

## Global Microbiome Summer Ambassador Training Program

June 18<sup>th</sup> – August 10<sup>th</sup>

This program will introduce students to the field of the human microbiome within the context of global health through journal articles, in-depth discussions, lab tours, and hands-on exercises. Students will also establish partnerships with researchers outside of the U.S. through Skype chats that will deepen their understanding of public health challenges abroad and the role the microbiome could play in them.

By the end of the summer, students will be able to:

1. Demonstrate an understanding of the current state of gut microbiome research and the basic technologies employed to study the gut microbiome.
2. Critically read and analyze associated scientific literature, and summarize it.
3. Communicate scientific information effectively.
4. Identify the opportunities and challenges associated with conducting research internationally.
5. Describe the ethical issues related to researching the gut microbiome in international contexts.
6. Build meaningful relationships with partners across cultural and national boundaries

The group will meet for two hours every week for six weeks, from June 18<sup>th</sup> until August 3<sup>rd</sup> (no class the week of July 4<sup>th</sup>). Students will also participate in the inaugural Our Microbes, Our Global Health Workshop and Symposium to take place August 7<sup>th</sup>-10<sup>th</sup>, where students will meet their partners and act as ambassadors to Cornell University.

Week	Topics	Activities
<p><i>Assigned Readings:</i>  <i>"Gut reaction: the surprising power of microbes"</i>  <a href="https://www.theguardian.com/science/2016/aug/25/gut-reaction-surprising-power-of-microbes">https://www.theguardian.com/science/2016/aug/25/gut-reaction-surprising-power-of-microbes</a>  <i>"Surprises emerge as more hunter-gatherer microbiomes come in"</i>  <a href="http://phenomena.nationalgeographic.com/2015/03/26/surprises-emerge-as-more-hunter-gatherer-microbiomes-come-in/">http://phenomena.nationalgeographic.com/2015/03/26/surprises-emerge-as-more-hunter-gatherer-microbiomes-come-in/</a></p>		
Week 1	Introduction to human microbiome	Ask students about their general experiences/knowledge of the human microbiome, watch Edge of Wonder: Episode , discuss video and readings
	Program and Workshop Overview	Short discussion of general expectations and logistics for the entire summer program.
<p><i>Assigned Readings:</i>  <i>"Ethics of exploring the microbiomes of native peoples"</i>  <a href="https://www.nature.com/articles/nmicrobiol201697">https://www.nature.com/articles/nmicrobiol201697</a>  <i>"Ethical issues in fecal microbiota transplantation in practice"</i></p>		

Week 2	Ethics of human, microbiome, and international research	Discussion of assigned readings motivated by provocative thought-provoking questions, while specifically keeping in mind issues relevant to international collaborations.
	Partner assignments	Communicate partner assignments and assign students readings on their partner's topics of interest.
<i>Prepare short presentation based on assigned readings.</i>		
Week 3	Microbiome topics related to global health	Students give short (5-7 min) presentations based on assigned readings
	Preparation for conversations with partners	Brainstorming as a group on questions to ask of their partners.
<i>Skype conversations with partners to get to know them and their research interests pertaining to global health and the human microbiome.</i>		
Week 4	Reports on conversations	Brief reports (3-5mins) on conversations with partners from previous week.
	Microbiome techniques & technologies	Tour through lab and talk to lab members about different technologies we use.
<i>Download QIIME2 software.</i>		
Week 5	Sequencing & bioinformatics	Hands-on bioinformatics tutorial.
	Prepare for 2 <sup>nd</sup> conversation	Quick brainstorming on questions for second Skype call.
<i>Second Skype conversation with partners to assess their specific goals and hopes for the workshop, and send short summary. Run literature search to find a recent finding/paper their partners might find interesting or that meets their partner's expectation for the workshop.</i>		
Week 6	Recent findings in microbiome field	Short presentation on finding/paper (5-7mins).
	Review workshop plan	Overview of student roles during workshop.
Aug. 7-9	Workshop	Ambassadors are expected to attend at least 2 days in total. They will meet their partners during the workshop, and facilitate and participate in workshop and symposium discussion sessions.
Aug. 10	Symposium	