



18th HFSP Awardees Meeting

8 - 11 July 2018

**The Peter Gilgan Centre for Research and Learning
The Hospital for Sick Children (SickKids)
Toronto, Canada**



The lobby of SickKids building



18th HFSP Awardees Meeting

The Peter Gilgan Centre for Research and Learning
The Hospital for Sick Children (SickKids), Toronto, Canada
8 – 11 July 2018

Practical Information

Meeting venue

The meeting will be held in the auditorium of the Peter Gilgan Centre for Research and Learning (PGCRL) located at 686 Bay Street (corner of Bay/Elm), Toronto, ON M5G 0A4, Canada.

From the lobby, you can either take the stairs on your left or the elevator immediately behind Security up to the second floor, where you will be directed by signs to the auditorium.

Conference hotel

The Chelsea Hotel, 33 Gerrard Street West, Toronto, ON M5G 1Z4, Canada Tel: +1 (416) 595 1975.

See the map on the inside of the back cover for location of hotel.

Registration

Sunday, 8 July (14:00 – 18:00)

Chelsea Hotel lobby

Monday, 9 July (8:00 – 17:30)

auditorium foyer, PGCRL

Tuesday, 10 July - Wednesday, 11 July (8:00 – 17:00)

auditorium foyer, PGCRL

Plenary lectures and oral sessions

The scientific sessions will take place in the auditorium of the PGCRL. A technical assistant is available to assist speakers with loading their presentation slides. An LCD projector connected to a computer which supports Windows and Macintosh is available in the auditorium. You can also connect your own Mac or PC to the projector. If you have a Mac you should bring an adaptor to connect to the projector. Please report to the registration desk on the morning of your talk for instructions. Presenters of talks scheduled before the morning coffee break should present themselves at the registration desk by 8:30 on the day of their talk.

If you are giving a 3-minute poster talk please bring your presentation on a USB memory stick so that it can be copied on to a single computer. You can copy your presentation on to the master computer during the morning coffee break or at the latest during the lunch break on the day of your talk.

Poster sessions

The poster sessions will take place in the Gallery outside the PGCRL auditorium. The poster boards are 8' * 4' / 243 * 122 cm (width * height) and are designed to display two posters side by side. Your poster should be no larger than 3'10.5" * 3' 10.5"/118 * 118 cm. Please refer to the poster listing in the meeting program for the number and time of your presentation. Posters should be mounted on the stand corresponding to your number during the morning coffee break or lunch break on the day of presentation and removed following the poster session. There will be no printing service available at the conference venue. You can print your poster in Toronto at Omazzii Printing across the street from the venue at 655 Bay Street. They offer same-day printing providing that posters are dropped off before 14:00.

Breakfast, lunch and coffee breaks

Breakfast, lunch and coffee breaks will take place in the Gallery outside the auditorium. Breakfast will be available from 8:00.

There will be an opportunity to meet the HFSP Council of Scientists and Review Committee Chairs over lunch on Tuesday, 10 July. This is an occasion to discuss the challenges in your career with the Council and to help them in their role of advising on the HFSP scientific programs. There will be tables reserved for the Council members and RC Chairs and you are welcome to join them on a first-come, first-served basis.

Social program

Sunday, 8 July, 19:00

Welcome cocktail at PGCRl at SickKids

The Gallery on the second floor

686 Bay Street (corner of Bay/Elm), ON M5G 0A4

Monday, 9 July, 19:30

Reception at Hart House

University of Toronto, 7 Hart House Circle, Toronto, ON M5S 3H3

Wednesday, 11 July, 19:30

Farewell reception at the Carlu

444 Yonge St, 7th Floor, Toronto, ON M5B 2H4

Wifi

A free wifi service is available at the venue. This can be accessed with the login/password: *SickKidsGuest/beourguest*.

Photography

Many awardees show unpublished data. You should not take photographs of slides with data during oral presentations or of posters without permission from the authors.

Social media

We encourage you to write about the meeting on your blog, on Facebook or on Twitter. If you use Twitter, please consider using the tags #HFSPmtg, #SickKids, #PGCRl or #UofT in your tweets. However, since awardees often show unpublished data, you should not broadcast results without permission from the authors.

