

HIV/TB Scientific Working Group (SWG1) Specific Aims

The Providence/Boston (P/B) CFAR **HIV/TB Scientific Working Group** (SWG) was established in January 2017, and has built on the complementary scientific expertise of the Brown/Lifespan and BUMC HIV and tuberculosis (TB) research groups, and their domestic and international sites, in order to understand the bidirectional effects of HIV and TB and their respective global epidemics. Currently, research on TB and HIV/TB accounts for a major component of the funded research base (FRB) of the P/B CFAR. There are unique opportunities for the P/B CFAR HIV/TB SWG to develop innovative research in three areas: first, to refocus research on TB to incorporate HIV/TB, addressing issues pertaining to the natural history of HIV and its pathogenesis; second, to introduce biologic components to research that is at this point primarily clinical and/or behavioral; and third, to attract junior and senior researchers to the field. The P/B CFAR has committed to take advantage of these opportunities by creating this HIV/TB SWG.

The HIV epidemic has undone decades of TB control progress, such that TB now is the leading risk factor for TB infection and disease progression. Moreover, TB is the leading opportunistic infection and killer of persons living with HIV. The unique strength of the P/B CFAR is its access to real world data sources that academic-based modelers, epidemiologists, basic and translational laboratory scientists, and behaviorists can use to interrogate and understand these co-epidemics, ranging from underserved domestic communities with high substance abuse and incarceration rates (Boston and Providence) to multiple developed NIH-funded international sites (Brazil, India, Kenya, Russia, South Africa, Uganda, Ukraine). Although studying diseases that are clinically co-prevalent, HIV and TB researchers often remain in silos. Funding mechanisms, differences in organism structure (virology versus bacteriology), and other historical elements make collaborative, impactful joint efforts less common. The long-term goal of the SWG is to encourage commitment and interest among existing HIV/TB researchers at both institutions, leverage their complementary expertise, and accelerate research that promotes better diagnosis, treatment, and prevention of TB among HIV-infected persons in areas where the two epidemics are co-prevalent. The SWG will foster innovative research by 1) bringing together scientists working in HIV and those working in TB to collaborate on new research proposals; 2) encouraging young investigators to develop careers in the HIV/TB research field; and 3) expanding the portfolio of international HIV/TB research at the P/B CFAR-affiliated international research sites. We will work towards these goals via the following specific aims:

Aim 1: Combine translational and clinical TB research expertise at BU and extensive international HIV collaborations at Brown and BU to build a substantial HIV/TB research enterprise. We will utilize existing international relationships as a foundation for expanding HIV/TB work.

Aim 2: Focus basic and translational research on the unique features of HIV/TB co-pathogenesis.

Aim 3: Extend strengths in advanced diagnostics for TB to HIV-infected populations.

Aim 4: Recruit junior and senior investigators to pursue research in HIV/TB.

The P/B CFAR HIV/TB SWG will enhance, increase, improve and stimulate the HIV/AIDS research conducted at the institutions by facilitating cross-fertilization of research ideas, by matchmaking potential collaborative projects, and by identifying innovative new areas of HIV/TB investigation.