

# RSA News

Fall 2022



## A note from the Research Scientist Association Co-Chairs

We hope everyone enjoyed our beautiful fall season and has had a productive fall semester so far. The campus is buzzing with the return of students and in-person events. The Research Scientist Council is also energized and excited to represent and support the Research Scientist community.

We have just developed a survey to understand the concerns and needs of Research Scientists. The goal is to use this information to improve the Research Scientist experience at the school. Please see below for the link to this survey.

We have also launched the 3<sup>rd</sup> year of the Research Scientist – Postdoctoral mentorship program. Time commitment is as little as once per semester, and we are still looking for a few more Research Scientist mentors. We are particularly looking for mentors from Epidemiology, but still have availability for mentors from other departments. If you are interested, please contact [Shafika Abrahams-Gessel](#) or [Mesfin Bekalu](#).

Last May we held the first in-person meeting at the Open Meeting and Spring Social. We hope to have another in-person social event this 2022/2023 year. Stay tuned!

We wish you a well-deserved break with friends and family.

Kind regards,  
Karen Inouye & Shannan Ho Sui

## 2022-2023 Council Members

<b>Karen Inouye</b> – Co-chair, Molecular Metabolism	<b>Minttu Rönn</b> – Global Health and Population
<b>Shannan Ho Sui</b> – Co-chair, Biostatistics	<b>Megan Marx Delaney</b> – Health Policy and Management
<b>Radhika Khetani</b> – Biostatistics	<b>Linda Vesel</b> – Health Policy and Management
<b>Shafika Abrahams-Gessel</b> – Center for Health Decision Science	<b>Mesfin Bekalu</b> – Social and Behavioral Sciences
<b>Terence Cheng</b> – Global Health and Population	<b>Philip Kret</b> (Administration) – Office of Faculty Affairs



## Research Scientist Calendar – IMPORTANT REMINDERS



*Please complete our survey by December 21<sup>st</sup>!!! [2022 Research Scientist Association Survey](#)*

## Research Scientist Appointment Applications Due Date - Monday, January 9, 2023

**Due dates** for application materials for new RS appointments, re-appointments, promotions for consideration at the **RS review committee meetings are due Monday, January 9, 2023, for the January 24 meeting.**



## **New Research Scientist Appointments**

**Rachael Piltch-Loeb**, Biostatistics, 9/22

**Ying Chen**, Epidemiology, 9/22

**Yu-Han Chiu**, Epidemiology, 9/22

**Usheer Kanjee**, Immunology and Infectious Diseases, 10/22

**Emma Berdan**, Biostatistics, 11/22

## **Promotions**

**Gillian Steel Fisher**, Health Policy and Management, Principal Research Scientist, 10/22

**Linda Vesel**, Health Policy and Management, Senior Research Scientist, 9/22

**CONGRATULATIONS TO ALL!**

## **Resource Corner**

[The Harvard Office of Work/Life](#), offers various resources, including childcare, after-school programs, public or private schools, or elder care. The HARVie (Human Resources) website also offers a wide variety of resources, including for [caring for children](#), [caring for yourself](#), or [connecting to local communities](#).

The [Harvard Employee Assistance Program](#) offers free, confidential help to all employees and their adult household members for personal or work-related concerns.

The [Harvard TH Chan Ombuds Office](#) provides impartial assistance to students, faculty, staff, trainees, and appointees whose concerns are affecting their work or studies. It offers a highly confidential, independent, and informal forum in which to help visitors to clarify their concerns, identify their goals, and consider all of their options in managing or resolving their situations. The ombuds do not serve as advocates for any party in a dispute but do advocate for fair treatment and processes. Any issue may be brought to an ombuds.

The [Office of Research Strategy and Development \(ORSD\)](#) at TH Chan provides catalytic & strategic support through a variety of programs, including [weekly funding announcements](#) (internal, federal, non-federal) and support for [developing proposals](#).

The [Harvard Catalyst Program](#) offers a variety of resources, many at no cost, to the research community through [courses and educational programs](#), research consulting, tools for study design and clinical trial collaboration, guidance on regulatory issues, and [pilot funding](#).



## Research Scientist Updates

### Collaborations

**Emmie Aveling** (Health Policy and Management) is a Co-Investigator and Qualitative Research Lead for a [mixed methods, international research collaboration](#) which aims to raise awareness of the lived experience of people with Long COVID in Rio de Janeiro and generate recommendations to support patient-centered care through Brazil's public healthcare system. The project, entitled Long COVID healthcare: Needs, barriers and opportunities in Rio de Janeiro City is funded by the [Harvard Lemann Brazil Research Fund](#).