	DAY 1 Sunday, July 8	DAY 2 Monday, July 9	DAY 3 Tuesday, July 10	DAY 4 Wednesday, July 11
MORNING		<p>Breakfast 8:00 – 8:45 Gallery, SickKids</p> <p>Opening Remarks & Oral Session 1 8:45 – 10:35 Auditorium, SickKids</p> <p>Coffee Break 10:35 – 11:00 Gallery, SickKids</p> <p>Oral Session 2 11:00 – 12:20 Auditorium, SickKids</p>	<p>Breakfast 8:00 - 9:00 Gallery, SickKids</p> <p>Oral Session 4 9:00 – 10:40 Auditorium, SickKids</p> <p>Coffee Break 10:40 – 11:10 Gallery, SickKids</p> <p>Meet HFSP Session 11:10 – 12:00 Auditorium, SickKids</p>	<p>Breakfast 8:00 – 9:00 Gallery, SickKids</p> <p>Oral Session 6 9:00 – 10:20 Auditorium, SickKids</p> <p>Coffee Break 10:20 – 10:50 Gallery, SickKids</p> <p>Oral Session 7 10:50 – 12:10 Auditorium, SickKids</p>
AFTERNOON	<p>Registration 14:00 – 18:00 2/F Foyer, Chelsea Hotel</p> <ul style="list-style-type: none"> Delegates check-in and pick up their name badges 	<p>Lunch 12:20 – 13:30 Gallery, SickKids</p> <p>Oral Session 3 13:30 – 14:30 Auditorium, SickKids</p> <p>Poster Talks 1 14:30 – 15:00 Auditorium, SickKids</p> <p>Poster Session & Refreshments 15:00 – 17:30 Gallery, SickKids</p> <p>Invited Lecture - Pamela Silver 17:30 – 18:30 Auditorium, SickKids</p>	<p>Lunch & Meet the Council of Scientists 12:00 – 13:10 Gallery, SickKids</p> <p>Oral Session 5 13:10 – 14:10 Auditorium, SickKids</p> <p>Poster Talks 2 14:10 - 14:40 Auditorium, SickKids</p> <p>Poster Session & Refreshments 14:40 – 17:00 Gallery, SickKids</p>	<p>Lunch 12:10 – 13:30 Gallery, SickKids</p> <p>Poster Talks 3 13:30 - 14:00 Auditorium, SickKids</p> <p>Poster Session & Refreshments 14:00 – 17:00 Gallery, SickKids</p> <p>HFSP Nakasone Award Ceremony & Lecture 17:00 pm - 18:15 pm Auditorium, SickKids</p>
EVENING	<p>Welcome Cocktail 19:00 – 22:00 Gallery, SickKids</p> <ul style="list-style-type: none"> Welcome remarks: Michael Salter, Chief of Research, SickKids 	<p>Dinner Reception 19:30 – 22:00 Hart House, University of Toronto</p> <ul style="list-style-type: none"> Welcome remarks: Christopher Yip, Associate Vice President - International Partnerships Professor, University of Toronto 	<p>Evening at leisure</p>	<p>Farewell Reception 19:30 – 20:15 Sky Room, Carlu</p> <p>Farewell Dinner 20:15 – 22:00 Round Room, Carlu</p>

18th HFSP Awardees Meeting

Sunday, 8 July

14:00-18:00

Registration

Lobby of Chelsea Hotel

19:00

Welcome cocktail

The Peter Gilgan Centre for Research and Learning, SickKids

Opening remarks: *Michael Salter, Chief of Research, SickKids*

Monday, 9 July

Opening Remarks

- 8:45-9:00 **Warwick Anderson**, Secretary General, HFSP
Michel Perron, Executive Vice-President, External Affairs and Business Development, CIHR
Pierre Charest, Vice-President, Research Grants and Scholarships Directorate, NSERC
- 9:00-9:15 **Molly Shoichet**, Ontario First Chief Scientist

Oral Session 1 (Chair: Helmut Grubmueller)

- 9:15-9:35 **Mechanosensation: from the periphery to the brain and back**
Plazas, P., Carpaneto, A., Wedemeyer, C., Oteíza, P., Odstrcil, I., Asgharsharghi, A., Lozano-Ortega, M., Elgoyhen, A.B., Engert, F., **López-Schier, Hernán**
2014 Program Grant
- 9:35-9:55 **A microtubule organizing center directing intracellular transport in the early mouse embryo**
Zenker, Jennifer, White, D.M., Templin, R.M., Parton, R.G., Thorn-Seshold, O., Bissiere, S., Plachta, N.
2015 Long-Term Fellow
- 9:55-10:15 **Audio-vocal integration in echolocating bats**
Luo, Jinhong, Moss, C.F.
2016 Long-Term Fellow
- 10:15-10:35 **Small proteins with big roles: bouncer enables sperm entry during fertilization in vertebrates**
Herberg, S., Briedis, K.R., Schleiffer, A., Theußl, H-C., Fujihara, Y., Ikawa, M., **Pauli, Andrea**
2015 Career Development Award

10:35-11:00 **Coffee break**

Oral Session 2 (Chair: Daniela Rhodes)

- 11:00-11:20 **Model-driven design of dynamic CRISPRi circuits**
Clamons, S.E., **Murray, Richard**
2015 Program Grant
- 11:20-11:40 **Capture of particles by swimming cells and microbots**
Mathijssen, Arnold, Jeanneret, R., Polin, M., Prakash, M.
2017 Cross-Disciplinary Fellow
- 11:40-12:00 **An *in vivo* model of functional and vascularized human brain organoids**
Mansour, Abed, Gonçalves, J.T., Bloyd, C.W., Li, H., Fernandes, S., Quang, D., Johnston, S., Parylak, S., Jin, X., Gage, F.H.
2015 Long-Term Fellow
- 12:00-12:20 **Touch shapes plant-insect pollinator interactions**
Deora, Tanvi, Ahmed, M., Brunton, B., Daniel, T.L.
2017 Long-Term Fellow

Oral Session 3 (Chair: Tadashi Uemura)

- 13:30-13:50 **Towards self-reproduction of protocells and minimal cells: evolution versus engineering**
Noireaux, Vincent, Ott, A., Maeda, Y., Libchaber, A.J.
2015 Program Grant
- 13:50-14:10 **How a neurotransmitter controls the immune system**
Papa, I., Saliba, D., Ponzoni, M., Bustamante, S., Canete, P.F., Gonzalez-Figueroa, P., McNamara, H.A., Valvo, S., Grimaldeston, M., Sweet, R.A., Vohra, H., Cockburn, I.A., **Meyer-Hermann, Michael**, Dustin, M., Doglioni, C., Vinuesa, C.G.
2015 Program Grant
- 14:10-14:30 **Unraveling the cellular dynamics of force mediated tissue expansion**
Aragona, Mariaceleste, Dekoninck, S., Blanpain, C.
2015 Long-Term Fellow

