

# **Sample funded projects from the FY2018 NIH portfolio**

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NIH RePORTER provides public access to NIH-funded intramural and extramural research projects from the past 25 years. It also includes information on projects funded by the Centers for Disease Control and Prevention (CDC), Agency for Healthcare Research and Quality (AHRQ), Health Resources and Services Administration (HRSA), Administration for Children and Family (ACF), and U.S. Department of Veterans Affairs (VA). Below are sample NIH-funded projects that were active during this revision of this resource. Links to each grant's RePORTER description and publications are embedded in each description.

## **Research projects**

### **Enhancing pre-hospital outcomes for cardiac arrest**

**Mashid Abir, MD, MSc**

*University of Michigan Medical School*

*1R01HL137964-01 (new R01 project)*

Out-of-hospital cardiac arrest (OHCA) is a common, life-threatening event associated with poor patient outcomes. Approximately 30% of patients survive to hospital admission and less than 10% are ultimately discharged alive. Some communities have been consistently more successful than others to respond and treat OHCA. How these successful processes are practiced and the factors that contribute to their successful implementation is largely unknown. Moreover, it is unknown how interaction of EMS agencies with other important stakeholders who provide care before and after EMS arrives such as first-responders (e.g., police, fire) and hospitals has not been undertaken. This project uses sequential mixed methods to accomplish three aims:

1. Identify top-and bottom-performing EMS agencies in survival for OHCA.
2. Define best practices at top-performing EMS agencies.
3. Validate factors associated with high survival at top-performing EMS agencies.

#### **Sample publication**

- An emergency medicine-primary care partnership to improve rural population health: Expanding the role of emergency medicine

### **Mixed-methods study of EBP sustainment in a statewide service system**

**Gregory Aarons, Ph.D.**

*University of California, San Diego*

*4R01MH072961-10 (extended R01 project)*

Evidence-based practices (EBPs) are being implemented in public service sectors with little systemic knowledge about what factors facilitate or limit their sustainment.

Moreover, many implementation efforts cease after initial grant funding ends. There is evidence that leadership, policies, resource availability, collaboration, and organizational infrastructure may be key determinants of long-term sustainment. This

project uses mixed methods to examine factors that support and/or limit sustainment of an evidence-based child neglect intervention in a large statewide public service system.

Document analysis and conversational interviews examine leadership, policy, and public-academic collaborations influence sustainment. Service-provider surveys examine leadership, organizational factors, and organizational climate for sustainment. Main outcomes include the sustained diffusion of EBP in the service system, the fidelity with which the EBP is delivered, and the extent to which provider organizations have developed the means to sustain EBP. Study stakeholders collaborate on a comprehensive theoretical model of sustainment in public service sectors that can guide future research and implementation practice.

#### ***Sample publications***

- An overview of research and evaluation designs for dissemination and implementation
- Methods to improve the selection and tailoring of implementation strategies
- The humble leader: Association of discrepancies in leader and follower ratings of implementation leadership with organizational climate in mental health

### **Social determinants of primary care utilization among urban community mental health center patients with serious mental illness**

Kristen Abraham, Ph.D.

University of Detroit Mercy

1R15MD010214-01 (new Academic Research Enhancement project)

People with serious mental illnesses (SMI) face enormous health disparities and are at risk of premature mortality due to medical conditions. Ethnic and racial minorities and women with serious mental illness may encounter even greater health risks. Increasing the utilization of primary care services is a promising way to reduce health disparities among disadvantaged populations. This mixed methods study will identify individual and interpersonal factors associated with primary care services use among a diverse sample of people with SMI receiving mental health care at urban community mental health centers. The study has the following specific aims:

1. To prospectively assess the contributions of health literacy, health insurance literacy, mental health stigma, discrimination, and mistrust in the health system on primary care utilization over the course of six months among a racially diverse sample of urban community mental health center patients with SMI.
2. To assess primary care experiences and preferences of a racially diverse sample of urban community mental health center patients with SMI as a function of whether patients received primary care in the prior six months. An exploratory aim related to Specific Aim 2 is to examine potential gender and racial/ethnic differences related to primary care experiences and preferences.