**Minttu Rönn** (Global Health and Population) and faculty member Nicolas Menzies (PI) are recipients of this year's [Dean's Fund for Scientific Advancement \(DFSA\) Incubation Award](#) at the Harvard T.H. Chan School of Public Health. As Co-investigator, Minttu and Menzies will evaluate the feasibility of the "Ending the HIV Epidemic: A Plan for America" (EHE), a federal effort to reduce HIV incidence in the United States by 90% by 2030. To reach the EHE goals, resources are invested to scale up HIV prevention and treatment. Monitoring progress uses multiple HIV-specific indicators such as incidence, diagnoses, viral suppression, and Pre-Exposure Prophylaxis (PrEP) coverage.

**Shannon Ho Sui** (Biostatistics) received a Chan-Zuckerberg Initiative Essential Open Source Software for Science Cycle 5 award to continue to maintain and develop the *bcbio-nextgen* toolkit for variant calling and epigenomics. The project is entitled *bcbio-nextgen: Reproducible, Community Developed Analysis Pipelines*.

**Shannon Ho Sui** (Biostatistics) received a NIH PO1 funding as the Bioinformatics Core for a program project aimed at exploring the role of stem cell pathways in wound healing in age-damaged skin. The project is entitled *Multicomponent Therapy for Age-related Skin Stem Cell Deficiency*.

### Presentations

**Mi-Sun Lee** (Environmental Health) presented findings on Vaping Habits and Respiratory Health Outcomes using a Smartphone App Platform at the ATS International Conference, in San Francisco. This work is part of the Harvard-ERC Pilot Project, a collaboration with colleagues Joseph G. Allen, Ki-Do Eum, Jukka-Pekka Onnela, and David C. Christiani

**Wesley Wong** (Immunology and Infectious Diseases) presented a symposium talk at the Virus Genomic Evolution Conference hosted by the Sanger Institute describing the modeling of the transmission and genetic reversion of the Sabin 2 oral Poliovirus vaccine virus.

**Shafika Abrahams-Gessel** (Center for Health Decision Science) presented an invited talk Food Service Guidelines Workgroup at The Nutrition and Obesity Policy Research and Evaluation Network (NOPREN). The Food Service Guidelines (FSG) Work Group is comprised of diverse public health



practitioners, scientists, and advocates from non-profit organizations, government, academia, and other stakeholders. She shared the results of recently published work that modeled the cost-effectiveness of implementing FSG in federal and private worksite cafeterias in the U.S.

## **Publications**

**Wesley Wong** (Immunology and Infectious Diseases) published a manuscript describing a new genetic metric for distinguishing single and multiple bite malaria infections.

*Wong W, Volkman S, Daniels R, Schaffner S, Sy M, Ndiaye YD, Badiane AS, Deme AB, Diallo MA, Gomis J, Sy N. [RH: a genetic metric for measuring intrahost Plasmodium falciparum relatedness and distinguishing cotransmission from superinfection](#). PNAS nexus. 2022 Sep;1(4):pgac187.*

**Sean Brummel** (Biostatistics, Center for Biostatistics in AIDS Research) published a manuscript in the American Journal of Epidemiology using data from the Pediatric HIV/AIDS Cohort Study.

*Sean S Brummel, Russell B Van Dyke, Kunjal Patel, Murli Purswani, George R Seage, Tzy-Jyun Yao, Rohan Hazra, Brad Karalius, Paige L Williams, for the Pediatric HIV/AIDS Cohort Study. [Analyzing Longitudinally Collected Viral Load Measurements in Youth With Perinatally Acquired HIV Infection: Problems and Possible Remedies](#), American Journal of Epidemiology, Volume 191, Issue 10, October 2022, Pages 1820–1830.*

**Eric A. Franzosa** (Biostatistics) worked with postdoctoral research fellow Yancong Zhang and colleagues to develop *MetaWIBELE*, a software method for prioritizing microbial gene families from microbiomes based on their ecological and phenotypic properties, to identify novel genes associated with inflammatory bowel disease (IBD).

