obese women will have measurably increased inflammatory markers in their breast tissue, which are reduced after bariatric surgery. We expect that change in mammographic density may correlate with fibroglandular volume change on MRI; there are little data on change in background parenchymal enhancement in the setting of obesity and weight change and quantifying this will provide preliminary data for future work. Last, we expect that undergoing BC screening will be easier for patients after weight loss due to constraints of imaging equipment and potential bias in the screening process. DISCUSSION/SIGNIFICANCE: Screening for BC is paramount to improving outcomes yet people with obesity are screened less with worse outcomes. Studying the effects of weight loss on the breast may improve interpretation of breast imaging in the setting of obesity and identify markers of risk. Understanding barriers to screening may help us develop strategies to improve screening.

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Quality by Design: A Framework for Study Success

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OBJECTIVES/GOALS: The SC CTSI Quality by Design (QbD) program aims to improve the execution of clinical research studies identifying and addressing possible issues before implementation. The program's overall goal is to optimize operational design to achieve an 80% on-time completion rate. METHODS/STUDY POPULATION: Adapted from the Clinical Trials Transformation Initiative, our QbD program applies principles of quality management, project management, and team science to SC CTSI-funded studies. The process begins with a Design Studio for systematic review of critical-to-quality factors and a discussion of risks and mitigation plans. Studio attendees generally include the research team, SC CTSI faculty, and at least one community member. Outcomes include mitigation plans, a study project plan, and continued support from the project-tailored advisory board. We will iteratively evaluate satisfaction, quality improvement, and study completion rates. RESULTS/ANTICIPATED RESULTS: In an evaluation of the pilot phase, QbD participants responded that careful planning and expert input added value to their studies. The QbD process improved the quality of their studies, and all participants plan to apply QbD tools and resources to future studies. Beyond quality improvement, other anticipated outcomes include higher on-time study completion rates and uptake of QbD resources by other research teams. We also plan to assess the comparative benefit of QbD by study type. DISCUSSION/SIGNIFICANCE: Broader application of the CTSI QbD program has the potential for widespread benefit on research processes and outcomes. Studies implemented with minimal avoidable errors are more likely to complete on time, helping ensure efficient use of valuable resources and participant time.

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Raising research awareness through StudyFinder

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OBJECTIVES/GOALS: To increase public awareness and access to research opportunities at the University of Minnesota (UMN) utilizing StudyFinder, a public-facing website that features actively enrolling UMN research studies and directly connects website visitors with study teams. METHODS/STUDY POPULATION: Promote the University of Minnesota CTSI's StudyFinder website to the public via social media ad campaigns and community outreach. Upon completion of the latest StudyFinder enhancement project in 2021, CTSI focused 2022 efforts on marketing and promotion of the site. CTSI created three StudyFinder social media ad campaigns in January, June, and October. CTSI also planned outreach events during the week of Clinical Trials Day, the Minnesota State Fair (1.8M attendees over 12 days), and the UMN's Urban Research and Outreach-Engagement Center Community Day. RESULTS/ANTICIPATED RESULTS: Website traffic data from Google Analytics indicated a 72.76% increase in StudyFinder sessions from 2021 (Jan 1, 2021 to Nov 1, 2021) to 2022 (Jan 1, 2022 to Nov 1, 2022), with 16,262 sessions to 28,094 sessions, respectively. Direct emails from potential participants to study teams increased 89% in that same timeframe, from 3,082 emails to 5,819 emails. Targeted marketing campaigns and attending community events can improve the visibility of an institution's research and connections of potential research participants to research teams. DISCUSSION/SIGNIFICANCE: Recruitment remains a main challenge in clinical and translational research. StudyFinder is an important patient-facing tool to connect individuals to specific studies. Future directions include expanding marketing efforts, events, and public feedback.

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Successful Implementation of a Cross-Institutional Clinical Research Coordinator Pool to Support Georgia Clinical and Translational Science Alliance (Georgia CTSA) Investigators

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OBJECTIVES/GOALS: In 2020 the Georgia CTSA Clinical Research Center site at Emory University developed a highly trained, credentialed research coordinator pool with a goal to expand the pool to include clinical research coordinators from our partner institutions with the ability to work across institutional barriers in support of Georgia CTSA investigators. METHODS/STUDY POPULATION: Fall 2022, an Emory Investigator requested Georgia CTSA Biorepository samples with supporting clinical data for a NIH funded study. This provided a pilot opportunity to utilize clinical research nursing support offered by the UGA Clinical and Translational Research Unit (CTRU). De-identified samples were collected from our Biorepository while Emory's coordinators and lab collaborated with UGA's nursing support for data collection. Our obstacle for cross-institutional support was access to Emory Healthcare (EHC) medical records that would be needed by the UGA nurses, but partnerships created with the Georgia CTSA allowed us to overcome this, granting access to the electronic medical records (EMR) needed to complete the study. RESULTS/ANTICIPATED RESULTS: As expected, the process of credentialing and gaining access to the EHC EMR for the UGA team was the most time-consuming in the development of the pool. Discussions began in June 2021 to determine needs to allow the UGA research nurses to support the Emory coordinator pool. Requirements included acquiring an EHC network ID, completion of required Emory research training, letters of support from the Georgia CTSA outlining the collaboration between institutions, and a credentialing application. All

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steps were completed in May 2022 and the team began to identify studies that could benefit from this collaboration. Given that all credentialing and access needs were in place, the team was able to initiate the study and complete all study requirements, from sample identification to data collection and clean up, in five weeks. DISCUSSION/SIGNIFICANCE: Workforce shortages of experienced clinical research coordinators make it imperative to overcome barriers presented by institutional rules in order to efficiently utilize available resources to conduct high quality research. The CTSAs provide the perfect opportunity for partner institutions to develop processes to allow support across sites.

