

(12) PiP research teams showcase diversity in research areas with representation from Nursing, Occupational Therapy, Cancer, Cell Biology, Microbiology, Anatomy and Medical Images, Electro-Chemistry, Anatomy, and Physiology. In addition, Pip's team members represent eleven (11) different institutions across seven different geographical areas, whose complete profiles we delineate in the presentation. Teams have the participation of twelve (12) primary researchers, five (5) mentors, twelve (12) UG, seventeen (17) UGs, four (4) medical students in different stages, and nine (9) GS. We will present the composition, research topics, development, and participants' feedback. **DISCUSSION/SIGNIFICANCE:** The PiP program has been instrumental in organizing interdisciplinary and interinstitutional research teams. It has proven to be an effective strategy for fostering inclusion, diversity, and equity in CTR and promotes the practice of team science. Teams' research responds to health issues in this Hispanic population.

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### Team Science Training Needs and Preferences for Clinical Research Professionals: A Mixed Methods Needs Assessment

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**OBJECTIVES/GOALS:** To comprehensively understand the training needs of clinical research professionals (CRPs) employed across various roles in team science. The purpose is to identify areas for competency development and determine the modality of training desired to enhance their skills further. **METHODS/STUDY POPULATION:** This study targets Clinical Research Professionals (CRPs) across various roles in Academic Health Centers via an online survey. From novices to experts, participants are often trained on the job covering some clinical research competencies, but team science aspects like communication and leadership are usually overlooked. The survey will assess current skills, identify training gaps, and explore preferred learning methods and topics. Participants will be recruited through the CTSA hub research network. Additionally, they'll share experiences of team cohesion, dynamics, conflict, and their contributions to the team through participation in focus group sessions. The focus groups will be held via Zoom with volunteer participants from the survey (6 per session, 3 sessions, N=18). **RESULTS/ANTICIPATED RESULTS:** The recently developed leveled CRP team science competencies based on Lotrechiano (2022) will be the basis of the survey items. Demographic characteristics of the participants by role will be presented. Moreover, perceptions of team science applications, learning needs and training preferences will be described. Results will be compared across CRP roles. Finally, three recorded and transcribed focus groups (n=18) will contribute to knowledge gained through this research allowing for a deeper understanding of training needs. Qualitative analyzes of recorded focus-group discussions will present key themes. Qualitative data will be coded by more than two people for interrater reliability. **DISCUSSION/SIGNIFICANCE:** This study offers the first needs assessment on academic medical center CRP team science learning requirements, utilizing newly established CRP individual and team competencies. Findings will guide the creation of tailored training and research initiatives.

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### Validation of the Mentoring Competency Assessment to evaluate the mentorship skills and competencies of mentees

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**OBJECTIVES/GOALS:** The purpose of this study was to assess if the Mentoring Competency Assessment (MCA) could be used to capture mentee gains in mentorship skills and how the mentorship competencies may vary structurally for mentees compared to mentors, while the original MCA was shown to be a validated measure to assess mentor skills. **METHODS/STUDY POPULATION:** The mentee training survey data were collected nationally from 2015 to 2022. The survey data set included 401 respondents who consented to participate after 59 mentee training events hosted by 34 institutions/organizations who participated in face-to-face and online training as well as completed the Mentoring Competency Assessment (MCA) in their surveys. We conducted principal component analysis (PCA) with varimax rotation to investigate the internal structure of the MCA and Hatcher's criteria were applied. After a team of mentoring experts independently interpreted the PCA results and reached a consensus on the interpretations of the components, factor analysis and internal consistency reliability analysis were applied to assess the construct validity and the reliability. **RESULTS/ANTICIPATED RESULTS:** There were significant component loadings of the eight components with varimax rotation and 22 of the total 26 items were loaded into components. Four items, (5) pursuing strategies to improve communication, (6) coordinating with other mentors, (11) developing strategies to meet goals, and (23) setting career goals, were excluded from the factor analysis and Cronbach's alpha analysis since these items were not significantly loaded into any components. The eight-component structure was validated ( $\chi^2=313.209$ ,  $p<.001$ , RMSEA=.083, CFI=.907, TLI=.881, SRMR=.073) and the hypothesized model of the eight components resulted in an acceptable fit to the data with standardized factor loadings ranging from 0.58 to 0.93. The alpha coefficient is from 0.58 to 0.90, suggesting the items have high internal consistency. **DISCUSSION/SIGNIFICANCE:** Based upon the findings we recommend that the full revised MCA for mentees is used to capture mentees' mentorship skill gains even if not all of the competency modules are used in the training. The development and validation of measures such as the MCA are important as we move toward the use of common measures across programs such as the CTSA.

