0.52 (95% CI = 0.40–0.69), 0.53 (95% CI = 0.41–0.68), 0.30 (95% CI = 0.13–0.68), respectively, $p < 0.05$). DISCUSSION/SIGNIFICANCE OF IMPACT: Our study showed that minority (AA and Hispanics), foreign born and uninsured with depression were less likely to use mental health services and/or antidepressant drug relative to other groups. Culturally and linguistically adapted intervention that involves community and providers to increase awareness about depression and the available services/treatment among minority, immigrant, and uninsured population are needed.

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Participant recruitment program at the University of Michigan CTSA

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OBJECTIVES/SPECIFIC AIMS: Across the Clinical and Translational Science Award (CTSA) Consortium, participant recruitment into clinical trials is essential to advance science. Without proper participant recruitment, clinical trials do not result in gains in scientific knowledge, wastes time, funds, and other resources (Mahon *et al.*, 2015). METHODS/STUDY POPULATION: Participant recruitment programs across the consortium are inconsistent in staffing, program services, and program goals. The participant recruitment program at the University of Michigan's (U-M) Michigan Institute for Clinical & Health Research (MICHR) provides expertise, tools, and resources to facilitate participant recruitment in clinical and health research studies. RESULTS/ANTICIPATED RESULTS: We will explain our program infrastructure, staffing, services, and discuss how we maintain an engaged registry with over 27,000 participants interested in research studies at U-M. DISCUSSION/SIGNIFICANCE OF IMPACT: Proper recruitment into clinical trials results in findings that are relevant for genetic, cultural, linguistic, racial/ethnic, gender, and age differences (Cottler *et al.*, 2013). We hope to share our best practices that aid in the development and success of participant recruitment across the CTSA Consortium.

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Using the multiphase optimization strategy to engineer an optimized STI preventive intervention among college students

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OBJECTIVES/SPECIFIC AIMS: The goal of this study is to develop an effective and efficient STI preventive intervention among college students following the principles and phases of MOST. METHODS/STUDY POPULATION As part of the preparation phase, an explicit conceptual model, drawing heavily on theory and prior research, was used to translate the existing science into 5 candidate intervention components (ie, descriptive norms, injunctive norms, expectancies, perceived benefits of protective behavioral strategies, and self-efficacy). For the optimization phase, in Fall 2016 all first-year students (n = 3547) from 4 universities were recruited to participate. Students were randomized to 1 of 32 different experimental conditions that included a combination of the candidate intervention components. Component effectiveness was evaluated using data from an immediate post-intervention survey on respective component mediators (eg, alcohol and sex-related descriptive norms). After a second factorial experiment (Fall 2017), only those intervention components that meet the pre-specified criteria of day $\geq$0.15 will be included in the optimized intervention. The evaluation phase will evaluate the effectiveness of the optimized STI preventive intervention via a randomized-control trial (Fall 2018). RESULTS/ANTICIPATED RESULTS: Preliminary results from the first factorial experiment suggest that descriptive norms and injunctive norms intervention components were significantly effective in reducing post-intervention perceived alcohol prevalence ($\beta = -0.28$, $p < 0.001$) and approval of alcohol ($\beta = -0.33$, $p < 0.001$), and sex-related norms ($\beta = -0.23$, $p < .001$). These results, in combination with process data, are being used to inform revisions of the intervention components to be included in a second factorial screening experiment. DISCUSSION/SIGNIFICANCE OF IMPACT: This study demonstrates how an iterative approach to engineering an STI preventive intervention using MOST can affect the behaviors of college students and serve as a foundation for other translational science.

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A community-academic partnership to understand the correlates of successful aging in place

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OBJECTIVES/SPECIFIC AIMS: The Rockefeller University-Center for Clinical and Translational Science and Clinical Directors Network (RU-CCTS/CDN) community-academic-partnership engaged with Carter Burden Center for the Aging (CBCA), a multisite senior community services organization serving Upper Eastside and East Harlem, NY, to develop community-engaged research. Many seniors served by CBCA are racial/ethnic minorities, live in poverty, suffer from multiple chronic conditions, depression, and food insecurity; there is no simple measure routinely used to characterize the health/health risks of program participants. Multiple biological, musculoskeletal, psychosocial and nutritional factors collectively contribute to frailty a construct that is variously defined, and has been used as a surrogate or predictor for health outcomes. Aim 1: We will engage seniors, CBCA leadership, New York City Department for the Aging, staff and other stakeholders in research priority-setting, joint protocol writing, research conduct, analysis and dissemination to cultivate a population of elder stakeholders interested in designing and participating in this and future research. Aim 2: We will characterize the health status of the resident and nonresident populations by collecting data across 3 sessions to include validated cardio-metabolic, musculoskeletal, chronic condition prevalence, quality of life, psychosocial, and nutritional assessments. METHODS/STUDY POPULATION: Stakeholders will be engaged through the process of Community Engaged Research Navigation and a series of meetings and exercises to refine priorities and research design, co-write the protocol, provide feedback on conduct, analyze and disseminate results of the project. RESULTS/ANTICIPATED RESULTS: Outcomes will include rates of participation and retention in assessments and engagement activities, themes from qualitative research, contributions to study design, placement of aims on the T0-T48 spectrum, social network analysis, classification of engagement on the spectrum of Community-based Participatory Research (CBPR) and partnership assessment. The primary outcome is frailty (6-minute walk test); We will examine associations among these measures with services utilization data captured electronically by CBCA. A key deliverable of this project will be a REDCap data capture platform that integrates and displays these measures that will be sustainable for CBCA. DISCUSSION/SIGNIFICANCE OF IMPACT: This practice-based research partnership will allow us to extract, replicate and extend the lessons learned about engaging stakeholders in generating hypotheses, operationalizing research, collecting and analyzing data, and disseminating results. The collaboration is built around generating and testing rigorous clinical an health services hypotheses that are derived from real-world practice-based needs and also incorporate basic science measures to embed and examine mechanistic hypotheses. Testing a simple to implement validated surrogate frailty measure will accelerate progress on evidence-based practices to test interventions that enhance healthy aging and serve as a model for future similar partnerships to form a network for community-based senior research. This work aligns with the RU-CCTS grant Hub Research goal to engage populations across the life span, including hard-to-reach and underserved populations, such as minority seniors.

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Predictive metabolism studies of varenicline and implications of its metabolites in nicotine addiction

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OBJECTIVES/SPECIFIC AIMS: The central goal is to predict the metabolites of varenicline and predictively evaluate their propensities for eliciting an increased binding effect in the brain. METHODS/STUDY POPULATION: Molecular modeling computational software and other cheminformatic tools present a strategic in silico strategy to predict a complete metabolic transformation for the varenicline molecule. Molecular docking tools help to highlight key interactions of the varenicline with key metabolizing enzymes that are differentially expressed across a population. This will assist in validating clinical models for smoking cessation. RESULTS/ANTICIPATED RESULTS: Differentialized binding results depending on whatever metabolite is produced. DISCUSSION/SIGNIFICANCE OF IMPACT: Products of metabolism of

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