The study will employ a sequential mixed-methods design. First, a prospective survey study will be conducted to address Aim 1. Second, using a subsample of participants from the prospective study, focus groups will be conducted to better understand patients' preferences for primary care, and their personal experiences of the social

factors assessed in the prospective study. The focus groups will yield critical information as to how the intersection of multiple social identities influences patients' primary care experiences and preferences. Consistent with NIMHD's goal to enhance research capacity to create a culturally sensitive workforce, the research team includes undergraduate and graduate students who will receive health disparities training research through their study involvement.

***Sample publication***

- [Self-efficacy and quality of life among people with bipolar disorder](#)

**A systems-based approach to disseminate and implement an effective sugar-sweetened beverage reduction intervention**

Jamie Zoellner, RD, Ph.D.

*University of Virginia School of Medicine*

*5R21CA202013-03 (continuing R21 project)*

This project is designed to reduce the excessive lag time along the research pipeline by speeding the translation of emergent findings from SIPsmartER, a health literacy intervention to reduce sugar-sweetened beverage (SSB) consumption. The targeted Appalachian region of Southwest Virginia for this application exceeds the national average consumption of SSB by more than three times. SIPsmartER is a theory-based, 6-month, multi-component health literacy intervention designed to reduce SSB intake. Emerging findings from this rigorously designed trial illustrate that SIPsmartER is an efficacious intervention to decrease SSB intake: intervention participants have significantly decreased SSB intake by 227 SSB kcals/day (95% CI=326, 127; p<0.001) from 0 to 6 months compared to a decrease of 53 SSB kcals/day (95% CI=326, 127; p<0.001) in the control group (p<0.001). Furthermore, preliminary data indicate that SSB reductions are being sustained one-year post intervention.

To translate these promising effects into population-level SSB reductions, a concerted effort is needed to understand the feasibility of organizational-level adoption and implementation of SIPsmartER and to develop an implementation support system to aid delivery within existing systems. Additionally, since a system-delivered intervention would be conducted under less-controlled conditions, ascertaining individual-level effects on SSB is necessary.

We target four medically-underserved Southwest Virginia Department of Health districts and their client population, in a mixed-methods design that includes formative, process, and outcome evaluations. The goal is to have a SIPsmartER implementation support system that can be tested in a subsequent R01 type 3 effectiveness-implementation hybrid randomized-controlled trial, with a long-term goal of broad scale SIPsmartER dissemination within public health systems to achieve population-level SSB reductions.

***Sample publications***

- [Implementation of media production activities in an intervention designed to reduce sugar-sweetened beverage intake among adults](#)
- [One-year mixed-methods case study of a community-academic advisory board addressing childhood obesity](#)

- The influence of parental health literacy status on reach, attendance, retention, and outcomes in a family-based childhood obesity treatment program, Virginia, 2013-2015

## **Targeting surgeons' decision-making for lip surgery**

Carroll Ann Trotman, DDS, MA, MS

Tufts University

5U01DE024503-03 (*continuing cooperative agreement research project*)

Cleft lip/palate (CL/P) are among the most common of all birth defects. To correct the obvious facial disabilities of babies with CL/P, surgeons perform an initial or primary repair of the lip and nose soon after birth. Unfortunately, many patients (and caregivers) are dissatisfied with the surgical results: Patients remain with a facial disfigurement and impairment in facial soft tissue movements-particularly in facial expressive behaviors. Multiple revision surgeries during childhood and adolescence are common to improve the initial results. The psychosocial and economic burden of care on these children and their caregivers are great.