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### Training & Sustaining: Training and learning collaborative outcomes across a statewide network for early diagnosis of children with autism

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**OBJECTIVES/GOALS:** Community-based primary care autism diagnostic models are one promising solution to delays in autism diagnosis. Our objective is to describe the development and report on outcomes related to primary care professional (PCP) training and sustained engagement in a longitudinal learning collaborative

across a statewide network for autism diagnosis. **METHODS/STUDY POPULATION:** We developed ADAPT (i.e., Accelerating the Diagnosis of Autism with Primary care Training), a training program to prepare PCPs to develop independent competency in evaluation of autism in children ages 14-48 months. ADAPT includes didactic and case-based modules and expert practice-based coaching delivered by a diagnostic specialist; following training PCPs participate in a longitudinal learning collaborative. Aligned with competency-based medical education standards, measures of autism evaluation knowledge and diagnostic competency are collected. **RESULTS/ANTICIPATED RESULTS:** To date, 13 PCPs have completed ADAPT didactic and practicum training reaching competency in independent autism evaluation. Clinicians demonstrated significant improvement in total autism knowledge following didactic training ( $p=.02$ ). There was an overall trend toward increased scoring agreement on an autism observational assessment over case observations and practicum evaluations. Similarly, PCPs demonstrated improved evaluation competence, moving on average from Advanced Beginner to Competent Performer as rated by expert trainers. Following training, PCPs attended 57% of monthly learning collaborative sessions. **DISCUSSION/SIGNIFICANCE:** Training PCPs to deliver autism evaluations as part of community-based models of care is a promising solution to address access and waitlist challenges. ADAPT is an intensive, standard PCP training model which results in achievement of independent competency and sustained engagement in in autism evaluation.

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#### **UCSF TIPR: Expanding scholarly training opportunities for community-based residency programs.**

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**OBJECTIVES/GOALS:** Community-based residency programs often lack formal training in research scholarship required by ACGME. To address this need, UCSF's CTSI collaborated with residency leaders to implement a self-paced online curriculum for residents called Training in Practice Based Research (TIPR). We describe characteristics of the initial trainee cohort. **METHODS/STUDY POPULATION:** In the 2022-23 academic year, TIPR was offered to 10 UCSF-affiliated family medicine residency programs across Northern California and the Central Valley, and 8 chose to participate. An additional community-based psychiatry residency independently contacted our team and was also granted permission to participate. We conducted baseline surveys with participants to understand their prior research experience and motivation to join TIPR. Descriptive data for demographics of trainees and their prior research experience were collected using Qualtrics. Thematic analyses were conducted on qualitative responses. **RESULTS/ANTICIPATED RESULTS:** Of 32 participants, 29 completed the survey (91%). Learners identified as 40% non-Hispanic White, 28% Asian, 16% Hispanic, 9% non-Hispanic Black, and 15% non-Hispanic other. 28% were motivated to participate in the program because it was a residency requirement, 31% wanted to improve their scholarly skills and confidence, 16% were interested in career development, and 6% were interested in networking. 19% reported no research experience. Participants are currently working on scholarly

projects designed during the first year of TIPR. In 2023-2024, with the addition of two new family medicine residency programs, an additional 40 residents have enrolled in TIPR. In April 2024, we will present data on projects completed, and demographics of the full cohort. **DISCUSSION/SIGNIFICANCE:** With CTSI support, TIPR has reached a large cohort of ethnically diverse physician trainees in community-based settings. Future evaluation will focus on whether TIPR increases the quantity and quality of practice-based research within residency training programs served by this program.

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#### **Enhancing team science education and training through discussions, examples and vignettes tailored to Clinical Research Professionals (CRPs)**

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**OBJECTIVES/GOALS:** To describe team science training that can be tailored to specific audiences, in this case, Clinical Research Professionals (CRP) using discipline-specific vignettes, and to highlight the benefits of audience-specific training in team science. **METHODS/STUDY POPULATION:** Translational science teams are comprised of members from various disciplines. All members can benefit from team science training. Our education team has incorporated discipline-specific training into educational offerings. This project focuses on education tailored to CRPs and their role in clinical research. Historically, team science training has been focused on faculty and trainees. The exclusion of CRPs can limit the impact of this training. We've created workshops specifically geared toward CRPs. This presentation demonstrates how we tailor team science training to CRPs by using relevant examples and real-world vignettes to highlight concepts. **RESULTS/ANTICIPATED RESULTS:** The team science workshops conducted specifically for CRPs have been well received. CRPs have been eager to engage with team science-related material. The number of team science workshops requested by CRP groups is continuing to increase. We will share both quantitative and qualitative evaluation results from several team science workshops conducted to-date. The inclusion of scenarios that relate to common situations encountered by CRPs has been especially helpful in demonstrating team science concepts they have personally experienced. **DISCUSSION/SIGNIFICANCE:** Helping CRPs directly apply team science concepts to their work is very valuable for improving high-functioning team behavior. CRPs can use new knowledge and skills to enhance efficiency and reduce stress and burnout. The impact of team science is maximized when all members of the team are trained.

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#### **Incorporating a multi-session case study using team assessment results to highlight team science concepts in a team science graduate course**

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**OBJECTIVES/GOALS:** To describe the creation, use and outcome of a successful multi-session case study for team science education and training. Creating a case study that spans multiple sessions can aid in