

Health, we established a partnership between Penn State CTSI, Project ECHO at Penn State, and Primary Health Network (PHN). PHN is the largest Federally Qualified Health Center in PA, making it uniquely qualified to reach rural providers diagnosing and treating patients impacted by environmental events. Utilizing the ECHO model, we are hosting monthly, 1-hour sessions on environmental determinants of health starting October 2023. Experts in pulmonology, toxicology, atmospheric science, and rural medicine (whom many participants would have limited access to outside of the ECHO platform) and participants have the opportunity to share and learn from their varied experiences exemplifying a culture of 'all teach, all learn'. RESULTS/ANTICIPATED RESULTS: Project ECHO is an ideal model for upscaling workforce quickly, allowing participants to be responsive in the care of their community, regardless of location and access to specialty clinics. 74 participants across 26 PA counties registered for the series, ranging from PCPs, medical directors, and state officials. Upon registration, nearly half of our direct patient-care participants do not routinely conduct an environmental exposure history and almost 70% report receiving questions from their patients related to how the environment might impact their health. More than half of those providers reported feeling unprepared to answer patients' questions related to the environment's impact on their health. Evaluation data will be collected at enrollment, after each session, and post-series. DISCUSSION/SIGNIFICANCE: This series could result in: \* Reduction of health disparities caused by environmental events (no cost, virtual learning) \* Increased preparedness to quickly address health questions/symptoms related to environmental exposures \* Increased awareness of the environmental impacts on health. \* Improved testing/treatment for patients

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### **An educational curriculum, mentors' preparedness and certification, a mentored research experience and a support network: strategies to increase diversity and inclusion in the Clinical and Translational Research (CTR) workforce among underrepresented researchers.**

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OBJECTIVES/GOALS: The Professional Development Core (PDC) of the Hispanic Alliance for Clinical and Translational Research (The Alliance) has implemented a multifaceted program to support Early-Stage Investigators (ESI) and mid-career investigators to increase productivity and achieve success in their research endeavors. METHODS/STUDY POPULATION: Since 2021, PDC launched an educational program tailored for ESI or mid-career investigators, addressing specific gaps in research competencies. A needs assessment survey gathered information from these investigators, and its results served as the foundation for the program's design. In addition, recognizing the need for excellence in mentoring, PDC spearheaded a program to provide a certification curriculum for new or experienced mentors. Experienced researchers were encouraged to participate in the certification process with ample opportunities to discuss their mentoring experiences and the incorporation of new approaches that emphasize diversity and inclusion. A structured mentored research experience with support for protected time for the investigator and the mentors was also implemented. RESULTS/ANTICIPATED

RESULTS: Four investigators and their mentors have received the Mentor-Mentee Award (100% PhD, 75% female, 50% Assistant Professor, 75% ESI, 75% with mentors from the mainland United States). Their program's evaluation will be presented. Thirty-two (32) researchers have participated in the courses in Health Disparity and Scientific Communication. Support for grant writing was offered through a three-pronged approach: a webinar series, a course in Grantsmanship and a grant's bootcamp. Twenty-four (24) mentors were certified, and over 30 training activities were offered to supply knowledge in areas previously identified in the needs assessment. We will present the complete curriculum, courses offerings, participants' profiles, and productivity outcomes. DISCUSSION/SIGNIFICANCE: Alliance educational and mentoring supportive network increased the diversity of CTR workforce and prepared qualified researchers to address the Hispanics health needs. Collaborations with mainland researchers have expanded the PDC program's reach and contributed to the enhancement of the Hispanic contribution to the health research ecosystem.

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### **Insights from a Process Improvement Co-op in the Development of an Informed Consent Professional Certificate (ICPC) Course**

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OBJECTIVES/GOALS: The objectives of the ICPC Course were 1) to define elements needed to 'build' a solid framework for the creation of an effective informed consent document; 2) to examine various regulatory references and their importance in the context of the informed consent process; and 3) to review helpful tips and best practices of the informed consent process. METHODS/STUDY POPULATION: This 7-week course was a multi-disciplinary effort by the Miami CTSI, the Regulatory and Monitoring Support Office and the Human Subjects Research Office (HSRO), as part of their co-op partnership. The CTSI's Network of Clinical Research Professionals (NCRP) (over 1995 members and established to offer and enhance education, training, and overall career development and networking for the U's diverse research workforce) served as the target audience. The lead HSRO official was the course content developer and served as instructor. The Director of the HSRO served as the certificate & program coordinator. Additionally, this course indirectly fulfilled part of the requirements of the Institution's AAHRPP re-accreditation. RESULTS/ANTICIPATED RESULTS: 70 persons attended all sessions and received their certificate. A post-course survey was deployed (n=70). 69 respondents were extremely satisfied with course content; 67 were likely to recommend the course to a colleague. Feedback highlights include: appreciation for time taken to organize/offer the course; presenter knowledge and preparation; and that case studies/examples were up-to-date and applicable. As an added incentive to participate in the course, both the School of Nursing and the Medical School provided CEU credits and the Society of Clinical Research Associates (SOCRA) accepted documentation of candidate participation in continuing education programs for recertification. DISCUSSION/SIGNIFICANCE: Based on a need identified through a multi-disciplinary process, a successful Informed Consent Professional Certificate Course was created and implemented. Respondents indicate extremely high satisfaction with

the course and felt it was very relevant and applicable to their practice.

