kuan Lun William Chu (Watts lab)  
Dr. Maria Edilova (Watts lab)  
Dr. Alicia Fisch (Yeung lab)  
Dr. Ronald Galiwango (Kaul lab)

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Kitty Liu  
(McGaha lab)

May 20

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Jonah Lin  
(Ostrowski lab)

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Seungwoo Lee  
(Watts lab)

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Ryan Law  
(Ostrowski lab)

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Julius Landas  
(Zuniga-Pflucker lab)

May 27

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Meggie Kuypers  
(Mallevaey lab)

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Baweleta Isho  
(Gommerman lab)

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Homaira Hamidzada  
(Epelman lab)

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Shanzeh Ahmed  
(Gommerman lab)

### EASTON SEMINARS

2020-21 Easton Seminar will commence in September 2020.

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image provided by Lori Waters

Dr. Jong Bok Lee (Zhang lab)  
Dr. Angela Li (Robbins lab)  
Dr. Helen Luck (Winer lab)  
Dr. Heather MacGregor (Ohashi lab)  
Dr. Charles Maisonneuve (Philpott lab)  
Dr. Kieran Manion (Wither lab)  
Dr. Clare So (Martin lab)

### PhD (2020)

Dr. Michael St. Paul (Ohashi lab) – March 17, 2020 (*last pre-COVID PhD exam at UofT to have any in person participation!*)

Dr. Alex Ling (Martin lab) – April 8, 2020 (*first PhD exam in the history of the Dept of Immunology to have **100% remote participation!***)

Dr. Kogulan Yoganathan (Anderson/Zúñiga-Pflücker labs)  
– April 9, 2020

Dr. Jennifer Ahn (Dunn lab) – April 15, 2020

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image provided by Crista Mason

### IGSA

Dear Immunologists,

In response to COVID-19, IGSA has taken a greater presence online! We hope you are all adjusting well to these turbulent times. As we cannot see you all in person, we will be moving our activities online for the next while. Briefly, we will be using Zoom for the upcoming events in May and June:

Online game nights/hangouts – We will be hosting reoccurring game nights and hangouts biweekly

Qualification/Reclassification study sessions – For students who have their qualification exams coming, we have organized an opt-in self-organized study groups to help everyone stay motivated for exams. If you would like to add your name to our directory please email [derekl.tsang@mail.utoronto.ca](mailto:derekl.tsang@mail.utoronto.ca)

Online summer ‘retreat’ – Unfortunately, our summer retreat this year at Geneva Park has been canceled. However, the retreat will be condensed to a shorter online conference in June. We are happy to announce that Prof. Barbara Kee, an alumnus of our department, will be our keynote for the conference. More details to come soon.

We will be highlighting the great COVID-19 research ongoing by everyone in our department through newsletters in the coming weeks. If your lab is currently conducting new research regarding COVID-19, please reach out to us at [utgsu.immunology@gmail.com](mailto:utgsu.immunology@gmail.com)

Additionally, we will be mobilizing our knowledge as immunologists to address immunology questions regarding COVID-19 for the general public. Our graduate students have begun creating pamphlet-style comics to explain topics such as vaccine development and viral responses. If you are interested in helping, please email [utgsu.immunology@gmail.com](mailto:utgsu.immunology@gmail.com)

We are sending you all our best wishes and we hope to see everyone in person soon!

Best,

IGSA

## IMMSA

Hello Immunologists,

**Congratulations** on making it through the 2019-2020 academic year at UofT! We know this year must have been especially challenging due to the current COVID-19 pandemic. Nevertheless, all of you deserve a well-earned rest and we wish all of you success in your future endeavours. With the academic year closing, we just wanted to provide a quick recap of the past year.

During October, we had our Research Info Seminar hosted by Dr. Thierry Mallevaey and our 1st Lunch & Learn hosted by Dr. Jane Danska. We had also started our very first Peer Mentorship program tailored for Immunology undergraduate students.

During November, we had our Graduate Studies Info Seminar hosted by Kate Sedore and Korosh Kianizad and our Fall Pub Night at Firkin on Bay where we partnered with the Undergraduate Physiology Students' Association (UPSA).

