USE OF A BIOPSYCHOSOCIAL MODEL IN A PROGRAM OF ALCOHOL BEHAVIORAL HIV PREVENTION RESEARCH: BACKGROUND AND CONFERENCE OVERVIEW

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OVERVIEW

- Conference goals

- Assumptions made in conference development

- Background and conclusions drawn in conference development

- Representation of these influences in the conference program

CONFERENCE GOALS

- Research Agenda for Alcohol Behavioral research (ABR)*--HIV Prevention
    - Content of Conference 1 presentations
    - Recent research
    - Office of AIDS Research 2020 Strategic Plan
        - Silent about ABR per se
        - Did note need for "state of the art" behavior and social science research, and for research to reduce health disparities in incidence of new HIV infections or in treatment of those living with HIV/AIDS

- Intent to publish Conference 2 presentations as journal special issue

* ABR=alcohol challenge lab experiments and event-level observational studies that can address acute alcohol effects on sexual risk behaviors

ASSUMPTIONS UNDERLYING DEVELOPMENT OF THIS CONFERENCE

- From Bill George Conference 1 presentation: "The capacity to prevent unsafe sex ultimately hinges on scientists' capacity to understand what transpires in those critical moments when sexual decisions are made or 'just happen.' THEREFORE PREVENTION SCIENCE MUST REMAIN LINKED TO BASIC SCIENCE AIMED AT EVALUATING THEORY-DRIVEN MECHANISMS EXPLAINING WHY PEOPLE TAKE THESE RISKS (Caps mine)."

- Likelihood that an individual engages in HIV-related sexual risk behaviors at any moment may be influenced directly or indirectly by multiple levels of factors, from individual level biobehavioral factors "out" to the level of the society and public policy (the BPS model)

- Alcohol is a factor at each of these levels that ultimately may determine risk

- These 3 points imply that a HIV prevention ABR agenda must emphasize an individual's behavior in contexts, and that these contexts may be defined in part by alcohol

WHAT 25 YEARS OF RESEARCH HAS SHOWN US ABOUT INDIVIDUAL LEVEL BIOBEHAVIORAL FACTORS

- Acute alcohol intoxication can be causally related to high-risk sexual behavior under specified conditions in individuals with specified characteristics
  - Mediators and moderators have emphasized person variables defined by demographic and psychological factors
  - Individual variables that are alcohol-related (e.g., alcohol expectancies) or HIV-specific (e.g., condom use self-efficacy)
- These findings have influenced HIV "evidence-based" prevention interventions, such as those targeting hazardous drinkers or individuals diagnosed with alcohol use disorder
  - Nevertheless, models of HIV prevention or those applied to develop HIV prevention interventions include factors that may mediate or moderate alcohol's effects on sexual risk behaviors, but alcohol is not integrated into these models (see current CDC list of E-B prevention interventions)
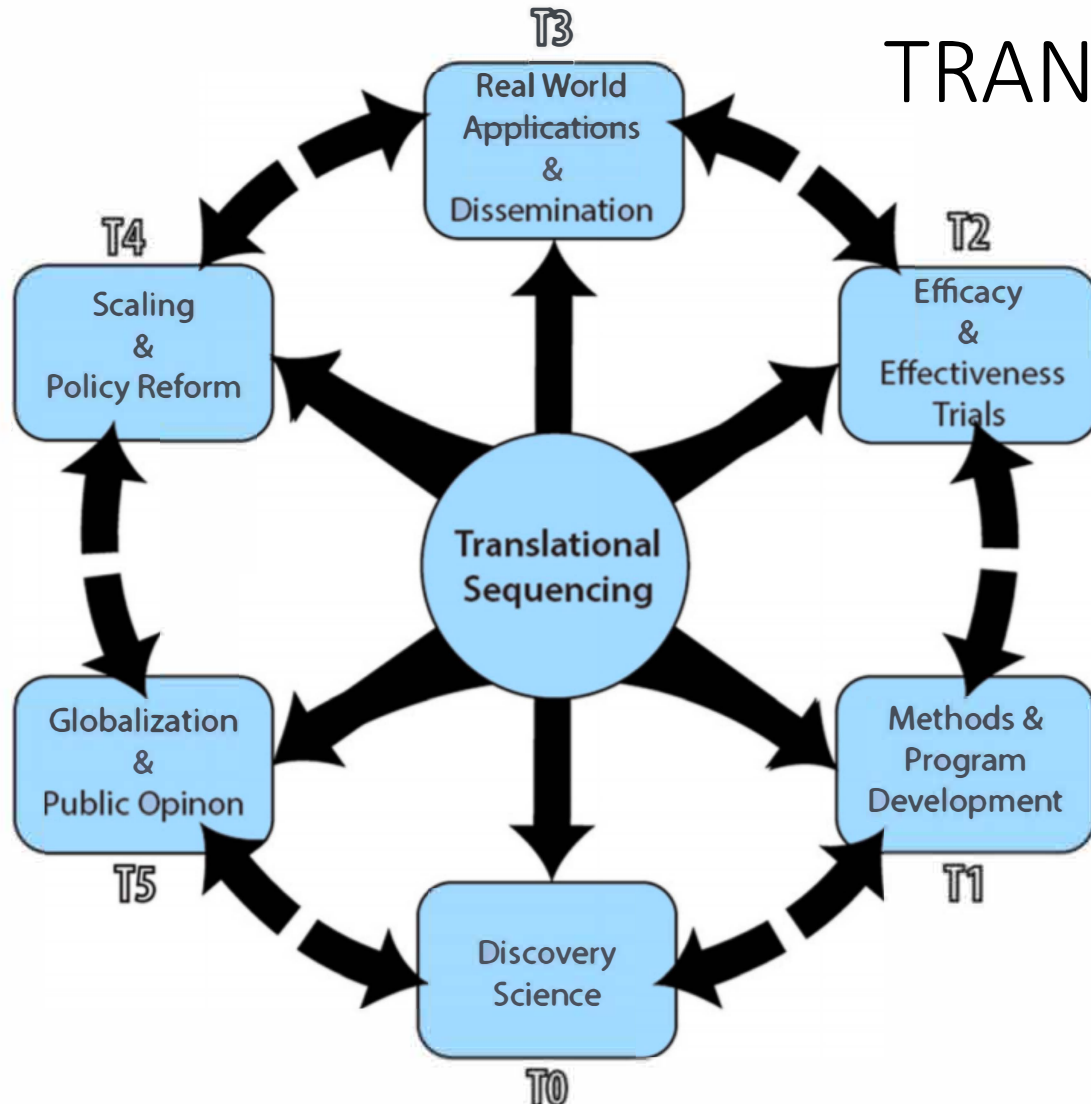
NEW WAVE OF ABR NEEDED TO ACCELERATE AND EXPAND TRANSLATION

