interest are submission rates and success rates (the number of grants awarded divided by the number of applications). We plan to examine the effects of several characteristics, including number of sessions attended, cohort year, and faculty vs. postdoctoral status. We will also examine whether there were differences in submission and success rates between female and male researchers and between underrepresented minority scholars and those who identified as white or Asian. Lastly, we will report submission and success rates for each grant mechanism and compare them to the national averages. DISCUSSION/SIGNIFICANCE: Obtaining external research funding is an important part of a faculty career, especially at its early stages. This research has important implications for the design of similar programs intended to increase submission and success rates for federal grant applications.

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Evaluation of a Simulation Curriculum to Improve Nursing-Led Early Physical Rehabilitation of Critically Ill Children

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OBJECTIVES/GOALS: Early pediatric intensive care unit (PICU) mobilization is safe and associated with improved outcomes. Nursing-specific mobility training is desired and improves mobilization compliance. Thus, our aim is to implement a nurse-targeted, simulation-based early mobility curriculum to determine if it increases the frequency of PICU mobilizations. METHODS/STUDY POPULATION: We will conduct a single center pre-post interventional study of an in situ nurse-targeted, simulation-based early mobility curriculum. We will prospectively evaluate mobilization events in 100 patients admitted during the pre-intervention phase (n=50) and the post-intervention phase (n=50). Inclusion criteria are children ages 1 day to 17 years old admitted to the PICU for ≥3 days. Exclusion criteria include specific mobility contraindications. PICU-wide deployment will be complete when >80% of nurses have participated in the curriculum. Demographic and clinical information will be obtained. Mobility data obtained will include number of nursing-led mobilizations, highest level of mobility achieved, and potential safety events. Data will be collected from the EMR and the nurse caring for the patient. RESULTS/ANTICIPATED RESULTS: The primary endpoint will be the change in the number of nursing-led mobilization events per patient day. The secondary effectiveness outcome is the highest level of mobility achieved by patients during mobilization events in a day. A final secondary end point will be safety events defined as unplanned extubations, medical device dislodgement, falls, and cardiac arrests. Descriptive statistics for continuous variables will be presented as the median and interquartile range and categorical variables will be expressed as percentages. The effect of the simulation curriculum on the clinical outcomes will be assessed using mixed-effects models. Due to the lack of normality in number of nurse-led mobilizations and highest level of mobility achieved, the analysis will be performed using log-normal models. DISCUSSION/SIGNIFICANCE: We hypothesize that we will demonstrate the crucial importance of hands-on nursing education to improve and increase early mobility of critically ill children

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Evidence to impact: Developing a workforce of translational research professionals

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OBJECTIVES/GOALS: The goal of the Translational Research Program (TRP) at the University of Toronto is to provide structured and adaptive competency-based training around the translation, mobilization, implementation, and commercialization of research for the current and future Canadian healthcare workforce. METHODS/STUDY POPULATION: Guided by the Toronto Translational Framework, the TRP is a two-year hybrid master's degree program that integrates courses, case-studies, mentorship, and experiential learning to facilitate real-world student-led translational projects. Focusing on skills development and competency-based assessment, the curriculum emphasizes ongoing reflection, interprofessional collaboration, and multidisciplinary problem-solving using human-centered principles. Learners identify problems using contextual inquiry to define unmet needs and frame design requirements. Systematic ideation is used to generate, select, and validate promising concepts for further iterative prototyping and evaluation. RESULTS/ANTICIPATED RESULTS: Throughout the program, students demonstrate a range of collaborative skills and activities around developing, assessing, and implementing new health interventions. Learners apply the Toronto Translational Framework and refine their professional competencies during the final year of the program in a student-led Capstone project. The unconventional combination of a guided framework and a learner-driven curriculum has produced over 120 graduates in a variety of careers within government, industry, clinical settings, and start-ups. The program's focus on problem-solving and lifelong learning is growing Canada's translational workforce and advancing translational health science education. DISCUSSION/SIGNIFICANCE: The TRP addresses the need to educate healthcare professionals in Canada about translational research and accelerate the transformation of scientific discoveries into tangible interventions that benefit human health, improve clinical medicine, and enhance patient care.

