

PARTNERS BIOBANK NEWSLETTER

PARTNERS
HEALTHCARE

BIOBANK

VOLUME 8, SPRING 2018

Biobank by the Numbers

85,000



participants

150



studies

25,000



genotyped
samples

765,000



stored
samples

Thank you for your participation!

The Partners Biobank now includes more than 85,000 participants and has provided samples and data to more than 150 research studies at several hospitals, including Brigham and Women's Hospital (BWH) and Massachusetts General Hospital (MGH). Thanks to your continued participation, the Biobank is helping our community of researchers better understand, treat, and prevent diseases that might affect your health and the health of future generations.

For example, Dr. Kerry Ressler, Principal Investigator of the Biobank at McLean Hospital, and Dr. Stephanie Maddox, also at McLean Hospital, are using the Biobank to better understand if thyroid hormone dysfunction is associated with an increased risk of psychiatric conditions, regardless of medical intervention. You can learn more about this study on our website.

This newsletter includes summaries of several research studies that are using Biobank samples and data, and invites you to learn more about the *All of Us* Research Program, a new, landmark research program from the National Institutes of Health (NIH).

Biobank Return of Results Update: 20,000 genotyped samples have been analyzed for results that may be important to participants' health. We are in the process of returning 91 results. We continue to genotype, analyze, and return results as we find them.



Kerry Ressler, MD,
PhD
McLean Hospital

An Invitation to Join the *All of Us* Research Program

Partners HealthCare hospitals, including BWH and MGH, in collaboration with Boston Medical Center, were awarded grant funding from the NIH to lead enrollment for the *All of Us* Research Program in New England.

All of Us is expected to be the largest and most diverse longitudinal health research program ever developed. Its mission is to accelerate health research and medical breakthroughs across a range of health conditions to enable individualized prevention, treatment, and care for all of us.

All Biobank participants are invited to join *All of Us*. *All of Us* participants will be asked to share different types of health and lifestyle information, including through online surveys and electronic health records, which will continue to be collected over the course of the program. They will be invited to come to one of our enrollment sites for physical measurements and sample collection. The *All of Us* Research Program will last over ten years.

Already, nearly 2,000 Biobank participants have joined *All of Us*! Thank you for your continued support of these research initiatives.

"Efforts like *All of Us* combat the one size fits all approach to medical care. This is a historic opportunity for Biobank participants to join 1,000,000 people throughout the United States to tackle critical questions about our health," says Dr. Jordan Smoller, one of the Principal Investigators for both the Partners Biobank and the *All of Us* Research Program.

Data that are collected for *All of Us* will be broadly accessible to researchers of all kinds, including citizen scientists, to support thousands of studies across a wide range of different health topics. These researchers may discover how to more precisely prevent and treat other health conditions.

To learn more or to contact the *All of Us* New England team:

joinallofus.org

allofus@partners.org

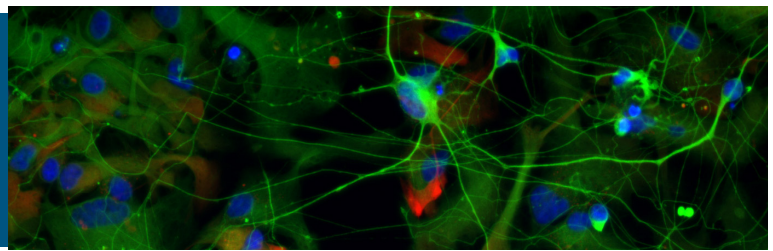
617-768-8300



Fatoumata Bah, Whitney Cho, and Greg Alfaro, *All of Us* Research Assistants



Genetic Factors in Tick-Borne Disease



Tick-borne diseases present a significant public health concern for communities known for large tick populations. The most common tick-borne diseases include Lyme disease and Human Babesiosis (HB), but there are a multitude of infections that are transmitted through ticks. Many of these diseases are emerging in growing numbers each year, while new infectious organisms are actively being identified.

Dr. Jacob Lemieux, from the Division of Infectious Disease at Massachusetts General Hospital, leads a team that is investigating the genetic factors that impact the pathogenicity, or ability to cause disease, of ticks. Dr. Lemieux's team, working out of the Rosenberg research group, is actively recruiting patients that present to the hospital with tick-borne diseases. Through the creation of a biorepository and genome wide association studies (GWAS) to test if a genetic variant is associated with a trait, the ultimate goal of this project is to investigate the vast spectrum of host and pathogen interactions. This could lead to a better understanding of why these diseases manifest in such diverse ways and how resistance or susceptibility may arise because of the interactions between host and disease.

The Biobank comes as fantastic resource for Dr. Lemieux's study. Dr. Lemieux has obtained genomic data from Biobank participants who were previously infected with a tick-borne disease. Combining Biobank data with the data that are actively being collected through patient recruitment in clinic, Dr. Lemieux's team has been able to assemble a dataset large enough to begin making robust and significant findings. A greater understanding of the genetic factors of the tick-borne pathogen, human host, and the interaction between the two has the potential to improve patient care of tick-borne disease through the development of new therapies and preventive therapies.

Recent Research Studies: We have distributed samples and data to more than 150 studies, including the three below. For more detail, please go to <https://biobank.partners.org/research-initiatives>.

Antibody Structural Factors Linked to Allergic Asthma and Eczema, Michelle Conroy, MD, Division of Rheumatology, Allergy & Immunology at MGH.

Previous basic science research supports that specific sugars attached to IgE antibodies promote allergic inflammation. Dr. Conroy is using Biobank samples of participants that have been diagnosed with allergic asthma or eczema, two of the most common allergic diseases, to study IgE glycosylation in subjects with these allergic diseases. The goal of this project is to identify additional factors that contribute to development and expression of allergic diseases.



DNA Predictors of Chronic Kidney Disease, Andrew Allegretti, MD, MSc, Division of Nephrology at MGH.

People with Chronic Kidney Disease (CKD) suffer from persisting damage to the kidneys that causes decreased functioning that can lead to kidney failure. Normal human blood has good bacteria to help it function. Lifestyle factors can cause overgrowth of bacteria in the gut which can enter into blood and cause inflammation and associated CKD. Members of the Kidney Research Center, led by Dr. Andrew Allegretti and Dr. Neal Shah, are studying this association by measuring bacterial profile in blood of CKD patients and comparing it to healthy controls.

Identifying the Cause of Heart Failure, Ronglih Liao, PhD, Cardiovascular Division at BWH.

Transthyretin cardiac amyloidosis is a type of heart failure caused by protein buildup in the heart. It is becoming increasingly common in the aging population. However, little is known about the cause of this disease, and currently there is no approved treatment. To better understand which individuals are at risk of cardiac amyloidosis, Dr. Ronglih Liao aims to identify specific molecules in the blood that play a role in causing the disease.