Poster Talks 1 (Chair: Allan Herbison)

- 14:30-14:33 **Where it all begins: how is the genome spatially organized during early embryonic development?**
Gelali, E., Schell, J.P., Wernersson, E., Girelli, G., Lanner, F., **Bienko, Magda**
2016 Career Development Award
- 14:33-14:36 **Using light to study localized liquid-liquid phase separation in living cells**
Bracha, Dan, Brangwynne, C.
2017 Cross-Disciplinary Fellow
- 14:36-14:39 **Defining chaperone and ubiquitination circuits cooperating in nuclear and cytoplasmic protein quality control**
Samant, Rahul S., Livingston, C.M., Frydman, J.
2015 Long-Term Fellow
- 14:39-14:42 **Understanding the principles of tissue repair that promote tumor formation**
Gallini, Sara, Greco, V.
2017 Long-Term Fellow
- 14:42-14:45 **Identification of a latent resident progenitor population in the adult tendon**
Grinstein, Mor, Montoro, D., Ismail, N., Rajagopal, J., Galloway, J.L.
2015 Long-Term Fellow
- 14:45-14:48 **Temporal and spatial regulations couple DNA replication to the establishment of cellular asymmetry in the bacterium *Caulobacter crescentus***
Guzzo, Mathilde, Dyer, J.M., Sanderlin, A.G., Laub, M.T.
2017 Long-Term Fellow
- 14:48-14:51 **Factors secreted by the stem cells of the gonads condition the sexual behavior of the *Drosophila* male**
Herrera, Salvador, Bach, E.A.
2015 Long-Term Fellow
- 14:51-14:54 **Measurements of three-dimensional trajectories and wingbeat frequency of birds in the field**
Ling, H., McIvor, G.E., Nagy, G., MohaimenianPour, S., Thornton, A., Vaughan, R.T., **Ouellette, Nicholas**
2017 Program Grant

- 14:54-14:57 **Probiotic Bifidobacterium or the dietary fiber inulin protect against diet-dependent microbiota-mediated deterioration of the inner colonic mucus layer**
Schroeder, Björn O., Birchenough, G.M.H., Ståhlman, M., Arike, L., Johansson, M.E.V., Hansson, G.C., Bäckhed, F.
2014 Long-Term Fellow
- 14:57-15:00 **Optogenetic control of spindle architecture and function in space and time**
Serra-Marques, Andrea, Dumont, S.
2016 Long-Term Fellow
- 15:00-17:30 **Poster Session 1**
(with refreshments)

Invited Lecture (Chair: Warwick Anderson)

- 17:30-18:30 **Designing biology for health and sustainability**
Pamela Silver, *Harvard University, Cambridge, USA*

19:30 **Dinner reception at Hart House**
University of Toronto

Welcome remarks: **Christopher Yip**, *Associate Vice President - International Partnerships Professor, University of Toronto*

Tuesday, 10 July

Oral Session 4 (Chair: Yunje Cho)

- 9:00-9:20 **Evolution of olfactory circuits in drosophilids**
Auer, Thomas, Khallaf, M.A., Zappia, G., Silbering, A.F., Hansson, B.S., Knaden, M., Benton, R.
2015 Long-Term Fellow
- 9:20-9:40 **Human-specific NOTCH2NL genes: possible contributors to human's evolutionary increase in brain size**
Jacobs, Frank M.J.
2016 Career Development Award
- 9:40-10:00 **Controlling electron beams with lasers to reveal protein structure**
Schwartz, Osip, Axelrod, J.J., Glaeser, R.M., Müller, H.
2016 Cross-Disciplinary Fellow
- 10:00-10:20 **Elastic signal response of gas vesicles as xenon-MRI contrast agents**
Schröder, Leif, Shapiro, M., Kunth, M., Lu, G.J., Witte, C.
2016 Program Grant
- 10:20-10:40 **Visual recognition of intent**
Feng, Q., Martinez, A.M., *Giese, Martin*, Tsao, D.
2016 Program Grant

10:40-11:10 **Coffee break**

11:10-12:00 **Open session: meet the staff of HFSP**

12:00-13:10 **Lunch**
with the opportunity to meet the HFSP Council of Scientists and Review Committee Chairs

Oral Session 5 (Chair: Gabrielle Belz)

- 13:10-13:30 **Mammalian lipid droplets: a central role in the organismal antibacterial response?**
Bosch, M., *Pol, Albert*, Bozza, P.T., Parton, R.G., Gross, S.P.
2015 Program Grant
- 13:30-13:50 **Second brain mapping: molecular tracing of neuron-microbe communications in the gut**
Obata, Yuuki, Gomez de Agüero, M., Murray, A., Macpherson, A., Pachnis, V.
2016 Long-Term Fellow
- 13:50-14:10 **Computational design of self-assembling protein nanomachines**
Courbet, Alexis, Wei, K., Nattermann, U., Moyer, A., Hsia, Y., Ueda, G., Fallas, J., Boyken, S., Ceze, L., Daniel, T., Smith, J., Bradley, P., Baker, D.
2016 Long-Term Fellow

Poster Talks 2 (Chair: Ray Dunn)