- Extend alcohol challenge studies by targeting high-risk populations (e.g., MSM, African American men)

- Priority to study of immediate context variables, neglected in comparison to individual level, person variables

- Go beyond alcohol myopia theory to integrate alcohol consumption with relevant theories about sexual risk or HIV prevention to guide ABR

- Case of ART adherence: How different from and how similar to when sexual risk behavior is the outcome of interest

NEW WAVE ABR NEEDED--2

- Expand ABR beyond individual-level factors in order to understand how alcohol might affect individual sexual decision-making as an individual and contextual variable that may be more distal as well as proximal to the decision-making event
  - Requires a program of research that integrates observational studies with experimental studies in a way that the design of each is informed by theory and empirical findings from the other
- Apply principles and methods of "big data" and machine learning to the ABR sexual risk agenda
  - Potential to collect data of a wide range on sexual risk behaviors in the natural environment that could serve as a source of idea generation about mechanisms that then could be tested by use of observational or experimental studies
- Design observational studies in a way that would have stronger implications for making causal connections between alcohol use and sexual risk behaviors than is possible with traditional methods

DESIGN HIV PREVENTION ABR AS SYSTEMATICALLY TRANSLATIONAL

- Fishbein (2016) model of translational research

- In thinking about HIV prevention ABR as translational, we're primarily considering stages 0, 1, and 2: Establishing mechanisms and integrating that knowledge into developing new or modifying existing interventions and evaluating them (MOST)

Fig. 1 | The full translational spectrum of prevention science model showing the following six basic stages of translational research: T0 Discovery Science, T1 Methods and Program Development, T2 Efficacy and Effectiveness Trials, T3 Real-World Applications and Dissemination, T4 Scaling and Policy Reform, and T5 Globalization and Public Opinion

REPRESENTATION IN THE CONFERENCE MAIN PROGRAM

- **Expansion of alcohol challenge research and mechanisms**
  - Drs. Palfai & Cook on MSM
  - Drs. Newcomb & Edelman on African American men
  - Drs. Shuper & Leeman on contextual variables
  - Drs. Woolf-King & Springer on ART adherence
  - Drs. Lewis & Chander on synthesis toward intervention development
- **Innovative methods, observational studies, and mechanisms**
  - Drs. Young & Clapp on the use of big data
  - Drs. Gage & Kahler on observational designs and causal inference
  - Drs. Caniglia & Fujimoto on modeling methods
- **Innovative methods and intervention development and evaluation**
  - Drs. Kugler & Gwadz on the MOST approach to intervention development and evaluation
- **Putting it all together**
  - Drs. Kalichman & Bryan

THANK YOU