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INSTITUTE FOR GENOME SCIENCES AT UM SCHOOL OF MEDICINE ESTABLISHES GENOMIC SEQUENCING CENTER FOR INFECTIOUS DISEASES

$20 Million Federal Contract Makes IGS National Resource for Genetic Information on New or Emerging Infectious Diseases

The University of Maryland School of Medicine's Institute for Genome Sciences has been awarded $20 million from the National Institutes of Health to create a Genomic Sequencing Center for Infectious Diseases. The contract, the largest the Institute for Genome Sciences (IGS) has earned since its founding two years ago, makes IGS a national hub for genetic information on infectious disease. The institute will use the funding to sequence and analyze the genomes of infectious organisms such as agents of bioterrorism and new or emerging diseases. Emerging diseases are defined as infections that cause a sudden outbreak, such as the 2009 H1N1 flu, SARS or foodborne illnesses. The genomic information can be used to develop new diagnostic and treatment tools to fight infection.

The National Institute of Allergy and Infectious Diseases (NIAID), which is part of the National Institutes of Health, awarded contracts to three institutions to create Genomic Sequencing Centers for Infectious Diseases (GSCID). "This project places the University of Maryland School of Medicine and IGS front and center in infectious disease research nationwide," says Claire Fraser-Liggett, Ph.D., director of IGS and a professor of medicine at the University of Maryland School of Medicine. "Our work under

this project could lead to new drugs, vaccines and diagnostic tools in the fight against infectious diseases, from emerging diseases such as 2009 H1N1 to agents of bioterrorism."

The contract encourages collaboration between the IGS and outside clinicians or other scientists who have unusual or significant pathogen samples they would like to see sequenced and analyzed. Such scientists can propose projects to the IGS researchers and provide samples of the pathogens for sequencing. The contract will cover the cost of the sequencing and analysis at the IGS, and create a library of such information for sharing with researchers throughout the country. In return for proposing projects and providing samples, the outside researchers will gain access to the genomic information the IGS scientists discover.

"This new contract will encourage partnership between the world class researchers at the Institute for Genome Sciences and other distinguished scientists across the country and in our own top-tier centers of excellence such as the Center for Vaccine Development and the Institute for Human Virology," says E. Albert Reece, M.D., Ph.D., M.B.A., dean of the School of Medicine. "This is precisely the type of collaborative work we envisioned when we recruited Dr. Fraser-Liggett and her colleagues two years ago," says Dean Reece, who also is vice president for medical affairs of the University of Maryland and John Z. and Akiko K. Bowers Distinguished Professor.

NIAID designed the program to allow research centers like the Institute for Genome Sciences to respond quickly and readily, in a matter of days or weeks, in the event of a bioterrorist attack or an outbreak of a certain infectious agent. For example, if an outbreak of foodborne illness occurs, IGS scientists can quickly apply and gain approval for a project to sequence and analyze the genome sequence of that foodborne illness. "With the help of the next-generation genomic sequencing equipment we have acquired at IGS, this contract will serve as a ready-made funding mechanism that could allow us to sequence as many as 500 to 600 DNA samples in five years," says Dr. Fraser-Liggett. "We hope that by accelerating the process of sequencing and analyzing the DNA of these infectious diseases, we can also help speed scientists nationwide toward finding cures or vaccines for diseases that threaten lives in the U.S. and worldwide, such as pandemic influenza."