- 14:10-14:13 **Encoding of an engram for food location by satiety-promoting Drd2 hippocampal neurons**
Azevedo, Estefania, Pomeranz, L., Cheng, J., Schneeberger, M., Stern, S., Greengard, P., Friedman, J.
2015 Long-Term Fellow
- 14:13-14:16 **Chemistry and biology of polyphosphate**
Jessen, Henning, Singh, J., Steck, N., De, D., Rane, A., Bhandari, R., Vargas, J., McKinlay, C., Wender, P.
2016 Program Grant
- 14:16-14:19 **Within-species diversity drives alternative community types in millimeter scale granular biofilms**
Leventhal, Gabriel, Boix, C., Kuechler, U., Enke, T., Sliwerska, E., Holliger, C., Cordero, O.X.
2016 Long-Term Fellow
- 14:19-14:22 **Molecular functional ultrasound for enhanced imaging of neural activity in rodents and NHPs**
Maresca, David, Christopoulos, V., Lee-Gosselin, A., Ling, B., Payen, T., Demene, C., Tanter, M., Andersen, R., Shapiro, M.G.
2016 Cross-Disciplinary Fellow
- 14:22-14:25 **Assembly of a synaptic scaffold *in chemico***
Mim, Carsten, Lau, K.H.A., Yameen, B.
2016 Young Investigator Grant
- 14:25-14:28 **SPIRAL2 protects minus ends to promote severing and reorientation of plant cortical microtubule arrays**
Nakamura, Masayoshi, Lindeboom, J.J., Saltini, M., Mulder, B.M., Ehrhardt, D.W.
2017 Career Development Award
- 14:28-14:31 **Neuronal mechanism that regulates predator-induced germline physiology in *Drosophila***
Sadanandappa, Madhumala K., Bosco, G.
2017 Long-Term Fellow
- 14:31-14:34 **Matryoshka vectors: two is better than one**
Scott, Niv, O'Shea, C.C.
2016 Long-Term Fellow
- 14:34-14:37 **Robotics-inspired biology: decoding flexibility of motor control by studying amphibious locomotion**
Ijspeert, A.J., Ishiguro, A., **Standen, Emily**
2017 Program Grant
- 14:37-14:40 **Deciphering molecular mechanisms underlying transgenerational inheritance in response to an adverse nutritional environment**
Vogt, Merly, Hobert, O.
2016 Long-Term Fellow
- 14:40-17:00 **Poster Session 2**
(with refreshments)

Wednesday, 11 July

Oral Session 6 (Chair: Thomas Daniel)

- 9:00-9:20 **Inorganic voltage nanosensors**
Park, K., Kuo, Y., Park, J., Li, J., Ingargiola, A., Grupi, A., Yudovich, S., Shapira, Z., Degani-Katzav, N., Morgen, L., Marzouq, A., Ludwig, A., Shvadchak, V., Chizhik, A., Tang, Y., Sharma, A., Bar-Elli, O., Yang, G., Oron, D., Enderlein, J., Triller, A., **Weiss, Shimon**
2015 Program Grant
- 9:20-9:40 **Unique traits of the blood system in naked mole rats as adaptations to longevity**
Emmrich, Stephan, Ke, Z., Straight, M., Seluanov, A., Gorbunova, V.
2016 Long-Term Fellow
- 9:40-10:00 **u-track 3D: a tracking framework to quantify, observe and contextualize intracellular dynamics in three dimensions**
Roudot, Philippe, Legant, W.R., Dean, K.M., David, A., Gerlich, D., Fiolka, R., Betzig, E., Danuser, G.
2015 Cross-Disciplinary Fellow
- 10:00-10:20 **The evolution of cognitive abilities along an elevation gradient in a wild songbird**
Morand-Ferron, Julie, Serre, T.S., Verhoye, M., Chaine, A.S.
2015 Program Grant

10:20-10:50 **Coffee break**

Oral Session 7 (Chair: Vincent Eijssink)

- 10:50-11:10 **Quantifying natural selection at all spatial scales**
Doekes, H.M., Bosman, R., **Hermesen, Rutger**
2015 Young Investigator Grant
- 11:10-11:30 **An integrative approach to understanding the metabolic flexibility of hummingbirds**
Welch, Kenneth, Wong, G.W., Timp, W., Valle, M.
2016 Program Grant
- 11:30-11:50 **How do the semicircular canals of the inner ear form?**
Munjal, Akankshi, Megason, S.
2016 Long-Term Fellow
- 11:50-12:10 **Instability in a reconstituted active network composed of microtubules and Kinesin-1 motors**
Duclos, Guillaume, Chandrakar, P., Beller, D.A., Streichan, S., Pelcovits, R.A., Powers, T.R., Dogic, Z.
2016 Long-Term Fellow

12:10-13:30 **Lunch**

Poster Talks 3 (Chair: Hendrik Stunnenberg)