During February, we had our 2nd Lunch & Learn hosted by Dr. Natalie Galant, the Co-Founder and CEO of Paradox Immunotherapeutics, as well as our Spring Pub Night at Firkin on Bay with the Cell and Systems Biology Student Union (CSBSU) and the Molecular Genetics and Microbiology Student Union (MGYSU). We also started our Winter Apparel Sale and we plan to hand out the ordered hoodies + stickers once UofT reopens.

Thank you to all of the students who came out to these events, as well as the faculty members who hosted - we hope everyone had an informative and enjoyable time!

During March, we had our Spring Elections to assemble the new IMMSA Executive Team for the 2020-2021 academic year. Thank you to all of the applicants and we wish the new team luck!

Lastly, due to the current COVID-19 pandemic, the 2020 Ontario-Quebec Undergraduate Immunology Conference (OQUIC) has been cancelled. Thank you to all of the applicants and we hope many of you consider applying again next year!

That is it from us and we hope our 2019-2020 IMMSA team was successful in supporting all of you, the undergraduate Immunology community, both academically and socially this past year.

All the best and stay safe,

Foram Vyas & David Won  
IMMSA Co-Presidents 2019-2020

### PUBLICATIONS FROM THE DEPARTMENT OF IMMUNOLOGY (Since 2020 January)

1. Agache I, Song Y, Rocha C, Beltran J, Posso M, Steiner C, Alonso-Coello P, Akdis C, Akdis M, Canonica GW, Casale T, Chivato T, Corren J, del Giacco S, Eiwegger T, Firinu D, Gern JE, Hamelmann E, Hanania N, Makela M, Martin IH, Nair P, O'Mahony L, Papadopoulos NG, Papi A, Park HS, de Llano LP, Quirce S, Sastre J, Shamji M, Schwarze J, Canelo-Aybar C, Palomares O, Jutel M. 2020. Efficacy and safety of treatment with dupilumab for severe asthma: A systematic review of the EAACI guidelines-Recommendations on the use of biologicals in severe asthma. *Allergy*. **Mar 2020**.
2. Dobson SM, Garcia-Prat L, Vanner RJ, Wintersinger J, Waanders E, Gu ZH, McLeod J, Gan OI, Grandal I, Payne-Turner D, Edmonson MN, Ma XT, Fan YP, Voisin V, Chan-Seng-Yue M, Xie SZ, Hosseini M, Abelson S, Gupta P, Rusch M, Shao Y, Olsen SR, Neale G, Chan SM, Bader G, Easton J, Guidos CJ, Danska JS, Zhang JH, Minden MD, Morris Q, Mullighan CG, Dick JE. 2020. Relapse-Fated Latent Diagnosis Subclones in Acute B Lineage Leukemia Are Drug Tolerant and Possess Distinct Metabolic Programs. *Cancer Discovery*. **10(4):568-587**.
3. Cheng RY, Eylert G, Garipey JM, He SJ, Ahmad H, Gao YH, Priore S, Hakimi N, Jeschke MG, Gunther A. 2020. Handheld instrument for wound-conformal delivery of skin precursor sheets improves healing in full-thickness burns. *Biofabrication*. **12(2)**.
4. Barber CEH, Twilt M, Pham T, Currie GR, Benseler S, Yeung RSM, Batthish M, Blanchette N, Guzman J, Lang BC, LeBlanc C, Levy DM, O'Brien C, Schmeling H, Soon G, Spiegel L, Whitney K, Marshall DA. 2020. A Canadian evaluation framework for quality improvement in childhood arthritis: key performance indicators of the process of care. *Arthritis Research & Therapy*. **22(1)**.
5. Lin AF, Inman RD, Streutker CJ, Zhang ZB, Pritzker KPH, Tsui HW, Tsui FWL. 2020. Lipocalin 2 links inflammation and ankylosis in the clinical overlap of inflammatory bowel disease (IBD) and ankylosing spondylitis (AS). *Arthritis Research & Therapy*. **22(1)**.
6. Elsaesser HJ, Mohtashami M, Osokine I, Snell LM, Cunningham CR, Boukhaled GM, McGavern DB, Zuniga-Pflucker JC, Brooks DG. 2020. Chronic virus infection drives CD8 T cell-mediated thymic destruction and impaired negative selection. *Proceedings Of The National Academy Of Sciences Of The United States Of America*. **117(10):5420-5429**.
7. Chu KL, Batista NV, Girard M, Law JC, Watts TH. 2020. GITR differentially affects lung effector T cell subpopulations during influenza virus infection. *Journal Of Leukocyte Biology*. **Mar 2020**.
8. St Paul M, Saibil SD, Lien SC, Han S, Sayad A, Mulder DT, Garcia-Batres CR, Elford AR, Israni-Winger K, Robert-Tissot C, Zon M, Katz SR, Shaw PA, Clarke BA, Bernardini MQ, Nguyen LT, Haibe-Kains B, Pugh TJ, Ohashi PS. 2020. IL6 Induces an IL22(+) CD8(+) T-cell Subset with Potent Antitumor Function. *Cancer Immunology Research*. **8(3):321-333**.
9. Vinaik R, Abdullahi A, Barayan D, Jeschke MG. 2020. NLRP3 inflammasome activity is required for wound healing after burns. *Translational Research*. **217.:47-60**.