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### 20 YEARS SHAPING A NEW GENERATION OF HISPANIC CLINICAL AND TRANSLATIONAL RESEARCHERS: UPR-MSC POSTDOCTORAL MASTER IN CLINICAL & TRANSLATIONAL RESEARCH PROGRAM

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**OBJECTIVES/GOALS:** This project presents the Post-doctoral Master of Science in Clinical and Translational Research (MSc) program's outcomes in 20 years of its implementation. This program is a joint offering between the Schools of Health Professions and School of Medicine of the University of Puerto Rico. **METHODS/STUDY POPULATION:** This study consists of secondary data analysis of academic and administrative documents. It also includes data from the Annual Evaluation retreats reports and an Alumni Follow-up Survey using an electronic questionnaire. All 121 Scholars admitted to the program from academic years 2003 to 2023 were included in the sample. Data analysis included descriptive statistical analysis of quantitative data and qualitative content analysis regarding recruitment/admissions, faculty composition, curriculum design, Scholars' outcomes, and program's financial support sources. Quantitative data were analyzed using the statistical software SPSS. **RESULTS/ANTICIPATED RESULTS:** Scholars of the program had been recruited from the UPR-MSC and several partner institutions with diverse backgrounds, disciplines, and research areas. Faculty and committee members have representation from the six MSC-Schools and partner institutions. The academic Program structure has changed over the years, and currently, more than 65% of the courses are offered online. Several financial sources have been identified to support the scholars. The Scholars' portfolios of grant submission and publication productivity evidence the program's success. Graduates have also been successful in advancing to positions that foster research impacting Hispanics. **DISCUSSION/SIGNIFICANCE:** The Post-doctoral Master's in Clinical and Translational Research program (MSc) has contributed to the formation of committed Hispanic clinical and translational researchers impacting minorities and contributing to diversity in the research workforce.

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### Advance RI-K Scholar Career Development Program: A one-year intensive program for developing early career faculty in an IDeA state

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**OBJECTIVES/GOALS:** We developed a state-wide program to support early career faculty in preparing mentored career development

awards, and connect them to resources, mentorship, and career development opportunities. We aimed to build self-efficacy along multiple axes, including research design and grantsmanship, and to facilitate networking with mentors and peers. **METHODS/STUDY POPULATION:** The program recruited four cohorts of faculty over the course of four years, for a total of 32 faculty participants (63% physician scientists). Participants were selected by a Steering Committee, and represented a variety of specialties from 19 departments across Brown University, University of Rhode Island, and affiliated hospitals. Participation required an institutional commitment of 20% minimum protected time to engage in research and a year-long curriculum that included biweekly didactic sessions, project development support, individual consultations, feedback on drafts, and internal study section review. Participants completed pre-, interim-, and final-assessments, which collected measures of self-efficacy, professional development needs, program satisfaction, and formative feedback. **RESULTS/ANTICIPATED RESULTS:** Over the first 3 years, 21 participants completed the program, 43% have received NIH or VA K/CDA awards so far, and 48% received other federal or non-federal awards. Over 25 faculty from across institutions participated in leadership and didactics, with even greater participation on mentorship teams, panels, and grant review. All cohorts showed improvements in measures of self-efficacy in grantsmanship and research and reported high satisfaction with program activities. Participants found individualized proposal feedback and internal study sections to be most valuable, and frequently cited the value of peer-learning opportunities. Challenges for scholars include mentorship challenges, competing priorities/protected time, and various external factors that impacted individual research progress. **DISCUSSION/SIGNIFICANCE:** The program has successfully supported cohorts of junior clinical and translational faculty from across the state in launching their independent research careers. The program may serve as a model for IDeA state inter-institutional collaboration in developing diverse faculty cohorts in the early stages of preparing their career development award.

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### Resident training in research fundamentals using an online, asynchronous course

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**OBJECTIVES/GOALS:** Scholarly activity is a key component of most residency programs. To establish fundamental research skills and fill gaps within training curricula, we developed an online, asynchronous set of modules to introduce trainees to various topics that