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The Hatchery, a Universal Approach for Incubator Space in Academia

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OBJECTIVES/GOALS: The goal of the Hatchery is a new approach to de-risk innovative life science ideas within an entrepreneurial setting. The Hatchery creates value by vetting the initial potential through experimental testing. METHODS/STUDY POPULATION: In this study we took a functioning wet laboratory space that was vacant due to principle investigator movement, and created a pipeline for its use in life science startup formation. A functioning laboratory can remain unoccupied for a notable period with transitions of research leadership. At the same time, a life science startup company who is testing core principles of their technology need wet lab space at an affordable cost. Our solution called the Hatchery provides startup companies a state-of-the-art wet laboratory space, next to a research hospital, for a very short duration of time and minimal fee. This novel approach allows preliminary validation of a technology for initial NIH SBIRs and STTRs funding pathways. RESULTS/ANTICIPATED RESULTS: Initial findings demonstrated the effectiveness of the Hatchery method. Our pilot study included five different life science startups company tenants. Each company was enabled to de-risk technologies and secure a phase 1 SBIR/ STTR funding or resulted in an exit via acquisition. DISCUSSION/SIGNIFICANCE: Entrepreneurship is a growing approach for testing and expanding new research areas. The Hatchery model makes use of existing space and infrastructure, can scale with an entrepreneurial community, and can serve as critical pilot data for a more permanent space commitment.

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Utility of a Team Science and Project Management Approach to Providing Effective Participant Recruitment Support to Research Teams: The Indiana CTSI Recruitment Concierge Service (RCS)

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OBJECTIVES/GOALS: Evaluate effectiveness of participant recruitment service to improve study enrollment through customer feedback surveys and recruitment data obtained by research teams utilizing services. Use survey information to conduct gap analysis of additional support needed for participant recruitment. METHODS/STUDY POPULATION: Participant enrollment is often cited as one of the most challenging aspects of clinical research. In 2021, the Indiana CTSI used project management techniques to design and pilot a Team Science approach for providing participant recruitment support to clinical research teams. This service called the Indiana CTSI Recruitment Concierge Service (RCS) is comprised of recruitment, community engagement, social media, communications, and project management expertise. Additional experts are chosen to participate based on the study needs (regulatory, population insight, informatics, clinical services, etc.) RCS customers are comprised of study teams from a variety of areas and research experience. These customers are sent surveys to evaluate the support they received and provide suggestions for improvement. RESULTS/ANTICIPATED RESULTS: The RCS assisted 72 study teams in 2021 and 85 (as of November) in 2022. These studies were referred via word of mouth as no advertising of the service had been done to date. All customers were provided a study specific consultation with recommendations of services and resources that would assist their study. Some services recommended were: local study listing and volunteer registry (All IN for Health), digital marketing support, materials design expertise, community engagement and healthcare patient recruitment guidance. The overall feedback from RCS customers has been positive with most teams indicating the support improved their study recruitment and/or engagement plan. RCS will use information obtained to develop a strategy for prioritizing services due to the overwhelming number of requests received. DISCUSSION/SIGNIFICANCE: Using project management techniques and a Team Science approach, the Indiana CTSI was able to develop a comprehensive participant recruitment service that integrates clinical research operations, community engagement, and informatics expertise to design study specific recruitment plans and coordination of services.

Science Policy and Advocacy

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Housing and Environmental Exposures: A Systematic Literature Review on Research and Policy Implications

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OBJECTIVES/GOALS: Poor housing conditions and quality can be linked with residents'environmental exposures, which may contribute to a variety of adverse health outcomes. This systematic literature review will examine literature around housing, environmental exposure, and health; and policy implications to reduce the impact of housing on environmental exposures. METHODS/STUDY POPULATION: This systematic literature review will identify and evaluate published peer-reviewed articles as well as governmental and NGO policy briefs relating to connections between housing quality and condition, neighborhood characteristics, and environmental exposures (e.g., lead poisoning, secondhand smoke, PFAS chemicals) in the United States; and will particularly focus on health implications of such environmental exposures, racial/ethnic and socioeconomic disparities in exposure, and current and future policy recommendations to alleviate the association between housing and environmental risk. A computerized literature search of relevant electronic databases (e.g., PubMed, Sociological Abstracts, EPA database, Congressional database) for literature published after 2000 will be conducted. RESULTS/ANTICIPATED RESULTS: The findings from this literature review will be split up into categorizations around (1) the contribution of housing/neighborhoods on resident

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