10. Sun T, Nguyen A, Gommerman JL. 2020. Dendritic Cell Subsets in Intestinal Immunity and Inflammation. *Journal Of Immunology*. **204(5)**:1075-1083.
11. Turgeon PJ, Chan GC, Chen L, Jamal AN, Yan MS, Ho JJD, Yuan L, Ibeh N, Ku KH, Cybulsky MI, Aird WC, Marsden PA. 2020. Epigenetic Heterogeneity and Mitotic Heritability Prime Endothelial Cell Gene Induction. *Journal Of Immunology*. **204(5)**:1173-1187.
12. Liu J, Clayton K, Gao WB, Li Y, Zealey C, Budykowski P, Schwartz J, Yue FY, Bie Y, Rini J, Ostrowski M. 2020. Trimeric HIV-1 gp140 fused with APRIL, BAFF, and CD40L on the mucosal gp140-specific antibody responses in mice. *Vaccine*. **38(9)**:2149-2159.
13. Agache I, Beltran J, Akdis C, Akdis M, Canelo-Aybar C, Canonica GW, Casale T, Chivato T, Corren J, Del Giacco S, Eiwegger T, Firinu D, Gern JE, Hamelmann E, Hanania N, Makela M, Martin IH, Nair P, O'Mahony L, Papadopoulos NG, Papi A, Park HS, de Llano LP, Posso M, Rocha C, Quirce S, Sastre J, Shamji M, Song Y, Steiner C, Schwarze J, Alonso-Coello P, Palomares O, Jutel M. 2020. Efficacy and safety of treatment with biologicals (benralizumab, dupilumab, mepolizumab, omalizumab and reslizumab) for severe eosinophilic asthma. *Allergy*. **Feb 2020**.
14. Lang PA, Crome SQ, Xu HFC, Lang KS, Chapatte L, Deenick EK, Grusdat M, Pandya AA, Pozdeev VI, Wang RF, Holderried TAW, Cantor H, Diefenbach A, Elford AR, McIlwain DR, Recher M, Haussinger D, Mak TW, Ohashi PS. 2020. NK Cells Regulate CD8(+) T Cell Mediated Autoimmunity. *Frontiers In Cellular And Infection Microbiology*. **10**.
15. Jeschke MG, van Baar ME, Choudhry MA, Chung KK, Gibran NS, Logsetty S. 2020. Burn injury. *Nature Reviews Disease Primers*. **6(1)**.
16. Krance SH, Luke R, Shenouda M, Israwi AR, Colpitts SJ, Darwish L, Strauss M, Watts JC. 2020. Cellular models for discovering prion disease therapeutics: Progress and challenges. *Journal Of Neurochemistry*. **153(2)**:150-172.
17. Moustafa AT, Moazzami M, Engel L, Bangert E, Hassanein M, Marzouk S, Kravtzenyuk M, Fung W, Eder L, Su JD, Wither JE, Touma Z. 2020. Prevalence and metric of depression and anxiety in systemic lupus erythematosus: A systematic review and meta-analysis. *Seminars In Arthritis And Rheumatism*. **50(1)**:84-94.
18. Gus EI, Shahrokhi S, Jeschke MG. 2020. Anabolic and anticatabolic agents used in burn care: What is known and what is yet to be learned. *Burns*. **46(1)**:19-32.
19. Chu KL, Batista NV, Girard M, Watts TH. 2020. Monocyte-Derived Cells in Tissue-Resident Memory T Cell Formation. *Journal Of Immunology*. **204(3)**:477-485.
20. Cox MA, Bassi C, Saunders ME, Nechanitzky R, Morgado-Palacin I, Zheng C, Mak TW. 2020. Beyond neurotransmission: acetylcholine in immunity and inflammation. *Journal Of Internal Medicine*. **287(2)**:120-133.
21. Ward LA, Lee DSW, Sharma A, Wang A, Naouar I, Ma XJI, Pikor N, Nuesslein-Hildesheim B, Ramaglia V, Gommerman JL. 2020. Siponimod therapy implicates Th17 cells in a preclinical model of subpial cortical injury. *JCI Insight*. **5(1)**.

