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New initiatives for fostering research leadership and mentoring skills in an academic learning health system

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OBJECTIVES/GOALS: To enhance collaboration, communication, and research professional development in a newly aligned academic learning health system by implementing two innovative training programs – Leadership in Focus and Research Mentor Academy – that build leadership and mentoring capacity across the research workforce. **METHODS/STUDY POPULATION:** To elevate and support research leadership and mentoring development across a large, multi-state academic health system, we launched two complementary programs. Leadership in Focus is a monthly virtual series featuring interviews with enterprise leaders, offering insights into leadership, strategy, and team science. Mentor Academy is a 10-week virtual course that provides formal training through skill-building, discussions, and guest speakers. Aligned with national best practices, it emphasizes communication and mentee-focused career development across the translational spectrum. **RESULTS/ANTICIPATED RESULTS:** Both programs have shown early success in increasing engagement, awareness, and leadership competency. Leadership in Focus has drawn growing attendance from researchers, staff, and clinicians, fueling internal networking opportunities. The Research Mentor Academy participants bring strong representation from across departments and campuses. Participant feedback indicates improved confidence in mentoring, greater clarity in career advancement strategies, and expanded professional networks. These initiatives are creating new entry points for leadership development across the research enterprise, contributing to a stronger, more connected learning health system. **DISCUSSION/SIGNIFICANCE OF IMPACT:** Through strong leadership and mentoring training, these programs strengthen collaboration and skill development of the translational research workforce. The success of these programs fosters a culture of learning and emphasizes the value of professional growth in an academic learning health system.

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Clinician needs assessment: Translating barriers to caring for women with hypermobile Ehlers-Danlos syndrome and endometriosis into tailored educational resources

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OBJECTIVES/GOALS: Hypermobile Ehlers-Danlos syndrome (hEDS) and endometriosis are under-diagnosed conditions that are not well understood by many clinicians. This study aims to increase provider readiness to diagnose and treat women with these conditions by identifying clinicians' perceived gaps in knowledge and preferred educational resources and modalities. **METHODS/STUDY POPULATION:** A national survey of clinicians (N = 121)

was created in the Qualtrics survey-building platform, with recruitment taking place via the Prolific online research platform from 09/04/25 to 10/02/25. Clinicians responded to a series of established, closed-ended measures assessing their educational experiences regarding hEDS and endometriosis, comfort with diagnosing and managing the care of women with these two conditions, perceived barriers to diagnosis and care management, and preferred educational/training modalities for enhancing their understanding of these conditions. To be eligible for participation, respondents had to self-report that they were a) clinicians, b) at least 18 years of age, and c) working in the US healthcare sector. Descriptive statistics were performed on all variables of interest. **RESULTS/ANTICIPATED RESULTS:** Clinicians first heard about hEDS from medical texts (60%) and patients (15%), and endometriosis from medical texts (50%) and personal relationships (including own diagnosis; 33%). A substantial proportion of clinicians reported being not at all comfortable understanding diagnostic criteria (hEDS 36%, endo 17%), diagnosing patients (hEDS 46%, endo 30%), or making plans of care (hEDS 42%, endo 17%). Top barriers included lack of knowledge, confidence, and mentoring. Respondents identified Online activities and Internet Point-of-Care as the most desirable CME resources, and Evidence-Based Medicine and Case-Based Learning as the most desirable learning modalities. Online learning offered flexible timing and self-paced modules, whereas in-person learning offered interaction with experts and peers. **DISCUSSION/SIGNIFICANCE OF IMPACT:** This project recognizes the dearth of resources on hEDS and endometriosis available to clinicians and fills that gap by soliciting feedback directly from clinicians on their educational needs. Results will be translated into two prototypes of specialized educational interventions tailored to clinicians' desired resources and methods of learning.

