There is a critical worldwide need for technologies that can provide rapid cost-effective diagnoses of brain injuries resulting from infectious diseases, especially in developing countries where the health burden is high and available resources are low. A number of infections can produce brain injury in developing countries including malaria, HIV/AIDS as well as bacterial and viral encephalitis. The most urgent and addressable need is improved diagnosis of brain injury resulting from infection by malarial parasites. Fortunately, recent advances in the use of blood-based biomarkers for acute diagnosis of brain injury, especially traumatic brain injury (TBI), have provided a firm scientific foundation for expanding this biomarker technology to brain damage produced by malaria. In fact, the FDA recently approved a blood test developed by Banyan Biomarkers, Inc. for acute diagnosis of mild vs. moderate TBI, the first FDA approved blood test for brain injury. This talk also documents the important scientific and clinical implications of this proposal for global health including the largely unrecognized potential for systemic pathogens to be etiological agents for neurodegenerative diseases such as Alzheimer’s disease (AD), Parkinson’s Disease (PD) and multiple sclerosis (MS).