*Zhang Y, Bhosle A, Bae S, McIver LJ, Pishchany G, Accorsi EK, Thompson KN, Arze C, Wang Y, Subramanian A, Kearney SM, Pawluk A, Plichta DR, Rahnavard A, Shafquat A, Xavier RJ, Vlamakis H, Garrett WS, Krueger A, Huttenhower C, **Franzosa EA**. [Discovery of bioactive microbial gene products in inflammatory bowel disease](#). Nature. 2022;606(7915):754-60.*

**Karen Inouye** (Molecular Metabolism) is lead author on a recent publication that identified the endothelium, rather than adipose tissue, as the major source of circulating basal FABP4 hormone and is important for lipolysis-induced insulin secretion.

*Karen E. Inouye, Kacey J. Prentice, Alexandra Lee, Carla Dominguez-Gonzalez, Mu Xian Chen, Grace Yankun Lee, Gökhan S. Hotamışlıgil. [Endothelial FABP4 constitutes the majority of basal circulating hormone levels and regulates lipolysis-driven insulin secretion](#). doi: <https://doi.org/10.1101/2022.10.13.511807>*

**Shafika Abrahams-Gessel** (Center for Health Decision Science) recently led a publication that modeled the cost-effectiveness of the implementation of federal food service guidelines in workplace cafeterias in the U.S. for the first time.





**Abrahams-Gessel S, Wilde P, Zhang FF, Lizewski L, Sy S, Liu J, Ruan M, Lee Y, Mozaffarian D, Micha R, Gaziano T.** [Implementing federal food service guidelines in federal and private worksite cafeterias in the United States leads to improved health outcomes and is cost saving.](#) *Journal of Public Health Policy.* 2022 Apr 4:1-5.

**Victor Barrera** and **Shannan Ho Sui** (Biostatistics) published an analysis of single cell transcriptomic data from human stem cell-derived islet cells (SC-islets) under immune interaction with allogenic blood cells identified “alarmed” populations of SC-islets with potential to be modulated with gene-editing, providing possible therapeutic avenues for cell replacement therapy in insulin-dependent diabetes.

*Sintov E, Nikolskiy I, Barrera V, Kenty JH, Atkin AS, Gerace D, Sui SJ, Boulanger K, Melton DA.* [Whole-genome CRISPR screening identifies genetic manipulations to reduce immune rejection of stem cell-derived islets.](#) *Stem cell reports.* 2022 Sep 13;17(9):1976-90.

**Victor Barrera** (Biostatistics) published an analysis of human pluripotent stem cell (hPSC) models from patients with Down syndrome (DS) and fragile X syndrome (FXS) identified overlapping transcriptional perturbations, pointing to some shared underlying molecular mechanisms.

*Susco SG, Ghosh S, Mazzucato P, Angelini G, Beccard A, Barrera V, Berryer MH, Messana A, Lam D, Hazelbaker DZ, Barrett LE.* [Molecular convergence between Down syndrome and fragile X syndrome identified using human pluripotent stem cell models.](#) *Cell reports.* 2022 Sep 6;40(10):111312.

**Lorena Pantano** (Biostatistics – former), **Rory Kirchner** (Biostatistics – former), and **Shannan Ho Sui** (Biostatistics) published an analysis describing the identification and molecular characterization of the polyether ionophore nanchangmycin as novel anti-fibrotic compound through a comprehensive chemical library screen, representing a novel therapeutic avenue for treatment of liver fibrosis.

*Li W, Chen JY, Sun C, Sparks RP, Pantano L, Rahman RU, Moran SP, Pondick JV, Kirchner R, Wrobel D, Bieler M, Sauer A, Ho Sui SJ, Doerner JF, Rippmann JF, Mullen AC.* [Nanchangmycin regulates FYN, PTK2, and MAPK1/3 to control the fibrotic activity of human hepatic stellate cells.](#) *Elife.* 2022 May 26;11:e74513.

**Megan Marx Delaney** (Health Policy and Management) led a collaborative team to publish findings on quality improvement strategies to improve childbirth care at private facilities in India in the journal *Global Health Science and Practice: Does Quality Certification Work? An Assessment of Manyata, a Childbirth Quality Program in India’s Private Sector.* (*In press*)

**Matthew Smith** (Environmental Health) and **Sam Myers** (Environmental Health) co-led a recently accepted publication in *Environmental Health Perspectives* to understand how current inadequate insect pollination is causing an estimated ~427,000 global deaths annually due to resulting lowered crop yields for healthy foods that provide a protective effect against major chronic diseases (heart disease, cancer, stroke, diabetes). "Pollinator Deficits, Food Consumption, and Consequences for Human Health: A Modeling Study" (*in press*)