RSA News
Fall 2020

HARVARD T.H. CHAN SCHOOL OF PUBLIC HEALTH
Research Scientist Association

Council Info:

We welcome you to the HSPH Research Scientist Association (RSA) Fall newsletter! You'll find that it is filled with educational information, helpful hints and tips, events, and news about the major contributions Research Scientists are making to the HSPH community. In this edition, you'll find new information about the tremendous work our Research Scientists are doing to help combat, prevent, and understand the COVID pandemic and how it affects our communities. You'll also notice a new section, RSA Committee Updates, where we summarize the steps the RSA Committee has made towards achieving its three main goals for the year, namely: i) to advocate for Research Scientists at all levels within the School; ii) to support Research Scientists in their professional development; and iii) to enhance diversity and to build a sense of community, inclusion and belonging between Research Scientists, and between Research Scientists and others in the School.

Kind regards,

Jeremy Furtado & Kerry Ivey
(RSA Council Co-chairs)

RSA Committee Updates

- As a major step towards providing a collective voice for the issues that are relevant and of interest to Research Scientists at HSPH, on August 18, 2020 the RSA Committee met with Dean Michelle Williams and other HSPH Deans where we discussed and developed action items for the following:
  - enhancing Research Scientists' visibility, connectivity and contribution to the community,
  - enhancing access to HSPH training offerings
  - enhancing diversity, inclusion and belonging within the RS community

- In order to provide a liaison between Research Scientists and the administration and faculty of HSPH, we now have representatives of the RSA Council regularly attending the school-wide faculty meetings

- With the aim of enhancing and embracing the diversity of Research Scientists at HSPH, we now have a RSA Committee representative on the Dean's Advisory Committee on Diversity and Inclusion.

COVID-19 Research and Activities Research Scientists are Involved in:

While COVID-19 has certainly thrown us all off balance and, in some cases, impacted our ability to effectively do our work, many Research Scientists around the Chan School have been involved in studies and projects to better understand and address the COVID-19 pandemic. From studying the mental health impacts, molecular mechanisms, and improving outcomes, to helping guide COVID-19 communications from local, state, and federal health authorities, read on to learn more about what your colleagues are contributing!

Aedin Culhane (Senior Research Scientist, Biostatistics), took part in *The Observational Health Data Sciences and Informatics (OHDSI) virtual study-a-thon on COVID-19* in March. In 88 hours over multiple time-zones, 330 people from at least 30 nations gathered in 12 global huddles, had more than 100 collaborator calls, and 13,000 chat messages over 17 concurrent channels. They reviewed more than 10,000 publications leading to 355 cohort definitions, nine protocols and 13 study packages that enabled observational health research of the millions of electronic health records related to COVID-19. Dr. Culhane contributed to two resulting publications: *Burn, E., You, S.C., Sena, A.G. et al. Deep phenotyping of 34,128 adult patients hospitalised with COVID-19 in an*

international network study. Nat Commun 11, 5009 (2020). https://doi.org/10.1038/s41467-020-18849-zhttps://www.nature.com/articles/s41467-020-18849-z and *Lane, J. C. E., Weaver, J., Kostka, K., et al. OHDSI-COVID-19 consortium. (2020). Risk of hydroxychloroquine alone and in combination with azithromycin in the treatment of rheumatoid arthritis: a multinational, retrospective study. The Lancet Rheumatology.* https://doi.org/10.1016/S2665-9913(20)30276-9

Nicole Gastineau Campos (Senior Research Scientist, Health Policy and Management), is a member of the *Cambridge Friends School Covid-19 Task Force* that was convened in June to oversee safe re-opening of school. They have developed health protocols; provided guidance for ventilation, filtration, and sanitation measures; explored testing options; overseen installation of upper-level UVC lights in classrooms; and responded to community questions and concerns.

Leigh Graham (Research Scientist, Health Policy and Management) is a Senior Advisor to the *Cities Challenge* team at Ariadne Labs, and also provides research expertise on health equity for recent COVID-19-related work, *Reimagining Nursing Home Care*. Earlier this month, Dr. Graham co-facilitated a workshop analyzing potential policy reforms to improve health equity in long-term facilities. The team is now analyzing results from this workshop and others to guide future efforts. Also for this project, Dr. Graham co-published a related piece for Health Affairs' blog on policy interventions and long-term care during COVID-19, "*Long-Term Care Facilities Must Prioritize Immigrant Workers' Needs To Contain COVID-19*." She and her co-authors, **Caroline Lee** and **Archana Podhury** of Harvard Medical School and **Jasmine Kaduthodil** from Ariadne Labs, outline federal, state and local solutions to protect the sizable long-term care immigrant workforce, including improved workplace incentives, organizing for workers' rights, and protection from federal anti-immigrant action.