Traditionally, the decision for lip revision surgery has been based on subjective assessments of nasolabial form, and less frequently, circumoral movement but without a method to quantify the facial movements/form before surgery or after surgery. To this end, we have developed an Intervention that utilizes a novel set of dynamic and static quantitative measures and a systematic subjective evaluation to quantify facial disability for the treatment planning of lip surgery and for assessing surgical outcomes. The quantitative measures include,

1. 3D dynamic and statistical modeling of patients' mean facial movements, and,
2. 3D static facial image data,

both compared with mean control movement and static image data, respectively. As a necessary second step in this formative research, using separate prospective cohorts of patients who have lip revision and lip repair surgery, we will conduct a 'proof of concept' Phase II randomized clinical trial (RCT) with the following three specific aims.

1. To qualitatively assess how surgeons integrate the Intervention's objective measures and visual aids with the systematic subjective assessment in the decision-making process for the clinical surgical procedures of lip revision and lip repair.
2. To quantitatively assess the extent to which the Intervention changes surgeons' problem list and treatment planning goals for lip revision and lip repair.
3. To obtain estimates on means, variances, and intra-patient correlation, and to estimate surgeon-by-condition interaction effects for surgical outcomes under the Intervention and the standard of care or control conditions.

Ultimately, while this Phase II RCT is not a therapeutic trial in the usual sense of providing a patient with a therapy, it will be unique for craniofacial rehabilitation in that the focus is to optimize the design of a novel assessment, improve an individual

patient's diagnostic evidence base available to the surgeon for surgical planning, and evaluate whether post-surgical results are improved with the intervention.

## **Mixed methods research training program**

*Joseph J. Gallo, MD, MPH*

*Johns Hopkins University*

*5R25104660-04 (continuing research education project)*

The overarching goal of this proposal, *Mixed Methods Research Training Program for the Health Sciences*, is to provide a state-of-the-art methodology training program to enhance the mixed methods skills of investigators. Mixed methods research is defined as the collection, analysis, and integration of both quantitative (e.g., RCT outcome) data and qualitative (e.g., observations, interviews) data to provide a more comprehensive understanding of a research problem than might be obtained through either alone.

Public health researchers increasingly use mixed methods approaches without substantive training in the latest scientific techniques. Yet, an increase in applications submitted to NIH using mixed methods reflects the growing awareness of the importance of this approach in addressing population and behavioral health. The proposal is timely in that NIH (OBSSR) issued "best practices" recommendations in 2011. No other national program in mixed methods education and mentorship exists for the health sciences. The specific aims of this training program are:

1. To identify and recruit investigators (called Scholars) using mixed methods approaches to the Mixed Methods Research Training Program,
2. To provide a mentoring- based research training program in mixed methods research that addresses study designs, data collection, measurement, theme development, data analysis procedures, visualization of designs and procedures, and models of exemplary mixed methods NIH-funded studies through didactic instruction, individualized feedback and project consultation, use of online educational materials, and carefully-designed immediate and long-term assessments; and,
3. To evaluate the outcomes (both short-term and long-term) of the Mixed Methods Research Training Program using metrics of skills development, research performance, and capacity building.

We will recruit 14 investigators per year who will participate in a 3-day training program supplemented with webinars and other activities. We will match participants with resource consultants across the United States. After matching, and following an introductory webinar on mixed methods, we will provide an interactive 3-day summer course on mixed methods research. Following the summer course, the Scholars will interact with Program Directors and consultants through on-line conversations and learning communities that will help them further develop their research training through application to their area of interest. An evaluation plan will provide individual metrics and allow ongoing program monitoring and revision.

