

### **COMpAAAS OS Modeling Abstract:**

HIV infects over 50,000 new people each year in the US. An important reason why HIV transmission persists is not because of an absence of potentially effective interventions, but rather because effective interventions are often not implemented.

To address this problem, we have created a proposal that integrated comparative effectiveness research (which compares the effectiveness of different interventions) and operations research (which compares alternative portfolios of interventions, rather than comparing single interventions in isolation).

We place particular emphasis on alcohol because it is a common modifiable risk factor for HIV transmission and is a common modifiable risk factors for HIV progression, because they often act on similar pathways to impact HIV transmission, our proposal considers portfolios of interventions that can address these oft-intertwined behaviors simultaneously or in a sequenced, prioritized progression. We also consider intervention designs that can be further tailored based on individual patient characteristics such as age and comorbidity burden.

We seek to implement this operations research model within an interactive web-based laboratory that aims to improve research methods by encouraging greater “cross-walk” between modeling, observational data analysis, and trial design; and by identify patient groups that may particularly benefit from interventions, or tailoring results to the needs of particular stakeholders.