Kerry Ivey (Research Scientist, Nutrition, and a member of the research faculty at the South Australian Health and Medical Research Institute) is a member of the COVID PheWAS working group at the US Veterans Affairs Department. She is also a co-investigator on a Flinders Health and Medical Research Institute project grant entitled "*Precision antibiotic strategies for treatment of critically ill COVID-19 patients*" that aims to determine the impact airway microbiome has on the prognosis of critically ill COVID-19 patients, and a co-Principal Investigator on a 4-year grant from the Medical Research Futures Fund "*Precision antibiotic strategies to reduce the duration of invasive mechanical ventilation and mortality in COVID-19 patients*" that aims to improve clinical outcomes in mechanically ventilated COVID-19 patients through precision antibiotic strategies.

Denise Jacobson (Senior Research Scientist, Center of Biostatistics in AIDS Research, Department of Biostatistics) is Co-Chair of the Nutrition-Growth-Metabolism Working Group of the Pediatric HIV/AIDS Cohort Study (PHACS, PI: George Seage). She and her colleagues in the PHACS Network designed an interviewer administered questionnaire to check in on PHACS study participants' general health and collect information on symptoms, SARS-CoV-2 testing, emotional health and stress, etc. since the beginning of the COVID-19 pandemic. Dr. Jacobson is leading an analysis to evaluate the factors associated with emotional health, caregiver stress on child and his/her own mental health, prevalence of SARS-CoV-2 testing, and adherence to antiretroviral medication during the pandemic. This work is in collaboration with other Research Scientists at the Chan School including **Tzy-Jyun Yao**, **Katherine Tassiopoulos**, and **Deborah Kacanek**.

Andrea L. Roberts (Senior Research Scientist, Environmental Health) received a grant titled "*Maternal exposure to childhood abuse and disparities in offspring neurodevelopment: Effects of COVID-19 pandemic-related stress*." to study the effects of pandemic-related stress during pregnancy. "Children of women exposed to childhood abuse exhibit increased risk for a wide array of neurodevelopmental deficits and are at elevated risk of anxiety, depression, autism, and attention deficit disorder. We hypothesize that [COVID-19] pandemic-related adverse events (pregnancy complications, prematurity, low birth weight, and offspring neurodevelopmental deficits.) and stress will be more common in women exposed to child abuse and will increase risk for biological dysregulation during pregnancy that is harmful to offspring development."

Gillian SteelFisher (Senior Research Scientist, Health Policy and Management) is the PI on a project guiding COVID-19 communications from state and local public health authorities across the country as well as the CDC.

Funded through the Association of State and Territorial Health Officials, her team is also conducting a series of surveys focused on understanding behaviors related to COVID-19, including travel, contact tracing, health care seeking and the fundamentals of mask-wearing and social distancing. She is also the PI leading a multi-year project with the CDC to understand and develop recommendations that respond to challenges among Spanish and Chinese-speaking persons with limited English proficiency (LEP) in accessing and understanding relevant information during the COVID-19 outbreak. **Emmilie Aveling** (Research Scientist) is providing her qualitative research expertise.

Claudia Trudel-Fitzgerald (Research Scientist, Social and Behavioral Science), is one of 150 researchers involved in the international *iCARE* study, which aims to examine people's awareness, attitudes, and behaviors as they relate to COVID-19 policies, as well as the impacts that COVID-19 is having on people's physical and mental health, financial situation, and quality of life. As of today, more than 66,000 surveys have been completed, across 140 countries. Everybody can participate - feel free to complete the current survey and share it in your network! https://mbmc-cmcm.ca/covid19/

Several Research Scientists and Research Associates of the ***Harvard Chan Bioinformatics Core*** (Biostatistics) are involved in research to understand the molecular mechanisms of SARS-CoV-2 infection. **Victor Barrera** (Research Scientist), **Preetida Bhetariya** (Research Associate) and **Shannan Ho Sui** (Senior Research Scientist) are collaborating with the Kim Lab (BCH) and others to investigate the transcriptional response of iPS-derived lung organoids from young and old individuals to SARS-CoV-2 infection. Using bulk and single cell transcriptomics approaches, the goal is to characterize how particular lung cell types respond to infection depending on age. In addition, working with the Li Lab (BWH), **James Billingsley** (Research Scientist) and **Zhu Zhuo** (Research Associate) performed de novo genome assembly of multiple SARS-CoV-2 samples to assist their goals of characterizing viral diversity and evolution.

