

multiple-choice, open-ended survey including questions regarding, definition, impact, barriers, resources, and training preferences specific to translational science. Digital survey links were emailed to Duke University faculty. **RESULTS/ANTICIPATED RESULTS:** In total, 350 responses were collected. While perceptions of translational science varied, common defining elements were noted, including multidisciplinary collaboration (69%) and transitions between research stages (63%). Translational science was said to have an overall positive impact, despite 37% of participants stating issues of insufficient institution-wide support and 62% citing minimal training in translational science skills. **DISCUSSION/SIGNIFICANCE OF IMPACT:** Effective support for translational science requires a multi-faceted approach, as perceptions differ among investigators and between career stages. Duke MERITS will seek to standardize education and support ranging from teambuilding to entrepreneurship, and to promote support from institutional leadership to reduce barriers and facilitate acceleration of translational science.

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### Perspectives on increasing competency in using digital practices and approaches to enhance clinical translational research: A qualitative study

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**OBJECTIVES/SPECIFIC AIMS:** The use of digital practices and approaches can potentially increase the quality and efficiency of all phases of the traditional clinical translational research (CTR) process. The purpose of this qualitative study was to describe key stakeholders' perspectives on the need to: (A) formalize training in digital practices and approaches among CTR trainees; and (B) develop an aligned educational framework that defines core competencies, educational methods, and evaluation metrics. **METHODS/STUDY POPULATION:** Participants (n = 66) were recruited via email from June to November 2017 using purposive and snowball sampling methods across 4 groups: (1) English speaking national and international experts from academic and private sector institutions with working experience in using digital practices and approaches in research (n = 36), (2) CTR educators (n = 8), (3) CTR trainees (n = 13), and (4) Members of the Southern California Clinical and Translational Science Institute at the University of Southern California (n = 9). Online focus groups were conducted using a semi-structured, open-ended interview guide through Google Hangouts and a conference call interface. Sessions were recorded and transcribed verbatim, and 2 research team members performed independent content analyses to identify before and emergent themes using an inductive analytic approach. Kappa was calculated for inter-rater agreement and repeated until agreement was at least 0.70. **RESULTS/ANTICIPATED RESULTS:** Participants' average age (41.2 yrs, SD 9.26), gender (59% females), non-Hispanic (97%), race (72% White), and doctoral degree (67%). In total, 85% reported experience in teaching digital practices and approaches in research, although 70% were currently not teaching in this field. Participants reported that complementary teaching in digital practices and approaches across the 15 Clinical and Translational Science Award (CTSA) CTR competency areas was relevant, especially in literature review, research implementation, statistical approaches, biomedical informatics, regulatory support, responsible conduct of research, scientific communication, translational teamwork, cross-disciplinary training, leadership, and community engagement; and less so in literature critique, study design, sources of error, and cultural diversity. Additional competencies were identified, for example, online study recruitment, crowdfunding, team and project management, scholarly impact metrics (Altmetrics), ethical and regulatory guidance for conducting research using digital approaches. Five main educational practices were identified including online training sessions, flexible on-demand modules, in-person consultations and training, and project-oriented hands-on workshops. Among the identified challenges were the need for clear metrics in order to evaluate such a training program. **DISCUSSION/SIGNIFICANCE OF IMPACT:** There was consistent support for a structured program to help CTR trainees to develop competency in digital research practices and approaches. Our results indicate that an education program focused on digital practices and approaches should include a step-wise approach to meet different research and training goals, allowing attendees to increase their awareness and specialized hands-on practical experience.

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### Phase II award: Evaluation of outcomes in preparing independent researchers by continued mentoring and career development support (2006–2016)

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**OBJECTIVES/SPECIFIC AIMS:** The Hispanic Clinical and Translational Education and Career Development program entails formal research training (Phase I) through an established post-doctoral Master of Science in Clinical and Translational Research. The most qualified graduates from Phase I compete to receive 1–2 years support for continued mentoring and career development (Phase II program) aiming to apply for a regular research grant or career award (K or R series). **OBJECTIVE:** This project aims to present an evaluation of the Phase II program and Scholars outcomes. **METHODS/STUDY POPULATION:** **METHODS:** Participants (n = 12) responded to a semistructured interview including 43 questions about program's processes and outcomes. Descriptive and content analysis was done. **RESULTS/ANTICIPATED RESULTS:** **RESULTS:** Results show that 83% are women, 42% are MD, and 67% are affiliated to the University of Puerto Rico-Medical Sciences Campus and 67% were able to fulfill their career development expectations during the Phase II Award. At present (92%) are conducting clinical research in their current position. Outcomes include new selection of research line, K Awards, and enhanced skills in clinical and translational research **DISCUSSION/SIGNIFICANCE OF IMPACT:** **DISCUSSION:** Challenges identified were: time management, better coaching and a more structured mentoring experience. The main benefit of the program were protected time, research budget, and the opportunity to acquire more research experience.

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### Promoting collaboration among researchers: A team science training curriculum

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**OBJECTIVES/SPECIFIC AIMS:** As multidisciplinary, interdisciplinary, and transdisciplinary research has become imperative to solving the complex problems of contemporary healthcare, teaching researchers how to create and maintain high-functioning and innovative teams has also become paramount. In Fall 2016, the Center for Improvement Science (CIS) core, in collaboration with the Translational Workforce Development (TWD) core, at the Cincinnati Center for Clinical & Translational Science & Training (CCTST) began offering training in Team Science in an effort to better prepare researchers for collaborative work. Since then, the CIS has expanded Team Science education into a multifaceted and adaptable curriculum that includes workshops, team consultations, Grand Rounds, grant writing assistance, grant review, train-the-trainer, and a graduate-level course. **METHODS/STUDY POPULATION:** Over almost 2 years, we have offered 9 unique workshops attended by individuals from the University of Cincinnati, UHealth, and Cincinnati Children's Hospital Medical Center. Recruitment was primarily accomplished via email invitations. Topics ranged from introductory team science issues such as Creating Teams, Team Effectiveness, and Team Leadership to more advanced team science areas such as Team Dysfunctions and Conflict Management. In addition, we have consulted with researchers on Team Science components of grant applications and served as grant reviewers for Team Science elements in a competitive, internal research funding program. We have developed tools and teaching strategies for faculty members tasked with teaching students about collaboration (train-the-trainer). And finally, we offered a graduate level course on Collaboration and Team Science. **RESULTS/ANTICIPATED RESULTS:** Over 250 participants attended our workshops and Grand Rounds, many at the faculty level, but we also had research staff and graduate students register. Content was very well-received, with workshop evaluations typically scoring in the high 4.5 and above range (on a 5-point scale, with 5 being the highest rating). The CIS team received (and accepted) at least 2 follow-up invitations from workshop participants to provide training to an additional team or group. We are tracking data on long-term effects of team science training and consultation, both in research productivity and team satisfaction/longevity. **DISCUSSION/SIGNIFICANCE OF IMPACT:** The goals of Team Science training at the Cincinnati CCTST are 2-fold: to provide practical knowledge, skills, and tools to enhance transdisciplinary collaboration and to promote systemic changes at UC, CCHMC, and UHealth that support team science. After almost 2 years of training, team science is gaining traction among key leaders at our local institutions and a broader audience of researchers who see how collaborative practice can enhance their professions.

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### Research navigation services and onboarding: Succeeding in the research environment

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**OBJECTIVES/SPECIFIC AIMS:** Describe (1) the components of the research navigation service and consultation/onboarding program, (2) use and adoption of the services, and (3) the overall satisfaction from the research community.