- 13:30-13:33 **Molecular mechanism of paternal contribution to epigenetic inheritance in mice**
Boskovic, Ana, Bing, X.Y., Rando, O.J.
2015 Long-Term Fellow
- 13:33-13:36 **Lineage–tracing reveals a unique contribution of embryonic macrophages to NSCLC**
Casanova-Acebes, Maria, Leader, A., Tung, N., Maier, B., Kenigsberg, E., Nikolic, J., Sawai, C.M., Salmon, H., Benaroch, P., Reizis, B., Merad, M.
2015 Long-Term Fellow
- 13:36-13:39 **Rational engineering of a designed protein cage for siRNA delivery**
Edwardson, Thomas, Mori, T., Hilvert, D.
2016 Long-Term Fellow
- 13:39-13:42 **Universality of biochemical feedback and its application to immune cells**
Erez, Amir, Byrd, T.A., Vogel, R.M., Peterson, C., Vennettilli, M., Altan-Bonnet, G., Mugler, A.
2014 Cross-Disciplinary Fellow
- 13:42-13:45 **Understanding endomitosis: a common road to polyploidy**
van Rijnberk, L.M., Morgan, D.O., *Galli, Matilde*
2017 Career Development Award
- 13:45-13:48 **Identification and characterization of novel genome stability factors**
Hustedt, Nicole, Zimmermann, M., Hart, T., Olivieri, M., Zhao, Y., Angers, S., Moffat, J., Durocher, D.
2016 Long-Term Fellow
- 13:48-13:51 **Understanding variation in germline mutation by sequencing single gametes, using a new method that preserves molecular identity through DNA amplification**
Laumer, Christopher, Birney, E., Marioni, J.C.
2016 Long-Term Fellow
- 13:51-13:54 **The circuit and molecular mechanism of sexually dimorphic oxytocin-dependent anxiety and social behaviors**
Li, Kun, Nakajima, M., Ibanez-Tallon, I., Heintz, N.
2015 Long-Term Fellow
- 13:54-13:57 **Coupled control of mRNA and protein variability in single mammalian cells**
Popovic, Doris, Koch, B., Ellenberg, J., Pelkmans, L.
2016 Long-Term Fellow
- 13:57-14:00 **How to make a heart beat? Sequencing resources, genetic tools, and advanced imaging methods to functionally characterize the three hearts and pacemakers of pygmy squid**
Yoshida, Masa-aki, Ono, H., Renard, M., Peramba, K., Kasugai, T., Debregeas, G., Moroz, L.L., Edsinger, E.
2017 Program Grant
- 14:00-17:00 **Poster Session 3**
(with refreshments)

2018 HFSP Nakasone Award Ceremony and Lecture

17:00-17:15

Introduction

Nobutaka Hirokawa, President of HFSP

17:15-18:15

A Neandertal perspective on human origins

Svante Pääbo, Max Planck Institute for Evolutionary Anthropology, Leipzig, Germany

19:30

Farewell reception

The Carlu

Poster Presentations

Posters will be presented either on Monday, Tuesday or Wednesday. For each day, the posters are listed in alphabetical order by presenting author (in bold italics), except where more than one member of a grant team has prepared a poster, in which case they are listed together.

Monday, 9 July

- 1. Transient FtsN/FtsA interaction coordinates FtsZ treadmilling dynamics with cell wall synthesis**
Baranova, N., Radler, P., Rocamoca, V.H., Vollmer, W., Loose, M.
- 2. Single-cell sequencing of newly synthesized mRNA during early Zebrafish development**
Battich, N., Baron, C.S., van Oudenaarden, A.
- 3. Small molecule-based enzyme activatable probes**
Singh, K., Kwan, A., Gharibi, N., Rotaru, A., *Beharry, A.A.*
- 4. Where it all begins: how is the genome spatially organized during early embryonic development?**
Gelali, E., Schell, J.P., Wernersson, E., Girelli, G., Lanner, F., *Bienko, M.*
- 5. Using light to study localized liquid-liquid phase separation in living cells**
Bracha, D., Brangwynne, C.
- 6. Defining the structural basis for kinase inhibition and activation by the Hsp90 chaperone system**
Coutandin, D., Agard, D.A.
- 7. Regression of physiological cardiac hypertrophy in mice**
Crocini, C., Leinwand, L.A.
- 8. Identification and characterization of ArgRS translation-independent functions**
Cui, H., Moresco, J.J., Nottingham, R.M., Wu, D.C., Diedrich, J.K., Yates, J.R. 3rd, Lambowitz, A.M., Yang, X.L., Schimmel, P.
- 9. MIRO-1 and programmed cell death function in distinct pathways that promote germline mitochondrial transmission in *Caenorhabditis elegans***
Eastwood, M., Raiders, S., Priess, J.
- 10. Rebuilding and reimagining the last common ancestor, a ribo-organism**
Ellington, A.D., Suga, H., Marliere, P., Jewett, M.C.
- 11. How competitive cell interactions shape the developing skin**
Ellis, S.J., Fürthauer, S., Fuchs, E.
- 12. The effect of ethanol metabolism on the gut microbiota and the immune system**
Fonseca Pereira, D., Glickman, J.N., Garrett, W.S.
- 13. Understanding the principles of tissue repair that promote tumor formation**
Gallini, S., Greco, V.
- 14. Dissecting the molecular mechanisms underlying how distinct stem cell states heal wounds**
Gonzales, K.A., Fuchs, E.