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Factors Associated with Confidence in Career Progression among Underrepresented Post-doctoral Fellows and Early-career Faculty

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OBJECTIVES/GOALS: Underrepresented (UR) biomedical researchers leave research positions at a disproportionate rate. We

aim to identify factors associated with confidence in career progression and intent to continue clinical research training in UR post-doctoral fellows and early-career faculty. METHODS/STUDY POPULATION: Building Up is a cluster-randomized trial at 25 academic institutions. In September-October 2020, 224 participants from the Building Up study completed the pre-intervention assessment, which included questions on demographics, science identity, mentoring competency, confidence in career progression, and intent to continue clinical research training. Using multinomial logistic regression controlling for gender and race/ethnicity, we identified factors associated with confidence in career progression, and intent to continue clinical research training. Statistically significant findings are reported. RESULTS/ANTICIPATED RESULTS: The cohort (N=219) is 80% female, 33% non-Hispanic Black, and 34% Hispanic. Having mentors that address diversity was associated with belief that career advancement is as open to them as anyone else (OR=1.7) and confidence in ability to overcome professional barriers (OR=1.4). Higher science identity (OR=4.0) and having mentors who foster independence (OR=1.7) were associated with confidence in ability to progress in career. Higher science identity was also associated with confidence in ability to overcome professional barriers (OR=2.2) and intent to continue studying biomedical sciences (OR=3.4). Being faculty (OR=3.8), higher science identity (OR=3.8), and having mentors that align expectations (OR=2.3) were associated with intent to continue clinical research training. DISCUSSION/SIGNIFICANCE: These findings suggest that science identity and mentoring play key roles in confidence in career progression and intent to continue clinical research training. These factors are important to consider in retaining UR early-career biomedical researchers.

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Forging a New (Digital) Path: Designing a Strategic Pilot to Engage and Educate the Public about Clinical Research on Social Media

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OBJECTIVES/GOALS: To conceptualize, implement and evaluate a three-pronged social media plan with goals to: 1) disseminate information about the Southern California CTSI and its activities on multiple platforms; 2) educate the public about clinical research participation; 3) use storytelling methods to spread awareness about research careers. METHODS/STUDY POPULATION: We will start by creating a logic model to identify activities, outputs, short, medium and long-term outcomes of this social media innovation project, using CTSI and community stakeholder input (focus groups). This model will guide the creation of a comprehensive strategic social media plan that includes an editorial calendar for each platform, storyboarding and an operationalized narrative strategy, as well as KPIs relating to areas like reach, engagement, conversion, and sentiment. Collecting/analyzing these metrics will yield information about how the public feels about clinical research and will assist us in refining our content strategy. After completing formative research, we will create accounts on Instagram, TikTok, LinkedIn and Meta to complement our existing Twitter presence. RESULTS/ANTICIPATED RESULTS: We hope to identify which types of content lead to greater engagement and more positive sentiment on each platform, which will help us iteratively refine our

content strategy. Examples of content type can include: imparting research-related information, debunking myths, providing career information, etc. Through this process we will also gain knowledge about what methods are more appealing to our users, such as narrative storytelling. Visually, we anticipate learning about what types of multimedia content works best as a mechanism to disseminate information about clinical research (e.g. video, photo, audio, or a combination). DISCUSSION/SIGNIFICANCE: In a post-pandemic world of dis- and misinformation, it is more important than ever to disseminate trusted, vetted information about clinical research in novel and engaging ways. Through this initiative we will gather information, metrics and key lessons learned to present back to CTSA hubs to inform their short and long-term social media strategies.

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Grant Writing Program to Enhance Junior Faculty Research Funding Success

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OBJECTIVES/GOALS: The grant writing process provides investigators with critical thinking, problem solving, and communication skills, crucial for personal and professional development. However, opportunities for junior faculty to learn these skills are highly variable. Thus, we developed a grant writing program to assist in the preparation of an NIH R proposal. METHODS/STUDY POPULATION: The R Club Grant Program was implemented in 2021 for junior faculty of the University of Cincinnati's College of Medicine and Center for Clinical & Translational Science & Training (CCTST). The program consists of a series of workshops (e.g., How to Craft a Specific Aims Page, How to Construct a Competitive R01 Proposal) utilizing examples of successful proposals and grant review criteria to demonstrate how to translate a conceptual framework into a research proposal (level 1). All participants can receive constructive feedback on a Specific Aims page from an experienced grant writer (level 2), and for a select cohort, the program provides comprehensive scientific content edits and iterative feedback on a full research proposal, with a focus on grantsmanship, presentation, and overall competitiveness (level 3). RESULTS/ANTICIPATED RESULTS: Over three NIH grant cycles, the program to date has provided 38 early-career investigators with multi-level grant writing support. All participants attended the workshops and received supporting documents, 21 received feedback on a Specific Aims page, and 6 received one-on-one writing assistance on their full research proposal. Of the 6 investigators who received the greatest level of support, 3 have received NIH scientific review, with a 66.6% funding success rate for either an original (R01, n=1) or subsequent overlapping (R35, n=1) proposal. In a survey sent to workshop attendees, 100% of respondents (n=23) reported (Strongly Agreed or Agreed) that the training was a worthwhile investment in their professional development and 96% stated that they will be able to apply the knowledge and skills learned. DISCUSSION/SIGNIFICANCE: Initial evaluation measures suggest that grant writing support programs have great potential to enhance funding success rates. As the program evolves it will be crucial to evaluate both qualitative and quantitative feedback measures to ensure efforts are directed to the appropriate level(s) of service to maximize the funding success of our faculty.