22. Schuh NW, Carrier TJ, Schrankel CS, Reitzel AM, Heyland A, Rast JP. 2020. Bacterial Exposure Mediates Developmental Plasticity and Resistance to Lethal *Vibrio lentus* Infection in Purple Sea Urchin (*Strongylocentrotus purpuratus*) Larvae. *Frontiers In Immunology*. **10**.
23. Yousuf Y, Datu A, Barnes B, Amini-Nik S, Jeschke MG. 2020. Metformin alleviates muscle wasting post-thermal injury by increasing Pax7-positive muscle progenitor cells. *Stem Cell Research & Therapy*. **11(1)**.
24. Parker ME, Barrera A, Wheaton JD, Zuberbuehler MK, Allan DSJ, Carlyle JR, Reddy TE, Ciofani M. 2020. c-Maf regulates the plasticity of group 3 innate lymphoid cells by restraining the type 1 program. *Journal Of Experimental Medicine*. **217(1)**.
25. Hosseini S, Moghaddas H, Soltani SM, Kheawhom S. 2020. Technological Applications of Honeycomb Monoliths in Environmental Processes: A review. *Process Safety And Environmental Protection*. **133**:286-300.
26. Aguilar OA, Sampaio IS, Rahim MMA, Samaniego JD, Tilahun ME, Krishnamoorthy M, Popovic B, Babic M, Krmpotic A, Treanor B, Margulies DH, Allan DSJ, Makrigiannis AP, Jonjic S, Carlyle JR. 2020. Mouse Cytomegalovirus m153 Protein Stabilizes Expression of the Inhibitory NKR-P1B Ligand Clr-b. *Journal Of Virology*. **94(1)**.
27. MacGregor HL, Sayad A, Elia A, Wang B, Katz SR, Shaw PA, Clarke BA, Crome SQ, Robert-Tissot C, Bernardini MQ, Nguyen LT, Ohashi PS. 2019. High expression of B7-H3 on stromal cells defines tumor and stromal compartments in epithelial ovarian cancer and is associated with limited immune activation. *Journal For Immunotherapy Of Cancer*. **7(1)**.
28. Berger A, Colpitts SJ, Seabrook MSS, Furlonger CL, Bendix MB, Moreau JM, McKillop WM, Medin JA, Paige CJ. 2019. Interleukin-15 in cancer immunotherapy: IL-15 receptor complex versus soluble IL-15 in a cancer cell-delivered murine leukemia model. *Journal For Immunotherapy Of Cancer*. **7(1)**.
29. Hildebrandt MR, Reuter MS, Wei W, Tayebi N, Liu JJ, Sharmin S, Mulder J, Lesperance LS, Brauer PM, Mok RSF, Kinneer C, Piekna A, Romm A, Howe J, Pasceri P, Meng GL, Rozycki M, Rodrigues DC, Martinez EC, Szego MJ, Zuniga-Pflucker JC, Anderson MK, Prescott SA, Rosenblum ND, Kamath BM, Mital S, Scherer SW, Ellis J. 2019. Precision Health Resource of Control iPSC Lines for Versatile Multilineage Differentiation. *Stem Cell Reports*. **13(6)**:1126-1141.
30. Diao L, Yousuf Y, Amini-Nik S, Jeschke MG. 2020. Increased proliferation of hepatic periportal ductal progenitor cells contributes to persistent hypermetabolism after trauma. *Journal Of Cellular And Molecular Medicine*. **24(2)**:1578-1587.

*We'd like to hear from you!*  
*Comments or Questions – Please contact:*  
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