

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

emphasizing many team science concepts using one ongoing scenario. **METHODS/STUDY POPULATION:** We will describe the creation and use of a multi-session case study used in a team science graduate course. This case study incorporates the interpretation and use of assessments that coincide with concepts presented in each session. Participants engage with the case study as a team. The use of this case study allows participants to draw conclusions and make decisions about team interventions using concepts they've just learned. The multi-session case study also allows participants to see the outcome of their decisions in the next session. Further, the continuous nature of this case study allows participants to build on their knowledge from session to session and make connections between concepts. **RESULTS/ANTICIPATED RESULTS:** Incorporating a multi-session case study should help participants better understand team science concepts and practice incorporating the use of those concepts into teams in a more realistic way over time. The case study framework has been used in a team science graduate course for the last two years. The teaching team has incorporated continuous improvement into optimizing the case study over time. We'll share preliminary results collected over the use of the case study so far along with the improvements made over time. **DISCUSSION/SIGNIFICANCE:** This education framework is very versatile and can be incorporated into a team science course or series of workshops and provides a real-world situation that allows participants to practice incorporating team science concepts and interventions in a team.

### Creating a state-wide university network for translational science training

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**OBJECTIVES/GOALS:** We have evaluated the primary factors behind successful expansion of the predoctoral TL1 training grant at OHSU to all research-intensive universities in the state, evaluating the precepts that were key to integration. We also evaluate inclusion of social and behavioral sciences in clinical and translational science training. **METHODS/STUDY POPULATION:** OHSU contains three professional schools (medicine, nursing, and dentistry) as well as graduate studies in science. There are also three research-intensive universities in Oregon: Portland State University (PSU); Oregon State University (OSU) in Corvallis; and the University of Oregon (UO). We report evaluation of our 7-year experience with a predoctoral TL1 program and the precepts behind successful implementation of statewide outreach. We have tracked applicants from each university and program, trainee feedback, and success of the applicants as measured by persistence in research, inclusion of translational methods, additional training acquired, and subsequent research funding. We also evaluate participation by behavioral and social scientists. **RESULTS/ANTICIPATED RESULTS:** The predoctoral TL1 has included 40 scholars over 7 years, with 65% PhD graduate students and 35% MD students who pursue an additional research degree (PhD, MCR). Of PhD graduate students, the distribution is similar among universities: OHSU 31%, PSU 19%, OSU 27%, UO 23%. 38% of all graduate student trainees are in behavioral

or social science. Key precepts behind success include: concentration on specific graduate programs at each university; implementing a common curriculum based on the MCR curriculum; interinstitutional mentor teams; leadership team that spans universities; required core TL1 activities; and a competitive application process with an interinstitutional review committee. Applicants are required to identify how translational science education enhances their research career. **DISCUSSION/SIGNIFICANCE:** Creating a state-wide resource for TL1 translational science training has increased opportunities to expand translational research throughout Oregon through providing new opportunities to enhance excellence through disseminating resources and training across the universities.

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### Academic Innovation through the interdisciplinary course Introduction to Clinical and Translational Research (CTR) to increase the number of undergraduate students in Puerto Rico with the knowledge, skills, abilities, and opportunities in CTR

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**OBJECTIVES/GOALS:** To teach the historical development of CTR, make a compelling scientific presentation, and use bibliographic databases and library resources. In addition, students learn how to write the research question, design the career development plan, know the protection of human subjects in research, and understand the mentor-mentee relationship. **METHODS/STUDY POPULATION:** The course includes a variety of educational strategies and activities that allow the student to increase their knowledge and initiate their interest in the field of CTR. Both academic semesters (August to December and January to May) are offered remotely in two-hour synchronous sessions on Fridays from 3:00 p.m. to 5:00 p.m. through videoconferences, in addition to asynchronous activities. Invited expert lecturers and faculty reinforce the course content in each of the topics they address. In addition, course coordinators assign guided tasks where the students perform the work. Then, they present or send their work to the course coordinators for evaluation. **RESULTS/ANTICIPATED RESULTS:** The course began in January 2020 and has six offerings, including one in the current academic semester (August to December 2023). Its first offering was in the semester from January to May, and due to the interest generated in students in August 2022, it is now available in both semesters. From its beginning to the present, the course has included students from the University of Puerto Rico (UPR) Bayamón, Cayey, Humacao, Mayagüez, and Rio Piedras campuses, impacting all geographic areas of Puerto Rico. The course has also represented an opportunity for graduate faculty to teach CTR to undergraduate students. Until 2023, 56 students have enrolled. **DISCUSSION/SIGNIFICANCE:** Upon completing six-course offerings, the evaluation carried out by the students demonstrates satisfaction with the learning obtained. The knowledge and skills achieved have led them to participate in CTR with the mentoring of collaborating course professors and starting a new professional development opportunity for undergraduate students.