149

Leadership Development for Women in Academic Medicine: Impact of Leader Self-Efficacy Change and Sustainability Over Time

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OBJECTIVES/GOALS: Our objective was to evaluate the FLEX Leadership Development Program for School of Medicine Women Faculty affiliated with 4 independent hospital systems throughout Northern Ohio to determine whether women faculty develop leader self and means efficacy. We also examined whether self-efficacy is sustained over time following program completion. METHODS/STUDY POPULATION: We did a prospective multiple cohort study to determine whether FLEX Program graduates develop and sustain leader self and means efficacy as measured by the Leader Efficacy Questionnaire (LEQ) (Hannah & Avolio, 2012). The LEQ assesses both leader confidence in their capabilities (self-efficacy) and the availability of sufficient external resources (means efficacy) to achieve their goals. We surveyed participants from 5 FLEX cohorts (2017-2021) using a pre-, post-, and 1-year follow-up LEQ, which allowed each participant to act as their own control subject, pre-test, and experimental post-test. The follow-up tested whether the change from pre- to post-test was sustained over time. The comparison group was non-participant women faculty from the same institutions over a similar 2-year period. RESULTS/ANTICIPATED RESULTS: Diverse FLEX graduates from 5 different cohorts showed highly significant increases in pre- to post-program leader self-efficacy which were sustained up to one year after program completion. Overall leader efficacy as well as its three component sub-constructs (action-, means- and self-regulation- efficacy) all significantly increased equally, suggesting both that the FLEX program had robust effects on its participants, and all aspects of leader efficacy improved. We observed a mildly significant decrease at 1-year follow-up in the overall LEQ, which appeared to be driven entirely by the leader means efficacy. The large comparison group of women faculty did not show any significant changes in leader self-efficacy over a comparable 2-year period. DISCUSSION/SIGNIFICANCE: FLEX confers sustainable gains in leader self-efficacy. Post-program self-efficacy decreases are driven by the leader means efficacy which measures how work environments affect their leadership. This suggests that institutions must take responsibility for making structural changes to improve the working environment for women leaders.

150

Envisioning a Multi-Site Translational Studio to Promote Scientific Integrity and Ethical Innovation

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OBJECTIVES/GOALS: The goal of this study is to develop a multi-centered Translational Studio model that can help in the development of quality translational studies using resources from four different institutional partners (University of Texas Medical Branch, Texas Southern University, University of Houston Clear Lake and Houston Methodist). METHODS/STUDY POPULATION: We conducted two rounds of four Futures Workshops for a total participation of 28 stakeholders from four different partners. Future Workshops were used to critique, envision, and articulate novel "futures" that can be achieved at least partly through design practices (Muller, 2002). In the first round of workshops, we asked participants about their institutions' strengths, weaknesses, resources and investigator needs regarding the Studio. In the second round we asked about different studio models, pros and cons of each model and guiding principles for a studio. Alongside a pragmatic content analysis, multi-stage deductive and inductive qualitative analyses were used to understand people's views on the future of a multi-institutional Clinical Trials Studio. RESULTS/ANTICIPATED RESULTS: The first-round workshops' analysis described peoples' goals for what the studio should be. The future desired studio was described as guide, matchmaker, initiator and advocate. The second-round workshops' analysis discussed the pros and cons of a variety of possible models including, centralized, decentralized, and topic-specific (and allowed other suggestions) while also describing principles for the guidance of a studio. Here the analysis showed people wanted certain characteristics for the studio (i.e. effective, efficient, locally-responsive, consistent, etc.). They also prescribed four principles that a studio should be guided by: non-hierarchical partnership, user-centeredness, respect/collegiality, and sharing. DISCUSSION/SIGNIFICANCE: The future workshops were useful in developing a shared multi-institutional Clinical Trials Studio model that is planned to be deployed in 2025. Participants valued a studio that was both directly supportive to participants and played a role in creating or advocating for institutional resources and policy for research.

151

History of Clinical Research Professionals at Cincinnati Children's

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OBJECTIVES/GOALS: The Clinical Research Professionals (CRP) group was founded in 2000 by research managers at Cincinnati Children's Hospital Medical Center (CCHMC) as an avenue to share research processes, ideas, successes, and community. The group has developed and evolved at CCHMC to meet the needs of CRP members. METHODS/STUDY POPULATION: CRP has evolved to meet the needs of the clinical research community at CCHMC. In 2008, monthly education meetings and a Research Educator supported a standardized onboarding process. CRP hosted the inaugural CRP Appreciation Day in 2010 to recognize researchers. The group established the CRP Leadership Committee (CRPLC) in 2011 and by 2016 expanded to include subcommittees. Career development opportunities include onsite clinical research certification exams and a centralized process for advancement. CRP updated processes and onboarding materials to electronic formats during the pandemic and now includes nursing, data management, and University of Cincinnati representation on the CRPLC. RESULTS/