- 15. Identification of a latent resident progenitor population in the adult tendon**
Grinstein, M., Montoro, D., Ismail, N., Rajagopal, J., Galloway, J.L.
- 16. Phylogenetic variation of aster yellows phytoplasma among geographically distinct regions of the United States: implications for multi-layered modeling efforts**
Groves, R.L., Hogenhout, S.A., Maree, A., Immink, R.G.H., Zwolinska, A.
- 17. Dissecting the spatiotemporal crosstalk between skin stem cells and the vascular capillary network**
Gur-Cohen, S., Yang, H., Baksh, S., Lay, K., Fuchs, E.
- 18. Temporal and spatial regulations couple DNA replication to the establishment of cellular asymmetry in the bacterium *Caulobacter crescentus***
Guzzo, M., Dyer, J.M., Sanderlin, A.G., Laub, M.T.
- 19. Dynamics of morphogen transport and scaling in growing tissues**
Hadjivasiliou, Z., Aguilar-Hildago, D., Romanova-Michaelides, M., Jülicher, F., González-Gaitán, M.
- 20. Marker-free lineage tracing approach reveals actively cycling isthmus stem cells in gastric corpus glands**
 Fink, J., *Han, S.*, Joerg, D., Yum, M.K., Lee, J-H., Josserand, M., Trendafilova, T., Merker, S., Rolf, A.A., Dabrowska, C., Kim, H., Basak, O., Mort, R.L., Jackson, I.J., Stange, D., Clevers, H., Simons, B.D., Koo, B-K.
- 21. Improving Cytochrome P450 performance in *Escherichia coli* whole-cell catalysts through redox partner tethering**
Haslinger, K., Poberejsky, D.A., Prather, K.L.J.
- 22. Defining the capacity of cells to keep the proteome folded over space and time**
Hatters, D.M., Ebbinghaus, S., Dickson, A., Nicholas, H., Wood, R.J., Ormsby, A.R., Radwan, M., Cox, D., Sharma, A., Vöpel, T., Reid, G.E.
- 23. Factors secreted by the stem cells of the gonads condition the sexual behavior of the *Drosophila* male**
Herrera, S.C., Bach, E.A.
- 24. Cooperation strategy and information processing in and between germinal centre reactions**
Meyer-Hermann, M., Dustin, M.L., Vinuesa, C.G., Victora, G., Siokis, A., Robert, P., Saliba, D., Demetriou, P., Papa, I., Gonzalez Figueroa, P., Pasqual, G.
- 25. Measurements of three-dimensional trajectories and wingbeat frequency of birds in the field**
 Ling, H., McIvor, G.E., Nagy, G., MohaimenianPour, S., Thornton, A., Vaughan, R.T., *Ouellette, N.T.*
- 26. Defining chaperone and ubiquitination circuits cooperating in nuclear and cytoplasmic protein quality control**
Samant, R.S., Livingston, C.M., Frydman, J.
- 27. Probiotic Bifidobacterium or the dietary fiber inulin protect against diet-dependent microbiota-mediated deterioration of the inner colonic mucus layer**
Schroeder, B.O., Birchenough, G.M.H., Ståhlman, M., Arike, L., Johansson, M.E.V., Hansson, G.C., Bäckhed, F.
- 28. Optogenetic control of spindle architecture and function in space and time**
Serra-Marques, A., Dumont, S.

Tuesday, 10 July

- 1. Encoding of an engram for food location by satiety-promoting *Drd2* hippocampal neurons**
Azevedo, E.P., Pomeranz, L., Cheng, J., Schneeberger, M., Stern, S., Greengard, P., Friedman, J.
- 2. Linking neuronal birth order to layer targeting in the *Drosophila* optic lobe**
Holguera, I., Desplan, C.
- 3. Single-cell transcriptome analysis of medulloblastoma**
Hovestadt, V., Filbin, M.G., Bihannic, L., Shaw, M.L., DeWitt, J., Groves, A., Smith, K.S., Hadley, J., Gajjar, A., Robinson, G.W., Mayr, L., Slavic, I., Goumnerova, L., Ligon, K.L., Suva, M.L., Northcott, P.A., Bernstein, B.E.
- 4. Live imaging of heart tube development in mouse reveals alternating phases of cardiac differentiation and morphogenesis**
Ivanovitch, K., Susana, T., Miguel, T.
- 5. Chemistry and biology of polyphosphate**
Jessen, H.J., Singh, J., Steck, N., De, D., Rane, A., Bhandari, R., Vargas, J., McKinlay, C., Wender, P.
- 6. Spinal mechanisms of motor recovery with neurorehabilitation after severe spinal cord injury in mice**
Kathe, C., Cho, N., Squair, J., Telley, L., Jabaudon, D., Courtine, G.
- 7. A lipogenic checkpoint in G1? Cell cycle entry and cellular lipids**
Köberlin, M.S., Fan, Y., Liu, C., Chung, M., Meyer, T.
- 8. Biophysics of genome folding**
Krietenstein, N., Rando, O.J.
- 9. Within-species diversity drives alternative community types in millimeter scale granular biofilms**
Leventhal, G.E., Boix, C., Kuechler, U., Enke, T., Sliwerska, E., Holliger, C., Cordero, O.X.
- 10. Exploring the molecular control of stem cell fate during whole-body regeneration in the acoel *Hofstenia miamia***
Luo, Y-J., Gehrke, A., Ramirez, A., Srivastava, M.
- 11. Molecular functional ultrasound for enhanced imaging of neural activity in rodents and NHPs**
Maresca, D., Christopoulos, V., Lee-Gosselin, A., Ling, B., Payen, T., Demene, C., Tanter, M., Andersen, R., Shapiro, M.G.
- 12. A liquid phase generated by synapsin and lipid vesicles**
Milovanovic, D., De Camilli, P.
- 13. Assembly of a synaptic scaffold *in chemico***
Mim, C., Lau, K.H.A., Yameen, B.
- 14. A systems biology approach to elucidate the molecular mechanism of Kelch13-mediated artemisinin resistance in human *Falciparum* malaria**
Mok, S., Amaratunga, C., Tripathi, J., Gnädig, N.F., Stokes, B.H., Straimer, J., Fairhurst, R., Bozdech, Z., Fidock, D.A.
- 15. Cohesin mediated spatial organisation of higher order chromatin structure**
Nagasaka, K., Wutz, G., Várnai, C., Cisneros, D., Schoenfelder, S., Stocsits, R., Tang, W., Jessberger, G., Muhar, M., Zuber, J., Fraser, P., Peters, J-M.