### ***Sample publications***

- Development of a self-rated mixed methods skills assessment: The National Institutes of Health Mixed Methods Training Program for the Health Sciences
- Integrating quantitative and qualitative results in health science mixed methods research

## Career and fellowship projects

### ***She's prepared: The impact of intimate partner violence on women's engagement in the PrEP care continuum***

Tiara C. Willie, M.A.  
Yale University

1F31MH113508-01A1 (new predoctoral fellowship award)

A significant relationship exists between intimate partner violence (IPV) and HIV. IPV-exposed women are almost 10 times more likely to report an HIV infection. Extant research indicates multiple direct (e.g., forced sex with risky partner) and indirect (e.g., poor mental health) pathways linking IPV experiences to HIV risk. Developing ways to prevent HIV among IPV-exposed women that is not partner-dependent is needed. Pre-exposure prophylaxis (PrEP), is a daily oral medication and may be the most viable and novel HIV prevention option for IPV-exposed women. However, engaging in PrEP care can be hard including multiple steps (e.g., daily adherence, quarterly medical visits). Women's engagement in the PrEP care continuum may be disrupted by four HIV-related risk factors (economic instability, sexual autonomy, substance abuse, depressive symptoms). First, economic instability can make women dependent on their abusive partner for money and insurance, which may hinder PrEP uptake and adherence. Second, women with low sexual autonomy (e.g., freedom to express one's sexual self) may feel unable or uncomfortable using PrEP if her partner disagree with her wish to use PrEP, which can prevent PrEP uptake. Lastly, substance abuse and feelings of depression can disrupt cognition, making it difficult to engage in daily functions, which may prevent PrEP adherence.

To date, there is a dearth of studies examining the implications of IPV on women's engagement in the PrEP care continuum, despite the potential barriers associated with IPV. This is concerning since the Trans-NIH HIV- Related Research Priorities called for research addressing how violence influences experiences along the HIV prevention continuum. This F31 aims to improve the sexual health of women across these research aims:

- 1a. Examine the effects of IPV on women's engagement in the PrEP care continuum (i.e., interest, uptake, adherence, follow-up visits), and HIV-related risk factors using data from a cohort study of women (n=250),
- 1b. Explore four HIV-related risk factors as mediators linking IPV and the PrEP care continuum, and,
2. Describe women's experiences and processes along the PrEP care continuum (n=32).

The proposed research addresses a critical need to understand the relationship between IPV and women's engagement in the PrEP care continuum in order to implement PrEP care in a safe and effective way. This research will devise PrEP engagement strategies, inform intervention development, and help the fight against HIV/AIDS for women. During this 2-year research and training fellowship, the applicant will develop interdisciplinary social science skills including advancing statistical analysis skills, gaining experience in mixed-methods study design and qualitative data analysis, while refining academic and scientific communication. This comprehensive training program will prepare the applicant for a career as an independent violence epidemiologist and academic mentor conducting empirical IPV research while designing HIV prevention interventions with for women.

***Sample publications***

- [Examining the impact of intimate partner violence type and timing on pre-exposure prophylaxis awareness, interest, and coercion](#)
- [The implications of intimate partner violence on health-related quality of life among adults living with HIV who experienced childhood sexual abuse](#)

***An analysis of psychosocial risk and protective factors: Accelerated cognitive aging and mild traumatic brain injury (MTBI) among retired NFL & former NCAA football players***

*Robert W. Turner, II, Ph.D.*

*Duke University*

*1K01AG054762-01A1 (new mentored research scientist development award)*

Robert W. Turner II is a Research Scientist in the Center on Biobehavioral Health Disparities Research at Duke University. He has training in medical sociology, ethnographic methods, and health disparities research. His previous and current work has exposed him to theoretical perspectives and empirical approaches pertinent to health disparity and aging research among men. The current proposal is for a five-year Mentored Research Scientist Development Award (K01) from the National Institute on Aging for training and support that address gaps in his knowledge of biobehavioral factors underlying Alzheimer's Disease (AD) dementia related mild traumatic brain injury mTBI and accelerated cognitive aging. In collaboration with his mentoring team (Drs. Tim Strauman, Keith Whitfield, and Toni Antonucci) he has developed a comprehensive training and research plan that will both fill in these knowledge gaps and prepare him for an independent research career.

