and services to promote the translation of clinical evidence into practice. We developed a D&I Science Core strategic plan reflecting our research community's needs by assessing Implementation Science (IS) competencies. METHODS/STUDY POPULATION: The Tufts CTSI D&I Science Core was launched in early 2023. To design services that meet research community needs, we conducted a survey and key informant interviews based on Padek et al.'s list of Implementation Science (IS) competencies. The competencies are organized into four domains (Definition, Background, and Rationale; Theory and Approaches; Design & Analysis; and Practice-Based Considerations) and categorized by expertise level (beginner, intermediate, advanced). Participants who had attended or expressed interest in a D&I interest group were asked via an email survey to rate their level of confidence in completing selected IS-related research activities, about their experience with IS research or practice, and the types of resources, services and training they desired. RESULTS/ANTICIPATED RESULTS: Twenty researchers (20/65, 31%) submitted survey responses and six researchers participated in in-depth interviews. Survey respondents felt most confident in engaging stakeholders in IS research and least confident selecting a model or framework for a study. Results suggest that researcher capacity building is needed to: • Understand IS models and frameworks and their approaches, strengths, and limitations • Select and use models and frameworks in studies • Assemble IS teams and prepare grant proposals Suggestions for resources, services, and training, include: • Customized education to address diverse needs, knowledge levels, and learning styles • Promotion of D&I Core consultations and grant support services • Sharing of successful proposals to help researchers learn how to apply IS methods DISCUSSION/SIGNIFICANCE: A strategic workplan for the D&I Science Core was developed and implemented to address the findings. Initial emphasis is on developing easily accessible resources and timely consultations for investigators new to IS needing to apply these methods in current grant proposals, while also providing training resources for deeper skill building.

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Bridging Gaps in Global Health Engineering Education

Mary Bevilacqua
University of Colorado Denver

OBJECTIVES/GOALS: This project aims to improve the design of medical technology for global health by addressing gaps in engineering education. Our primary goal is to develop open educational resource'curriculum boosters' that can be added to existing BME curricula to build skills in transdisciplinary collaboration, practical ethics, and failure resilience. METHODS/STUDY POPULATION: A phasic mixed-method research strategy has been employed. The Needs Analysis includes a systematic review and meta-analysis of existing knowledge regarding the three conceptual pillars of Transdisciplinary Collaboration, Practical Ethics, and Integrated Resilience. The Behavioral Study includes surveys, interviews, observations, and biometric data collection from working engineers, engineering students, global health stakeholders, and clinicians. The Validation Study will be conducted via small group workshops, a semester-long engineering design course, and a summer study-abroad course. Data collected will be analyzed and used to refine the proposed educational strategies. RESULTS/ANTICIPATED RESULTS: The final educational strategies will be structured into 'curriculum boosters' and published as open educational resource materials. The boosters and their supporting data will be made available to other engineering education programs with the goal of promoting widespread adoption and integration of these methods. DISCUSSION/SIGNIFICANCE: The long-term outcome of this ongoing work is to train a new generation of engineers prepared to participate adeptly in the co-design of technological solutions for complex global healthcare challenges by working 'with, not for,' clinicians, communities, and other stakeholders in peripheral healthcare settings.

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Art as a Multiplier of Science Communication

Carsten Skarke, Jessica German and Emma A. Meagher
Institute for Translational Medicine and Therapeutics (ITMAT) , University of Pennsylvania

OBJECTIVES/GOALS: Scientists are increasingly confronted with 'science critical' #_msocom_1 belief systems. The politicization of science fuels hesitancy towards evidence-based therapies. To overcome these barriers, we aim to devise strategies to communicate clinical translational science (CTS) through art. METHODS/STUDY POPULATION: A two-year pilot artist-in-residency (AIR) program embedded in the Translational Research Immersion Program (TRIP). Since 2009, TRIP contributes to CTS Workforce Development (WD) through a 10-week mentored, curriculum-rich summer undergraduate research experience. Students are recruited from 5 regional institutions, 6 HBCUs, and the University of Puerto Rico. AIR is composed of 3 phases: the "Immersive Phase" where the artist gains intensive exposure to the scientific process through the lived experience of TRIP students, the "Productive Phase" where the artist conceptualizes the process of CTS into works of art, and the "Engagement Phase" where the CTS workforce, artists, and community members coalesce around science-to-art materializations. RESULTS/ANTICIPATED RESULTS: In 2022 & 2023 the AIR participated in ~35hrs of CTS research seminars, panel discussions, and professional skills workshops. Additional TRIP student-AIR interaction occurred in focus groups including visits to mentor's labs. An AIR-led workshop culminated in an Empowering CTS Communication event where TRIP students engaged with community members through elevator pitches of their CTS summer project on a speed-rotating basis. A month-long art-CTS exhibition planned for 3/2024 will feature contributions from AIR, TRIP students, and ITMAT community members. Qualitative insights were that TRIP is an effective art-science incubator, students strengthened their CTS communication skills, art functions as an icebreaker between science and communities with an ocean of opportunities for science education. DISCUSSION/SIGNIFICANCE: AIR embedded into existing CTS WD programs is proposed as creative approach to strengthen the reputation of science in the public. CTS-informed art functions as connective tissue between public and CTS workforce. The hands-on experience to adopt art as a science communication tool is a powerful soft skill for the next generation of CTS investigators.

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