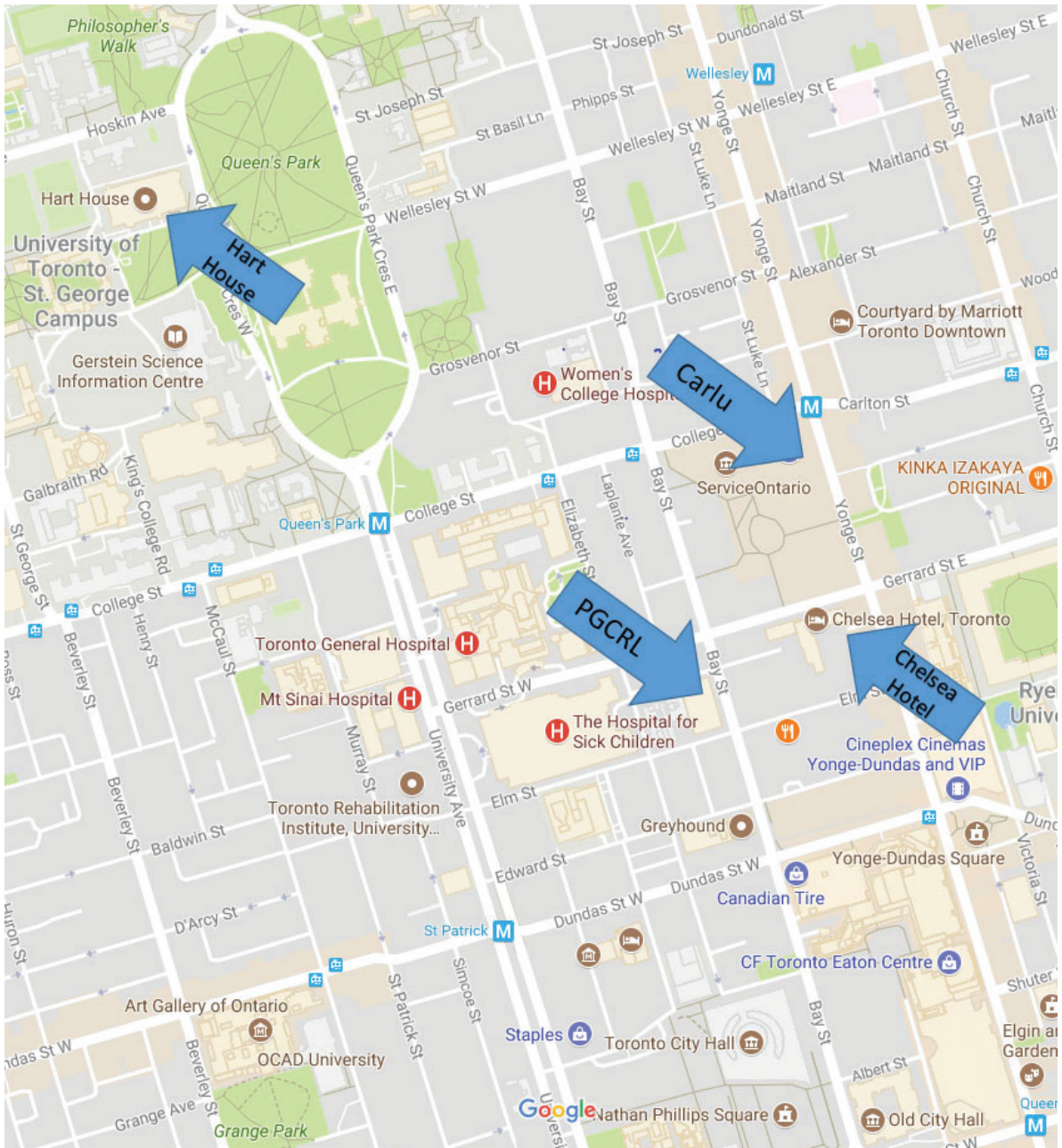
- 16. SPIRAL2 protects minus ends to promote severing and reorientation of plant cortical microtubule arrays**
Nakamura, M., Lindeboom, J.J., Saltini, M., Mulder, B.M., Ehrhardt, D.W.
- 17. Molecular mechanism for plant developmental control by divergent plant membrane receptors**
Okuda, S., Fujita, S., Doblas, V., Moretti, A., Geldner, N., Hothorn, M.
- 18. Isoxanthopterin: an optically functional biogenic crystal in decapod crustacean eyes**
Palmer, B.A., Hirsch, A., Oron, D., Leiserowitz, L., Kronik, L., Weiner, S., Addadi, L.
- 19. 3D genome organization and transcription regulation in brain circuits**
Ruan, Y., Barco, A., Wilczynski, G.
- 20. Neuronal mechanism that regulates predator-induced germline physiology in *Drosophila***
Sadanandappa, M.K., Bosco, G.
- 21. Matryoshka vectors: two is better than one**
Scott, N., O'Shea, C.C.
- 22. Robotics-inspired biology: decoding flexibility of motor control by studying amphibious locomotion**
Ijspeert, A.J., Ishiguro, A., *Standen, E.M.*
- 23. Deciphering molecular mechanisms underlying transgenerational inheritance in response to an adverse nutritional environment**
Vogt, M.C., Hobert, O.

