

## The FAST PACE Toolkit: A tool to foster state-wide translation science

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**OBJECTIVES/GOALS:** To create, train, and evaluate the FAST-PACE (Promoting Academic and Community Engagement) Toolkit that catalyzes academic-community translation science teams during a public health emergency. The toolkit is a road map based on the Research Readiness and Partnership Protocol (R2P2), which was developed from the Flint Water Crisis. **METHODS/STUDY POPULATION:** A literature review was conducted by the Michigan Institute for Clinical & Health Research Community Engagement (MICHRE CE) program and the Community-Based Organization Partners (CBOP), to identify important and common elements in disaster response protocols with a set of key interviews (n = 31) to glean perspectives from community leaders. Key findings were extracted and reviewed to generate guidelines and recommendations for the R2P2 protocol. The co-developed FAST-PACE Toolkit launched its expansion statewide to address emergencies and health disparities of communities in crisis. The iterative process consisted of community report-outs, gathering input from stakeholders, via discussion, and evaluation surveys. The feedback was used to develop, enhance, and tailor the toolkit and training content. **RESULTS/ANTICIPATED RESULTS:** Data from training (n = 8) of the critical elements of the FAST-PACE Toolkit, which provides guidance for academic and community team members that includes 1) assessing community assets and needs; 2) engaging in clear and bidirectional communication; 3) facilitating transparency and equitable partnering; 4) identifying health equity and justice issues; and 5) conducting the evaluation of research. The training will be disseminated in-person and virtually across the state of Michigan resulting in participants sharing community-identified health issues and social determinants of health to assist MICHRE CE to suggest resources to address health impacts. **DISCUSSION/SIGNIFICANCE OF IMPACT:** The FAST-PACE Toolkit borne from the flint water crisis and confounded by other crises used CEnR principles to create a translation science roadmap. It equips communities and collaborating academic institutions across the state to respond to public health crises and fosters equitable translation science partnerships built on respect and trust.

## The effect of providing genetic risk information on lifestyle behaviors in African Americans

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**OBJECTIVES/GOALS:** The goal of this proposal is to better understand how informing African Americans of their genetic risk affects their behavior as part of a cardiovascular disease (CVD) risk reduction intervention. **Aim 1:** To determine the effect of genetic risk knowledge on CVD health behavior. **Aim 2:** To determine the effect

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of genetic risk knowledge on secondary variables. **METHODS/STUDY POPULATION:** Method: Fifty participants from the Baton Rouge metropolitan area will be recruited. Participants must be African American adults over the age of 18. Potential participants will be recruited using community-based efforts that have been successful in recruiting this population specifically. Participants will be randomized into one of two groups. Genetically Unblinded Group (GU) will be “genetically unblinded” after baseline orientation. Genetically Blinded Group (GB) will be “genetically blinded” until the end of the study. This study design ensures that we can measure the impact of knowledge of genetic risk on participant behavior. **RESULTS/ANTICIPATED RESULTS:** Baseline participants’ characteristics (body mass index, blood glucose, and cholesterol) will be summarized by intervention group, with counts and percentages for categorical variables and means and 95% confidence intervals for continuous variables. **Primary Outcomes:** Attendance in intervention sessions will be counted across groups. Effect on genetic risk knowledge will be determined via comparing the difference between the increased healthy lifestyle behaviors at endpoint between Genetically Unblinded (Cases) and Genetically Blinded Groups (Control). **Secondary and Tertiary Outcomes:** Mean change in secondary outcomes in the GU group will be compared against the mean change in the GB group. Participant’s survey responses and changes in physical measurement from baseline to endpoint will be observed. **DISCUSSION/SIGNIFICANCE OF IMPACT:** This study empowers African Americans in Baton Rouge by providing genetic risk knowledge for cardiovascular disease. By addressing social determinants of health, it promotes behavior change, improves health outcomes, and fosters trust, potentially reducing health disparities and advancing health equity.

## Informatics, AI and Data Science

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### Optimizing trauma prognostication via machine learning: Automating frailty detection in geriatric trauma patients

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**OBJECTIVES/GOALS:** This study evaluates the role of visual machine learning algorithms (VMLA) in automating a predictive model of central sarcopenia in geriatric trauma patients based on the psoas:lumbar vertebral index (PLVI) and trauma-specific frailty index (TSFI). **METHODS/STUDY POPULATION:** 150 trauma patients seen at Jon Michael Moore Trauma Center within J.W. Ruby Memorial Hospital in rural West Virginia were included in this investigation across the life spectrum. The VMLA was trained on their standard of care trauma panoramic CT scans. Five expert reviewers segmented bilateral psoas muscles and the L4 vertebrae of each CT image at one slice inferior to the posterior elements of the L4 vertebrae. The data were read into a U-net convoluted neural network as ground truth. Labels were preprocessed to focus on the regions of interest and standardized into four classes: right psoas, left

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