New RS appointments:

Victor Barrera Burgos, Department of Biostatistics (03/20)

Archana Basu, Department of Nutrition (05/20)

Rachel Grashow, Department of Environmental Health (03/20)

Manja Koch, Department of Nutrition (09/20)

Hannah Leslie, Department of Global Health and Population (09/20)

Natalia Linos, Department of Global Health and Population (05/20)

Jennifer Mitchel, Department of Environmental Health/MIPS (03/20)

Julia Rohr, Center for Population and Development Studies (03/20)

Matthew Smith, Department of Global Health and Population (05/20)

Yu (Evelyn) Zheng, Department of Biostatistics (CBAR) (03/20)

Promotions:

Jane Burns, to Senior Research Scientist, Department of environmental Health (03/20)

Mehmet Samur, to Senior Research Scientist, Department of Biostatistics (03/20)

Angie Cradock, to Principal Research Scientist, Department of Social and Behavioral Sciences (05/20)

Deborah Kacanek, to Senior Research Scientist, Department of Biostatistics (CBAR) (05/20)

Kassandra L. Munger, to Senior Research Scientist, Department of Nutrition (05/20)

Lidia Mínguez-Alarcón, to Senior Research Scientist, Department of Environmental Health (05/20)

CONGRATULATIONS ALL!!

Congratulations to the RSC Award Recipients FY2020-2021!!

Emily Burger: Emily's research involves applying mathematical modeling methods to quantify health consequences and evaluate cost-effective health policies related to women's health and prevention of disease in both high- and low-resource settings. Her current work is centered on cervical cancer prevention, including the evaluation of alternative cervical cancer screening and human papillomavirus vaccination strategies.

Eunyoung Chun: Eunyoung's research is to elucidate the interplay between the gut microbiota and host immune system in health, inflammatory bowel disease and colorectal cancer. Her research interests include unraveling the molecular and metabolic mechanisms of microbial metabolite (MM)-GPCR in host immune cells and immunity, identifying novel metabolites and cognate GPCRs to impact on host health and disease, and exploring the impact of MM-GPCR on host immune development from early life to adulthood.

Kerry Ivey: Kerry's current research focuses on using mathematical modelling to detect microorganisms that co-occur in patients with chronic lung disease, with the goal of identifying groups of microorganisms that predict response to therapy in this vulnerable population. She works with data from large-scale chronic lung disease cohorts and clinical trials, such as data from the ENCOMPASS research collaboration.

Anne Lusk: Anne works on developing bicycle environments that are safe and comfortable for women, children, seniors, lower income individuals, and people of color. Lower-income individuals often only have transit and more would bike if cycle tracks existed.

Kana Wu: Kana's research activities focus on the role of diet and lifestyle in cancer prevention and survival by integrating traditional epidemiologic methods with molecular pathologic, genomic, and metabolomic approaches. She is currently working on studies to identify diet and lifestyle factors that can improve CRC survival either as a primary intervention or as an augment to chemotherapy.

Dates to Know

Friday 11/06/2020
Due date for application materials for new RS appointments, re-appointments, promotions for consideration at the **RS review committee meeting** on Tuesday 11/24/2020.

Monday 11/23/2020
RSA Seminar Series: Kerry Ivey and Eunyoung Cho will present their work! 1-2pm Zoom invite will follow.

Monday 01/04/2021
Due date for application materials for new RS appointments, re-appointments, promotions for consideration at the **RS review committee meeting** on Tuesday 1/19/2021.

Dates to Watch For

Pandemic fatigue and the cold, dark winter got you down? Really need some human connection (even if virtual)? Then you are in luck!

We are in the planning stages of a virtual social night full of games and rooms to chat and check in!

Keep an eye on your email for more information. Tentative date end of January!