

microbiology among others. We will showcase the diversity in research topics and teams composition and their accomplishments. DISCUSSION/SIGNIFICANCE: The Title V Coop has been successful in integrating individuals from academic programs underrepresented in research into interdisciplinary and interprofessional research teams, launching a model for diversity and interdisciplinarity and representation of health professionals at all levels of research.

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### **Investing in Translational Science: Forging Critical Connections with Investment Professionals**

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**OBJECTIVES/GOALS:** Ask the Experts: A Biomedical Innovation Forum, presented by Fast Forward Medical Innovation (FFMI) at the University of Michigan, provided an opportunity to educate biomedical innovators on life science investment trends and technology assessment criteria. **METHODS/STUDY POPULATION:** FFMI, in partnership with the U.S. Economic Development Administration, recruited an expert group of panelists to be featured at this virtual event. These life science investment experts provided insight on the strategy, timing, and best method for innovators to engage investors, the specifics of what investors look for in technologies and project teams, and expectations of investors and project teams after the investment is secured. The panel presentation was followed by a poster presentation highlighting projects from the FFMI Hub at the University of Michigan, allowing innovators to have an open and constructive conversation with experts and attendees. **RESULTS/ANTICIPATED RESULTS:** There was a total of 73 registrants including academic faculty, biomedical innovators, and life science investment professionals from 21 different academic institutions, private companies, and other organizations. 50 attended the panel presentation and poster session. Results (N=5) of an evaluation of the event revealed that 100% of the respondents strongly agreed or agreed that the event met their expectations, while 80% strongly agreed or agreed that they would recommend the event to a colleague. Feedback from poster presenters was also strong with presenters exclaiming they “enjoyed the panel discussion and getting one-on-one time with the panelists,” as well as “a lot of great advice was given by the experts” and “I really liked the poster presentation part in which I got feedback from the investors.” **DISCUSSION/SIGNIFICANCE:** The data demonstrates how accelerating technology mining activities, proactively seeking and strengthening external partnerships with investors, and scaling commercialization education programs can have a positive impact on the development and launch of biomedical innovations.

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### **Visiting Scholars in Times of Pandemic**

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**OBJECTIVES/GOALS:** The Virtual CTSA Visiting Scholars Program allows KL2 scholars to serve as visiting professors at host CTSA consortium institutions. This program facilitates connections with faculty outside scholars home institutions, as well as fostering collaboration among different CTSA hubs. Stanford aimed to incorporate participants into its KL2 program. **METHODS/STUDY POPULATION:** Stanford is one of 57 host institutions for the Virtual CTSA Visiting Scholars Program. The program includes a

virtual meeting between each participant and a chosen faculty at the host institution. Program participants also give a virtual Grand Rounds lecture, open to the entire CTSA consortium. As well as encouraging Spectrum KL2 Scholars to participate in the virtual exchange, the Spectrum KL2 program incorporated the visiting scholars into weekly activities over the course of 3 months. Visiting scholars were invited to participate virtually in KL2 educational sessions, which provide career development training and mentoring. As meetings transitioned to in-person, KL2 scholars were allowed to attend virtually when needed. Hybrid in-person sessions were also conducive to participation by visiting scholars. **RESULTS/ANTICIPATED RESULTS:** Stanfords Spectrum KL2 program was virtual (Zoom) for academic year 2020-2021 and included 1:1 mentoring sessions, weekly career development seminars, and 1:1 peer virtual lunches to integrate the 9 junior faculty scholars. Visiting scholars joined the weekly Zoom meetings when their schedules allowed. KL2 faculty mentored visiting scholars for 3 months, exchanging ideas and forming collaborations. Each visiting participant was paired with a KL2 Scholar, who provided 1:1 peer mentorship. In addition, visiting scholars presented a work-in-progress seminar, to obtain feedback before the more formal Grand Rounds lecture. For academic year 2021-2022, Spectrum KL2 meetings include virtual and hybrid in-person sessions, allowing visiting scholars to join by Zoom during the 3-month virtual exchange program. **DISCUSSION/SIGNIFICANCE:** What set Stanfords Virtual CTSA Visiting Scholars Program apart was faculty engagement and mentorship provided to visiting participants. By incorporating visiting scholars virtually into the ongoing KL2 education program, participants could engage fully with mentors and scholars, even surpassing opportunities of pre-pandemic on-site visits.

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### **Building research knowledge base through training and elective courses in Clinical and Translational Research (CTR) as part of the Title V Cooperative Project (Title V Coop) between the University of Puerto Rico Medical Sciences Campus (UPR-MSC) and the Universidad Central del Caribe (UCC)**

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**OBJECTIVES/GOALS:** Research Education Towards Opportunities (RETO) Mentoring Offering Training Opportunities for Research (MOTOR) 1 – 2 and the elective courses (INTD 5998/ MDCL 101) in CTR of Title V Coop were designed to provide the participants from higher education institution (HEI) in Puerto Rico (PR), interdisciplinary – interprofesional knowledge in CTR. **METHODS/STUDY POPULATION:** Since April 2017, Research Education

