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SELF-EFFICACY OF HISPANIC WOMEN IN STEMM: A MIXED STUDY

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OBJECTIVES/GOALS: Previous literature has suggested that the lack of participation of minorities and women in the science field affects research centers' quality and competitiveness. This study assessed perceived self-efficacy, obstacles and factors that influenced the development of Hispanic women in a STEMM career. **METHODS/STUDY POPULATION:** This project followed a mixed-method approach with a convergent design. It included two simultaneous phases: an electronic survey as the quantitative phase and semi-structured interviews as the qualitative phase. Data was collected from an academic-research institution in Puerto Rico. A total of 71 questionnaires were collected applying the Baessler & Schwarzer General Self-efficacy Scale. Five women were interviewed using a semi-structure questionnaire. These women hold a tenure-track faculty position, have held a leadership position, had more than ten publications in peer-reviewed journals, and have received grants for research projects. The data was analyzed by triangulation. **RESULTS/ANTICIPATED RESULTS:** The General Self-efficacy scale sum scores ranged from 26 to 40 and a mean score of 34.25 (SD=3.79). Items where all answered the higher score stated, 'Thanks to my qualities and resources I can overcome unforeseen situations' and 'I can solve most problems if I put in the necessary effort.' Age was the only variable showing statistically significant relationship with general self-efficacy. The most relevant factor facilitating the development in STEMM fields' careers was the family support. Other contributing factors were the opportunities of employment, positions, professional development, financial status, early experiences during middle and high school, and good mentors, among others. **DISCUSSION/SIGNIFICANCE:** Results identified some contributing factors and barriers for Hispanic women's career development in STEMM. Strategies must be implemented as early as middle school for girls showing interest in this field and should include administrative resources to support the career development of women.

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Shut Up & Write! to Build Writing Self-Efficacy and Self-Regulation in Early-Career Researchers

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OBJECTIVES/GOALS: Writing self-efficacy & self-regulation are tied to publication & grant submission" writers high in these traits are more productive. We investigated if participating in Shut Up & Write! would produce statistically significant gains in self-efficacy & self-regulation when comparing pre/post surveys. **METHODS/STUDY POPULATION:** 47 US med students, TL1/KL2, & early-career faculty expressed interest in participating. We conducted a 12-week, 1 hr/week Shut Up & Write!-style (SUAW) activity, held on Zoom, and measured the effect using a pre-post survey adapted from the Writer Self-Perception Scale. Matched pairs t-tests

($I^2=0.05$) to test for significant differences between pre- and post-test means were conducted on 3 subscales. The 3 subscales reflected writing attitudes (self-efficacy), writing strategies (self-regulation), and avoiding writing distractions (self-regulation). Subscales showed acceptable internal consistency with Cronbach's alphas of 0.80, 0.71, and 0.72. **RESULTS/ANTICIPATED RESULTS:** 24/37 (65%) completed pre-post surveys. 81% presented as female. 60% were NIH-defined URB and/or were from MSIs. 60% previously participated in an activity similar to SUAW. Sum scale statistics for those who previously participated were significant for the self-efficacy subscale ($p=0.020$) and writing strategies subscale ($p=0.041$). Sum scale statistics for those who had not previously participated were significant for the writing strategies subscale ($p=0.002$). We saw no difference in the avoiding writing distractions subscale. 80% were very satisfied/satisfied with SUAW ('I really loved these sessions' they helped me to identify a writing goal that could actually be accomplished in an hour.) **DISCUSSION/SIGNIFICANCE:** We found significant differences in self-efficacy & self-regulation, building upon findings from a 2021 pilot, and providing evidence that regular participation in an activity like SUAW produces increased self-efficacy and self-regulation and may increase manuscript and grant-writing productivity

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Stay Interviews: Guiding Meaningful Conversations for Retention of High-Quality CRPs

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OBJECTIVES/GOALS: Clinical Research Professional (CRP) shortages and high turnover rates directly impact the conduct of studies. A strategy for improving CRP retention is using Stay Interviews (SI), which are intentional exchanges between CRPs and leadership to enhance transparency and trust. Importantly, SIs are entirely separate from performance evaluations. **METHODS/STUDY POPULATION:** Representatives from seven academic medical centers formed a collaborative workgroup (WG) as part of the Association for Clinical and Translational Science (ACTS) Clinical Research Professionals Taskforce (CRPT) Special Interest Group (SIG). The purpose of this workgroup was to develop a Stay Interview (SI) toolkit that will empower leadership to retain high quality staff by engaging employees in open and responsive conversations about motivations to stay in their current roles. Tools previously used by collaborating institutions were evaluated and aligned to establish a sharable guide for SI best practices. Training resources to support leaders in effectively using SI tools were also developed to accompany the toolkit. **RESULTS/ANTICIPATED RESULTS:** Discussions of current tool use among group members highlighted 2 categorical use cases: continuous integration to promote workforce engagement and retention; and targeted use to address acute workforce challenges. The WG identified the need for a standardized conversation guide as well as leadership tools to support effective use of the guide. From the examples collated, the group crafted a 14

