team-oriented data science for more innovative and reproducible translational research. METHODS/STUDY POPULATION: To help TTs better leverage data science, the Institute for Clinical and Translational Research (ICTR) at the University of Wisconsin-Madison orchestrated a strategic initiative involving four main actions. • Assess needs. Determine how TTs are using data science and identify essential tools for success. • Establish partnerships. Develop strategic relationships to centralize resources and engage data scientists. Provide team science training to ensure effective integration. • Develop educational pathways. Design and implement workshops to demystify novel data science tools and upskill translational scientists. • Facilitate culture change. Identify ways that all ICTR services can help identify needs, foster educational pathways, and encourage partnerships to help TTs better leverage data science. RESULTS/ANTICIPATED RESULTS: Initial assessments indicated that fewer than 25% of TTs receiving pilot awards used data science tools, and only 10% had a data scientist on their team. Data from collaboration planning sessions indicated that few TTs used data science, but all were interested in learning more. To address this deficiency, ICTR partnered with the Data Science Institute and the Section of Applied Clinical Informatics. This expertise informed resource development (e.g., a data science primer, websites) and generated workshops. Educational opportunities include tailored workshops to help TTs better curate data and create more efficient workflows, graduate course modules to improve rigor and reproducibility, and seminars illustrating translational applications of AI, visualizations, and large data integration. DISCUSSION/ SIGNIFICANCE OF IMPACT: The ICTR Data Science Initiative was designed to empower TTs to more effectively integrate data to power translation. As data science approaches and expertise are embedded within teams, we anticipate continued increases in interest and usage of data science tools, collaborative publications, and data rich applications for extramural funding.

## An input-mechanism-outcome model to support integration of community health workers in primary care Alexandria Blackr<sup>1</sup>, Gaetano Lotrecchiano<sup>2</sup>, Maria Juarez, Reyes<sup>1</sup>, Ronald Shope<sup>2</sup>, Noha Aboelata<sup>3</sup>, Lavette King<sup>3</sup> and Brianna Wells<sup>3</sup> <sup>1</sup>Stanford University; <sup>2</sup>The George Washington University and <sup>3</sup>Roots Community Health Center

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OBJECTIVES/GOALS: Community health workers (CHWs) are links between the community and healthcare. As primary care (PC) expands to address social drivers of health, CHWs are becoming part of PC teams, yet how the two integrate is not well understood. Using an input-mechanism-outcome (IMO) model, this research seeks to develop a model to expand CHW-PC integration efforts. METHODS/STUDY POPULATION: Participants were recruited from Roots Community Health Center (Roots), a CHC serving historically marginalized communities, that has successfully integrated a CHW role, Roots Health Navigators (RHNs), into PC services. The preliminary conceptual framework for this study was guided by an overarching IMO model and informed by social identity theory, team science, and the interprofessional care literature. A mixed methods study was conducted in three phases: 1) cross-sectional survey, 2) semi-structured interviews, and 3) model development. The survey identified team dynamics such as communication, trust, and shared understanding, and interviews explored how these collaborative teaming mechanisms take shape. Findings were merged into a final model of CHW-PC integration that was reviewed by

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Roots leaders. RESULTS/ANTICIPATED RESULTS: Survey results (n = 25) highlighted highly rated team dynamics including shared understanding and acting and feeling like a team. Qualitative findings (n = 10) described how integration occurred through complex interactions that were community-responsive and collectively reduced burnout among the team. Joint findings noted the importance of RHNs to continuity of care, building trust, and enhancing PC team effectiveness. Findings informed the development of a model of CHW-PC integration. This expanded on the preliminary conceptual framework by highlighting the dynamic relationship between mechanisms, processes, and team emergent states, as well as providing evidence to support feedback loops between inputs, mechanisms, and outcomes with overarching influence from the contextual setting. DISCUSSION/SIGNIFICANCE OF IMPACT: With a deeper understanding of the mechanisms of CHW-PC integration, findings informed the development of a model that can support other communities to replicate this approach to care and address critical patient needs. Teaming factors that sustain CHW-PC integration may be transferrable to other care teams integrating nontraditional roles.

## Fostering collaboration and innovation across the Clinical and Translational Science Awards (CTSA) Consortium

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OBJECTIVES/GOALS: The objective of the Clinical and Translational Science Awards (CTSA) Program Collaborative and Innovative Acceleration (CCIA) Award Initiative is to support synergistic collaborations to develop, demonstrate, and sustainably implement innovative solutions across and beyond the CTSA Consortium. METHODS/STUDY POPULATION: All CCIA awards between 2016 and 2022 were reviewed and analyzed by Fiscal year, activity code, and research area using NIH analytical tools and platforms. Subject matter experts categorized each award by research topics, study populations, stage of translational science, and innovation type. The number and type of collaborating organizations were noted and major accomplishments and expected outcomes were summarized. RESULTS/ANTICIPATED RESULTS: Between FY2016 and FY2022, NCATS funded 37 U01 and 18 R21 CCIA awards including >90 different public and private partnering organizations. CCIA awards spanned all stages of translation including preclinical (26%), clinical (36%), implementation (31%), and public health research (7%). Of the 55 CCIA awards, 31% focused on urgent public health needs and 25% were designed to address health disparities. Broadly, types of innovations included: Data science-related projects (18%), clinical care innovations (15%), biomarker or clinical outcome assessments (13%), digital health solutions (11%), therapeutic development (11%), therapeutic discovery (9%), education and training (7%), diagnostic tools (5%), software tools (5%), or tools for clinical research (5%). In total, >735 publications cited CCIA awards. DISCUSSION/SIGNIFICANCE OF IMPACT: For >8 years, the CCIAs have brought together researchers from diverse scientific disciplines across the nation to speed the development of new health solutions with broad impact. Advancements in genomic screening, for example, have led to policy changes while new delivery approaches have improved the quality of care for underserved populations.