

## \$7 million grant aids efforts to eliminate neglected tropical diseases

Funding from Bill & Melinda Gates Foundation enables research to resume in Liberia as Ebola epidemic wanes

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ISSOUF SANOGO/AGENCE FRANCE-PRESSE

Funding from the Bill & Melinda Gates Foundation is aiding efforts by Washington University researchers to eliminate river blindness and elephantiasis, parasitic worm diseases common in parts of Africa and the Asia-Pacific. Joshua Bogus (lower left), global health research project manager for the university's team, meets with residents of a study site in Ivory Coast.

Researchers at Washington University School of Medicine (<http://medicine.wustl.edu/>) in St. Louis have received a \$7 million grant from the Bill & Melinda Gates Foundation aimed at eliminating river blindness and elephantiasis, two neglected tropical diseases that annually sicken millions.

The grant supports a team, led by Gary Weil, MD, that is conducting 12 field projects in eight countries in Africa and in the Asia-Pacific region. The new funding is timely because it allows a research project to resume in Lofa County in the West African country of Liberia. The project was suspended in March 2014 because of the Ebola epidemic.

“While our Liberian colleagues were not infected with Ebola, the disease sickened and killed some of their extended family members and friends,” said Weil, an infectious disease specialist at Washington University School of Medicine, who also helped organize an effort to send gloves, gowns, masks, goggles and no-touch thermometers to Liberia for health-care workers. “People told us that Ebola was worse than civil war in Liberia. They didn’t know where to go or where to hide to escape the epidemic.”

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In Liberia, more than 10,000 people were infected with Ebola during the recent epidemic, and 4,400 died. Lofa County – where one of the field projects is centered – was one of the first and hardest hit regions in the country, with more than 600 Ebola cases from March to November 2014.

Weil’s research in Liberia and other parts of Africa and Asia has been supported by the Gates Foundation since 2010. With the addition of the latest grant, the foundation has contributed a total of \$20 million to Weil and his team’s efforts to develop and evaluate new treatments for river blindness, elephantiasis and intestinal worm infections, all of which are common in tropical countries.

“These diseases collectively affect 2 billion people in the developing world,” Weil said. “They cause disability, blindness, developmental delays and stunting in millions. We already have made great strides, and if we can further reduce the impact of elephantiasis and lymphatic filariasis through mass treatment programs, we stand a much better chance of improving the

health of individuals and families and making a big difference in communities.”

Recently, two representatives from Weil’s team – Joshua Bogus and Kerstin Fischer – traveled to Liberia to meet with research partners at the Liberian Institute for Biomedical Research and visit communities to assess residents’ interest in resuming the research and participating in the project. In all, they visited 32 villages in Lofa County. Peter Fischer, PhD, associate professor of medicine, is the project leader in Liberia.

“Everyone was very eager and willing to resume participation in the research,” said Bogus, who manages the research project. “The trip highlighted the importance of strong community engagement to foster trust between researchers and the communities they serve.”

River blindness, also known as onchocerciasis, afflicts some 37 million people in more than 30 countries, mostly in sub-Saharan Africa. The illness is spread by black flies that breed in fast-flowing rivers, hence the name river blindness. While the disease can lead to blindness if left untreated, it more commonly causes less severe visual impairment, disfiguring skin lesions and severe itching.

Elephantiasis – also known as lymphatic filariasis – can lead to severe enlargement and deformities of the legs and genitals. The mosquito-borne illness affects 120 million people, mostly in Africa and Asia, leaving some 40 million profoundly disfigured and incapacitated.

Weil’s research project is known by the acronym DOLF, or Death to Onchocerciasis and Lymphatic Filariasis. He has been active for years in efforts to eliminate lymphatic filariasis and onchocerciasis via mass drug administration in endemic areas, which involves giving medication to everyone in areas with high infection rates, regardless of whether particular individuals have the illness. This approach works to halt transmission by reducing infection rates below the level needed for transmission of new cases.

As part of the research, the Washington University researchers are evaluating whether twice-yearly mass drug administration is more effective and less costly in the long run than annual treatment, the current gold standard. They’re also testing whether different doses and combinations of existing drugs can more quickly and effectively cure the infections compared with current treatment regimens.

As for the DOLF research site in Lofa, Liberia, Weil said: “We recently restarted mass drug administration and are very excited to have our team back on the ground in Liberia to carry out this important research, which has the potential to benefit many people in developing countries.”



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As part of the research, a finger prick is used to draw blood that is evaluated for the presence of parasitic worms.

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