The overarching goal of his K01 is to gain expertise on the interrelationships between multiple measures of psychosocial and neurocognitive factors associated with AD dementia related accelerated cognitive aging, and serve as bridge for him to establish an independent investigator career in conducting biobehavioral health disparities research in adult male populations. To accomplish this goal, he proposes four career development activities and three research aims that combine instruction with established scholars in survey research techniques; formal coursework; participation in ongoing seminars at Duke and the University of Michigan; one-to-one directed readings with mentors; and finally, conducting of a "proof of concept study" from start to finish.

Data will be collected using a mixed-method design that consists of a survey, focus groups, and in-depth interviews. The three research aims will enable him to integrate and apply knowledge gain through the proposed training activities by creating a more robust portrait of psychosocial protective and risk factors that may impact the long-term consequences of mTBI among men than previously possible. The approach used in this project will address;

- Male vulnerabilities in predicting the impact of psychosocial factors on accelerated cognitive aging, and,
- How understandings of masculinity develop across and within groups in relationship to pain, injury, and brain health.

This project will continue to build on insights he has gained through his examination of data from the Study of Retired NFL Players. By completing these aims, he will test important hypotheses and make substantial evidence based contributions to describing the process of dementia related cognitive accelerated aging resulting from mTBI. This proposal is relevant to public health because it will explore innovative approaches to address functional, cognitive, and psychosocial vulnerabilities in concussed men, and may ultimately reduce the risk of Chronic Traumatic Encephalopathy (CTE), and Alzheimer's disease resulting from concussions. It will also inform an R-series grant proposal to study AD dementia related accelerated cognitive aging and brain imaging that Dr. Turner plans to submit in year 4 of the project.

#### **Sample publication**

- [A preliminary study of youth sport concussions: Parents' health literacy and knowledge of return-to-play protocol criteria](#)

### **M-health tools to enhance treatment of teen substance abuse and mental illness**

Zachary William Adams, Ph.D., HSPP

Indiana University-Purdue University at Indianapolis

5K23DA038257-04 (*continuing mentored patient-oriented research award*)

The goal of this Mentored Patient-Oriented Research Career Development Award is to develop the candidate into an independent investigator prepared to lead large-scale, rigorously designed studies evaluating the utility of mobile health (mHealth) technologies in improving treatment efficiency, efficacy, and reach among high-risk youth with substance use disorders (SUD) and comorbid mental illness.

Comorbidity is common in adolescence and often complicates treatment progress. Use of mHealth approaches-such as mobile applications that tailor content to patients' specific needs, enhance patient engagement, and facilitate existing evidence-based treatments-holds great promise in reducing the public health burden of addiction and mental illness. This application proposes training and Stage IA-IB intervention development research that represents a logical progression from the candidate's prior research and training to address career development goals in six areas:

1. development of mobile applications for adolescent mental health,

2. etiology and treatment of comorbid SUD and trauma-related mental illness in adolescents,
3. conduct and evaluation of clinical trials,
4. multilevel and longitudinal data analysis,
5. grant management, and,
6. research ethics.

Goals will be accomplished through high caliber didactic training, participation in national conferences and institutes, and hands-on research experience. Activities will be completed under the mentorship of an accomplished team of expert on-site investigators in the fields of adolescent comorbidity and integrated treatments, mHealth methodologies and evaluation, technology-based mental health interventions, qualitative and mixed methods research, and analysis of longitudinal, clinical trials data.

The central hypothesis of the candidate's three-component research project is that developmentally tailored mobile applications that incorporate evidence-based treatment principles can facilitate increased patient engagement in and between sessions, thus improving the efficiency, efficacy, and reach of treatments for this highly vulnerable population.

***Sample publications***

- Development and pilot evaluation of a tablet-based application to improve quality of care in child mental health treatment
- Mobile devices for the remote acquisition of physiological and behavioral biomarkers in psychiatric clinical research

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