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Training clinical research staff professionals to RISE and lead

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OBJECTIVES/GOALS: We developed and implemented a leadership training course tailored for clinical research teams, focusing on emotional intelligence, strategic thinking, communication, and project management to enhance knowledge and maximize team performance. **METHODS/STUDY POPULATION:** An informal, multi-institution survey and literature review revealed a lack of leadership training tailored to clinical research staff professionals (CRPs). In response, we developed RISE (Relate | Inspire | Strategize | Elevate), a 9-week immersive program led by subject matter experts. Sessions focused on four key themes: 1) Leadership Fundamentals, 2) Interpersonal Effectiveness, 3) Trust Building, and 4) Building a Community of Practice. Designed for experienced CRPs, cohorts were limited to 30 participants to foster engagement, peer learning,

and long-term professional growth. **RESULTS/ANTICIPATED RESULTS:** The inaugural RISE cohort included 28 experienced CRPs with expertise in areas such as regulatory knowledge, data management, study coordination, and award administration. Pre-/post-assessments showed a 16% (mean; range 8-20%) knowledge gain in leadership domains including team management, communication, vision setting, motivation, resilience, and decision-making. The strongest areas of understanding ($\geq 95\%$) were empathy, near-peer mentoring, and translational scientist traits. Participants rated the course ~90% for helpfulness, relevance, and actionability, with a net promoter score of 93%. Valued elements included DISC assessments, networking, and elective readings. **DISCUSSION/SIGNIFICANCE OF IMPACT:** CRPs are vital to clinical research leadership. RISE delivers tailored training in leadership best practices for this group. In response to strong demand, the curriculum is being refined and efforts are underway to expand access across the region.

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Mentor training for research professionals: An overview of curriculum development and beta testing outcomes

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OBJECTIVES/GOALS: This poster provides an overview of a new curriculum, "Entering Mentoring for Research Professionals," that is designed for research professional mentors who provide research support. The presentation will highlight the curriculum adaptation process and evaluation results from beta testing. **METHODS/STUDY POPULATION:** The new curriculum was adapted from the Entering Mentoring base curriculum with support from the National Organization of Research Development Professionals in collaboration with the Center for the Improvement of Mentored Experiences in Research. Modules and activities were revised for use with research professionals (RP) across career stages and research areas. The adapted curriculum was beta tested with RP mentors at several sites, including CTSA and CTR hubs, and ISCORE-RC. Evaluation surveys were administered to mentors immediately following the training. Surveys were also administered to facilitators to collect information on their experience implementing the new curriculum. **RESULTS/ANTICIPATED RESULTS:** The anticipated results of this project include beta test data from 40 participants and their facilitators across four implementation sites. Key outcomes include data on how well the newly adapted curriculum aligns with the intended audience and participant workshop satisfaction. Data on workshop impact, including intended behavioral changes, will also be reported, along with recommendations for curricular modifications. Data from facilitators of the training will also be shared. **DISCUSSION/SIGNIFICANCE OF IMPACT:** RPs, who primarily operationalize research studies aimed at improving human health, play a critical role in the translational science workforce. This curriculum is designed specifically for this group and helps promote mentorship excellence across the

academic enterprise. The curriculum will be disseminated widely after beta testing.

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Building a peer-reviewed resource collection for team science digital badges: A work in progress

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OBJECTIVES/GOALS: The team science professional digital badge initiative aims to build a high-quality, expert-reviewed collection of team science education and training resources that are aligned with key clinical and translational science competencies and integrated with a microcredential from the Association for Clinical and Translational Sciences (CTS). **METHODS/STUDY POPULATION:** We are initiating a structured process to solicit TS education and training resources from diverse stakeholders in the fields of Team Science (TS), Interdisciplinary Collaboration, and CTS. Using the Team Science Toolkitting Model, resources will be reviewed for alignment with the five domains of CTS competencies (facilitating team affect, communication, research management, collaborative problem-solving, and leadership). The ITD Alliance toolkit inventory will serve as a model for comprehensive coverage and interoperability. Approaches to remove roadblocks to knowledge integration will be prioritized, including epistemic inclusivity, boundary spanning, and shared mental models, for resource selection and peer review. **RESULTS/ANTICIPATED RESULTS:** We anticipate assembling a curated collection of resources spanning all CTS competency domains, with explicit mapping to individual and team competencies. Peer review of resources will ensure quality, relevance, and adaptability for digital badge requirements. By linking these resources to a digital badge credential, learners will be able to demonstrate applied skills in interdisciplinary collaboration. The process aims to reinforce best practices for curation of team science education and training, maintenance, and scholarship and develop strategies for overcoming conceptual and methodological barriers to knowledge integration in translational teams. Results will be reported at the conference. **DISCUSSION/SIGNIFICANCE OF IMPACT:** This ongoing project will advance team science education through competency-based training, cross-disciplinary collaboration, and integrated knowledge. It will develop a training resource collection and showcase a reproducible model for strengthening the field and profession of team science.

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From bench to breakthrough: The bench tutorials program for high schoolers

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