ANTICIPATED RESULTS: The culmination of 20+ years of CRP has led to the current state of CRP at CCHMC. CRP operates an internal website to collate all activities and resources, including educational opportunities and helpful links related to CCHMC research processes. CRP currently has leadership, membership, education, and regulatory committees providing opportunities for all clinical research professionals to join, collaborate, and grow within CCHMC and beyond. Established career pathways and centralized CRP advancement guidelines support career development. The centralized REDCap onboarding tool is accessible at any time for initial onboarding and then continuing education. DISCUSSION/SIGNIFICANCE: The formation and evolution of CRP, developed by work of past CRPs, has fostered an innovative community to meet clinical research needs through education, career development, and process standardization. We aim to continue to disseminate knowledge and lessons learned beyond our institutional walls.

152

Building the Future of Dissemination and Implementation (D&I) Science at Frontiers CTSI: Capacity Building, Infrastructure, and Emerging Research Areas

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OBJECTIVES/GOALS: A diverse workforce is an aspiration of CTSIs and embedded in goals to build D&I workforce capacity. However, little research describes the diversity of the current workforce. We assessed current assets, opportunities, and diversity of D&I efforts at Frontiers and characterized investigators and those supported by services offered. METHODS/STUDY POPULATION: In January 2021, Frontiers convened a working group to identify existing D&I assets and needs in the CTSI multi-state catchment area. The committee catalogued existing training and consultation resources and services, which the CTSI supported with infrastructure to support, track, and evaluate ongoing efforts. We obtained data from the evaluation platform and conducted descriptive analyses of the investigators and service uptake among two programs offered, contrasting the workforce with national data obtained from the American Academy of Medical Colleges (2022) and the National Institutes of Health (2018). RESULTS/ANTICIPATED RESULTS: Ninety individuals at 9 institutions across Kansas and Missouri identified as implementation researchers. Since 2022, 28 D&I consultations were provided, 92% for grant applications. Five early-stage investigators were identified for career development in an NIH-supported Health Equity and Implementation Center (ESI). The network mirrors the larger workforce regarding underrepresented racial/ethnic minorities (18%) and new investigators (60%). More women (76%) are represented in the D&I network and among ESIs (80%) than the academic workforce (44%), but significantly fewer women used consultation services ($p<0.001$). Lower proportions of underrepresented minority investigators ($p<0.001$) and investigators from disadvantaged statuses ($p=0.027$) accessed consultations services. DISCUSSION/SIGNIFICANCE: Investigators underrepresented in science on multiple dimensions were less likely to use consulting services, Outreach for consultation services may be necessary, if needs are not being met in other programs. Further exploration of overall D&I workforce trends is needed to ensure goals for the field and the CTSA network are achieved.

153

Impact of the COVID-19 Pandemic on CTSA Training and Career Development

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OBJECTIVES/GOALS: Immediate negative impact of the COVID pandemic on CTSA T trainees and K scholars was reported in 2020 to be lack of access to research facilities, clinics, human subjects, and team members, and a need for homeschooling. In this study we examined in more detail the perceived impact of the COVID pandemic on training and career development three years later. METHODS/STUDY POPULATION: CTSA T trainees and K scholars were surveyed in May-June 2023 to assess the impact of the COVID-19 pandemic on training and career development. Data were included from 309 T trainees and K scholars appointed in 2018-2023 at 50 institutions, with good representation from states that were heavily impacted by COVID. Respondents included 76 past and 64 current T trainees, and 56 past and 113 current K scholars. There were no significant differences in race, ethnicity, or gender between T and K respondents. Significantly more K scholars reported both being married or in a committed relationship, and having children. Survey items included the same questions asked in the 2020 survey, plus additional new questions. Results compare impact for T trainees and K scholars. RESULTS/ANTICIPATED RESULTS: K scholars were more negatively impacted for access to clinic/human subjects, home environment, child care, access to staff, increased clinical responsibilities, and other hospital service. T trainees and K scholars reported higher positive impact than in 2020, for having more time to think/write and develop new research ideas. About 2/3 of respondents reported returning to research full-time by April 2021, and the remaining by August 2021. Lasting changes in career progression or research direction were reported as both positive and negative (48%), negative (25%), or positive (10%). Most (2/3) respondents in faculty positions reported that a time extension was available for promotion and/or tenure. Additional in-depth analysis will be presented, based on qualitative analysis of open-ended questions. DISCUSSION/SIGNIFICANCE: Despite research shutdowns in response to the COVID-19 pandemic that lasted for about a year, CTSA T trainees and K scholars were remarkably resilient. They were able to continue some research activities and professional development activities, and developed strategies to maintain productivity and minimize impact on their training duration.

154

Leveraging Implementation Science Competencies to Establish a D&I Science Core

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OBJECTIVES/GOALS: Clinical and Translational Science Award (CTSA) hubs are launching D&I Science cores to provide resources