question SI guide with additional probing questions that can be tailored to the work environment. Questions fell into 4 key themes: likes/dislikes, motivations, workplace influence on work life, and professional development barriers and opportunities. Anecdotally, SI use in other industries suggests that wide adoption is likely to reduce CRP workforce turnover and improve job satisfaction. DISCUSSION/SIGNIFICANCE: SIs are designed to build trust and strengthen relationships, fostering positive change by acknowledging issues, understanding motivations, and increasing engagement. Leaders can make immediate actions: clearing obstacles, providing new resources, and increasing recognition. Our next step is implementing a pilot to gather workforce metrics.

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The Clinical Research Internship Portal (CRISP): Creating a mechanism for the onboarding and placement of clinical research interns in the Duke University School of Medicine

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OBJECTIVES/GOALS: To address investigator frustration and appropriate oversight for student interns performing clinical research activities, we created infrastructure to support matchmaking with clinical research teams and onboarding of student interns, thereby allowing for more meaningful internship experiences with access to clinical research systems. METHODS/STUDY POPULATION: Internship requests may be initiated by a student, an affiliated institution, or an investigator. Requests are triaged accordingly. Affiliation agreements define the parameters for these placements. Unaffiliated institutions may request an agreement by contacting CRISP; otherwise, unaffiliated interns will be classified as visiting scholars with restricted access. If a student is from an affiliated institution, the Clinical Research Internship Portal (CRISP) is used to collect and track information regarding the internship. CRISP provides: Matchmaking for student interns with placements Compilation of onboarding documentation Tools (e.g., learning agreements) for student intern supervisors Professional development workshop series for all student interns RESULTS/ANTICIPATED RESULTS: Launched in 2021, CRISP is a relative newcomer to the Duke research training landscape, but preliminary impact may be measured by the following metrics: Affiliated institutions: 8 agreements in place, 4 pending 25 student interns from 7 institutions placed across 11 departments/institutes 7-session professional development series garnering positive feedback from interns and supervisors Improved access to clinical and research systems aligned with clinical research activities Enhanced oversight and tracking of student interns across Duke enterprise Expansion of program to include internal and external student interns CRISP has engaged invested parties within and outside of Duke to ensure robust oversight of these valuable training opportunities and to create new pathways into our workforce. DISCUSSION/SIGNIFICANCE: Streamlining intern placements has lessened pain points related to including students in our research environment, both for investigators and institutional partners. Future plans include expanding the number

of affiliation agreements, creating an interface to quickly triage intern requests, and scaling up the professional development series.

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The long-term impact of a practice-oriented research training program for clinical and translational research staff and clinicians: Evaluating workforce development outcomes over time and professional careers.

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OBJECTIVES/GOALS: There are few training programs for health research staff and clinicians like The Practice-Oriented Research Training program, that include opportunities to conduct funded clinical and translational research. The goal of this study is to evaluate the long-term impact of this program on participants professional development and advancement. METHODS/STUDY POPULATION: The Practice-Oriented Research Training program for health research staff and clinicians was operated by the Michigan Institute for Clinical and Health Research from 2008 through 2018. Participants received training and formed teams that received financial support to conduct a clinical or translational study with a faculty mentor. Eleven cohorts comprising 111 individuals participated. The long-term impact of the program was evaluated using sequential mixed methods. All participants were invited to evaluate the program via an online survey in 2021. Respondents were invited to participate in interviews in 2022. Secondary records of the participants' publications, grants, and professional advancement were collected. RESULTS/ANTICIPATED RESULTS: 68 participants in the PORT program published 345 papers in peer-reviewed scientific journals following the program, averaging over 5 publications per participant. These publications have been cited over 4000 times with an average of over 13 citations per paper. Large proportion of program participants have continued contributing to health research; the vast majority of program participation chose to continue at the University of Michigan. Survey results indicate participants' belief that the program had wide-ranging and enduring impacts on key aspects of their careers, including their application of research to practice. Interviews confirmed that the program helped many participants make substantial advancement in their careers. DISCUSSION/SIGNIFICANCE: Training programs for health research staff and clinicians can have a substantial and enduring impact on their professional development and advancement. The need for programs like PORT will increase as the health research workforce grows. These results inform recommendations for translational scientists.

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The Research Coordinator Support Services (RCSS) and Coordinator Apprentice Program (CAP) at Johns Hopkins University (JHU)

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OBJECTIVES/GOALS: METHODS/STUDY POPULATION: The duration of the apprenticeship program is 2 years, with