



#### AT A GLANCE

Founded: 2015

Program Directors: B. Brett Finlay, University of British Columbia, and Janet Rossant, The Hospital for Sick Children, Toronto

Fellows and advisors: 17

Institutions represented: 16, in 7 countries

Fields and subfields: microbiology; developmental and evolutionary biology; bacteriology; immunology; history; cultural and medical anthropology

Interaction meetings: 2; in Niagara-on-the-Lake, Canada, and Paris, France

Relevant knowledge users: medical community (practitioners, medical schools); public health agencies; nutritional community; government policy-makers; global health agencies

Partners: Brain Canada Foundation through the Canada Brain Research Fund, Fonds de recherche du Québec – Santé, Genome BC, Genome Canada

Supporters: Jon and Nancy Love Foundation at Toronto Foundation, Manulife, Trottier Family Foundation

# HUMANS & THE MICROBIOME

**Examines the human microbiome — the microbes that live in and on us — and the role it plays in human development and behaviour, as well as how it is affecting our evolution and society.**

2015/2016 marked the first official term year of the CIFAR program in Humans & the Microbiome. Over the year, the program expanded its membership to 12 fellows and five advisory committee members from diverse disciplines and geographic areas. Together, fellows refined and advanced their program's research goals and directions by committing to focus on five themes over their five-year term, namely: i) globalization and modernization, ii) microbiome and human development, iii) microbiota and host co-evolution, iv) microbiota transmission and v) education and outreach. Through support from CIFAR,

a subset of fellows have developed a successful proposal to conduct a collaborative, proof-of-concept project that will investigate the impact of colonial rule on the human microbiome and how developments in hygiene and medicine have shaped the human microbiome. The team will attempt to identify appropriate methodologies required to analyze ancient microbiomes, identify appropriate anthropological samples and address ethical and technical challenges involved with ancient genetic material in the context of the human microbiome. During year, the program also began to refine its knowledge outreach plans and focus an approach to engage medical schools and medical professionals in conversation on the microbiome.

**Research**

- A high-risk, collaborative, proof-of-concept research project involving ancient microbiome samples was approved in the program. Fellows working on this project include **Tamara Giles-Vernick** and **Philippe Sansonetti** (both Institut Pasteur), **B. Brett Finlay** (University of British Columbia), Frédéric Keck (Musée du quai de Branly) and **Hendrik Poinar** (McMaster University).
- A new research project was started this year involving fellows **Sven Pettersson** (Karolinska Institutet) and **Janet Rossant** (Hospital for Sick Children, Toronto). Their study will use germ-free mouse models to assess whether maternal gut microbes influence fetal brain development.

**Notable publication**

- **Keck F.** 2016. Avian preparedness: An anthropology of bird watchers and virus hunters. Forthcoming from University of California Press.

**IdeasExchange**

- In this first term year, the program devoted considerable time to discussing opportunities to engage knowledge users. The program is developing plans for the coming year to engage the medical school community in discussing recent findings and opportunities to consider the microbiome in the medical curriculum.
- Fellows of the program had a proposal accepted to lead a 90-minute symposium on **Microbes and Humans: Effects on Health, Disease and Society** at the 2017 Annual Meeting of the American Association for the Advancement of Science (AAAS).

**Global Academy**

- The program engaged a graduate student from the University of British Columbia to fill the role of program reporter at two program meetings, providing written summaries of presentations and discussions. The program is considering the most effective opportunities to engage trainees in collaborations with fellows going forward.

To learn more: <https://www.cifar.ca/research/humans-the-microbiome/>

CIFAR fellows in discussion at the November 2015 meeting of CIFAR's program in Humans & the Microbiome.