Towards Opportunities (RETO) and Mentoring Offering Training Opportunities for Research (MOTOR) 1 - 2 trainings were offered as part of the Title V Coop. In addition, since January 2020, as part of the institutionalization of the trainings in CTR, two elective courses (INTD 5998 and MDCL 101) were created-offered. The trainings/courses present the main concepts underlying CTR performance through lectures, workshops and presentations, in hybrid modalities, as well as the services-resources of the Center Research Education and Science Communication Opportunities (CRESCO). These programs have given students (undergraduate and graduate) and faculty the opportunity to get started in CTR and to integrate in Clinical and Translational Mentoring Teams (CTMT). **RESULTS/ANTICIPATED RESULTS:** Eight (8) cycles of RETO-MOTOR 1 and seven (7) cycles of RETO-MOTOR 2; two sessions of INTD 5998 and one session of MDCL 101 were offered. The RETO-MOTOR 1 training was completed by 219 participants and RETO-MOTOR 2 by 130 participants. The INTD 5998 course was completed by 22 students and the MDCL 101 course by 18 students. A total of 389 participants have been initiated in the CTR. Of the trainings, 90% indicated that the knowledge acquired in CTR was invaluable, 85% understand that the most significant achievement, as students, was present at a scientific conference, and 100% indicated interest in continuing to do CTR. Of the courses, 100% indicated that they were a good learning experience, helped them increase their knowledge in CTR, met their expectations and would recommend other students to take the course. **DISCUSSION/SIGNIFICANCE:** The RETO-MOTOR 1, RETO-MOTOR 2 trainings and CTR courses provide a base of research knowledge and valuable interprofessional experience for those who wish to start in the clinical and translational research. The Title V Cooperative Project provides this opportunity to undergraduate and graduate students such as faculty of HEI in PR.

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### **Training the translational research workforce: evolution of the Master of Science in Clinical and Translational Investigation Program at the University of Miami CTSI.**

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**OBJECTIVES/GOALS:** The goal of this study is to highlight the unique characteristics of Miami CTSIs Master of Science in Clinical and Translational Investigation (MSCTI) as part of CTSIs overall translational workforce development program and to describe program outcomes. **METHODS/STUDY POPULATION:** The MSCTI at the University of Miami offers a structured, individualized, and mentored educational program that trains students in the principles and practice of translational science and clinical research. Based on student feedback and needs assessment, three courses were specifically created for the program to include additional scientific cognates and promote essential skills for the translational research workforce – team science and entrepreneurship, research ethics, and writing for clinical and translational science. A fourth course on applied statistics is currently under development that provides training in practical statistical knowledge required for clinician-researchers. Career trajectory of graduates and academic output were tracked through surveys and secondary data collection. **RESULTS/ANTICIPATED RESULTS:** The MSCTI Program has enrolled 76 students over its lifetime, including KL2 scholars, NIH K scholars

and T32 trainees; with 25% of students holding foreign degrees. In addition to traditional outcomes such as funding and publications, qualitative case studies will highlight scientific impact and career progress of students. The program has performed exceptionally well in recruiting underrepresented persons in research, with 41% of the students identifying as Hispanic, and 52% of the students as female. Of the graduates, 84% have gone on to achieve leadership positions in NIH and pursue research careers in academic institutions, while 16% have moved to industry, government, or non-profit careers. Overall, 92% of graduates were engaged in research after two years of graduating from the program. **DISCUSSION/SIGNIFICANCE:** Miami CTSIs MSCTI Program has trained students with a wide range of incoming experience to establish successful careers in clinical and translational research and is a critical component of CTSIs translational workforce development program.

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### **Implementing a formal research mentoring training program at the Miami Clinical and Translational Science Institute: early findings and outcomes**

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**OBJECTIVES/GOALS:** The goal of this study is to describe the implementation of a formal research mentoring training program at Miami CTSI in collaboration with University of Colorado CTSI, to build effective mentor-mentee relationships that help build successful research careers for junior faculty. **METHODS/STUDY POPULATION:** The Miami CTSI Research Mentoring Training is a three-part series for early stage faculty and their mentors to strengthen mentoring skills and build successful relationships. The curriculum uses evidence-based strategies and is modeled after University of Colorado CTSIs CO-Mentor Training Program. The pilot training was conducted as a train-the-trainer program with subsequent workshops led by Miami CTSI faculty. The program has mentee-only, mentor-only, and joint sessions covering topics such as networking skills, managing financial aspects of an academic career, and career mapping. To assess program effectiveness, pre/post surveys were conducted and follow up surveys are planned.

Data collected will assess participant diversity, research productivity, and mentoring relationship status. **RESULTS/ANTICIPATED RESULTS:** A total of 49 mentor-mentee teams from 18 departments participated in the training over two cohorts. An upcoming third cohort will be included in the analysis. Overall, 100% mentors and 86% mentees reported the overall value of the program as positive.

Post-training, mentees reported an increase in confidence in creating career development plans and articulating career goals. Mentors reported an increase in confidence in providing guidance tailored to mentees needs. Mentees reported improvement in their knowledge of developing personal narratives and handling financial aspects of research; both mentors and mentees reported improvement in insights into achieving work-life balance. Follow up survey results will provide insight into the evolution of the mentoring relationships. **DISCUSSION/SIGNIFICANCE:** Miami CTSIs mentoring training demonstrated successful participation and positive feedback from mentors and mentees and is poised to become a critical component of the Miami CTSIs research career development pipeline.