Wednesday, 11 July

- 1. Investigating the role of HIV antigen nanoscale spatial organization on B-cell activation**
Veneziano, R., Moyer, T., Stone, M.B., Irvine, D., **Bathe, M.**
- 2. Molecular mechanism of paternal contribution to epigenetic inheritance in mice**
Boskovic, A., Bing, X.Y., Rando, O.J.
- 3. Lineage-tracing reveals a unique contribution of embryonic macrophages to NSCLC**
Casanova-Acebes, M., Leader, A., Tung, N., Maier, B., Kenigsberg, E., Nikolic, J., Sawai, C.M., Salmon, H., Benaroch, P., Reizis, B., Merad, M.
- 4. An extracellular RNAi pathway as a mechanism of parasite-host communication**
Claycomb, J.M., Chow, F., Ovando-Vázquez, C., Maity, T., Bermúdez-Barrientos, J.R., Koutsovoulos, G., Blaxter, M., Abreu-Goodger, C., Buck, A.H.
- 5. Cell-specific functional genomic tools and resources to decipher cephalopod innovations: the pygmy squid as a new experimental paradigm**
Edsinger, E., Renard, M., Peramba, K., Ono, H., Kasugai, T., Yoshida, M., Debregeas, G., Moroz, L.L.
- 6. How to make a heart beat? Sequencing resources, genetic tools, and advanced imaging methods to functionally characterize the three hearts and pacemakers of pygmy squid**
Yoshida, M.A., Ono, H., Renard, M., Peramba, K., Kasugai, T., Debregeas, G., Moroz, L.L., Edsinger, E.
- 7. Rational engineering of a designed protein cage for siRNA delivery**
Edwardson, T.G.W., Mori, T., Hilvert, D.
- 8. Universality of biochemical feedback and its application to immune cells**
Erez, A., Byrd, T.A., Vogel, R.M., Peterson, C., Vennettilli, M., Altan-Bonnet, G., Mugler, A.
- 9. Understanding endomitosis: a common road to polyploidy**
van Rijnberk, L.M., Morgan, D.O., **Galli, M.**
- 10. Identification and characterization of novel genome stability factors**
Hustedt, N., Zimmermann, M., Hart, T., Olivieri, M., Zhao, Y., Angers, S., Moffat, J., Durocher, D.
- 11. Hippocampal sequences in memory and beyond**
Kemere, C., Pezzulo, G., van der Meer, M.
- 12. Understanding variation in germline mutation by sequencing single gametes, using a new method that preserves molecular identity through DNA amplification**
Laumer, C.E., Birney, E., Marioni, J.C.
- 13. The circuit and molecular mechanism of sexually dimorphic oxytocin-dependent anxiety and social behaviors**
Li, K., Nakajima, M., Ibanez-Tallon, I., Heintz, N.
- 14. Coupled control of mRNA and protein variability in single mammalian cells**
Popovic, D., Koch, B., Ellenberg, J., Pelkmans, L.
- 15. Adapting metazoan opsins for optogenetic applications**
Schertler, G.F.X., Terakita, A., Lucas, R.

16. Regulation of photosynthetic light harvesting
Schlau-Cohen, G.S., Ishizaki, A., Johnson, M.P.
17. Direct *in vivo* CRISPR delineates novel cancer driver mutations
Loganathan, S., *Schramek, D.*
18. Genome-wide CRISPR/Cas9-based survey of genetic loci influencing protein abundances in yeast
Schubert, O.T., Bloom, J.S., Kruglyak, L.
19. A PURE-ly synthetic ribosome biogenesis in DNA compartments on a chip
Shimizu, Y., Daube, S.S., Bar-Ziv, R.H.
20. Tracing Lassa virus through its genome: understanding a growing threat in Nigeria
Siddle, K.J., Mehta, S., Winnicki, S.M., Brehio, P., Shah, R., Eromon, P., Oguzie, J., Odia, I., Folarin, O., Park, D., Happi, C., Sabeti, P.C.
21. Simultaneous two-photon fluorescence lifetime microscopy of NADH and FAD by wavelength mixing reveals unique metabolic fingerprints of stem cells during differentiation
Abdeladim, L., Mahou, P., Supatto, W., Beaufrepaire, E., *Stringari, C.*
22. Transcriptional changes between fasted and fed hummingbirds identified using long read transcriptome sequencing
Workman, R.E., Dick, M., Myrka, A., Wong, G.W., Valle, M., Welch, K., *Timp, W.*
23. Modeling the initiation and evolution of Down syndrome associated leukemia using CRISPR/Cas9
Wagenblast, E., Lechman, E.R., Gan, O.I., Krivdova, G., Shakib, L., Dick, J.E.
24. NMR Studies of the Neurotensin 1 Receptor (NTR1) reveal mobile segments in the apoprotein that rigidify upon binding neurotensin 1 and heterotrimeric G protein G_i
Ziarek, J., Hagn, F., Plückthun, A., *Wagner, G.*
25. Helicase-dependent RNA decay by the human RNA exosome
Weick, E.-M., Januszyk, K., Puno, M.R., Zinder, J.C., DiMattia, M.A., Lima, C.D.

Notes



Map of Toronto showing the meeting venues

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