

sex and gender variance. The visual arts can provide a familiar ground of understanding between teachers and learners to transform such preconceptions.

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A Flexible and Transformational Approach for Learning Research and Communication Skills: The Center for Research Education and Science Communications Opportunities (CRESCO) of the Title V Cooperative Project between the University of Puerto Rico Medical Sciences Campus and the Universidad Central del Caribe (Title V Coop)

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OBJECTIVES/GOALS: The Title V Coop developed CRESCO, a physical and virtual space in the libraries of the two cooperating institutions. Adopting a flexible and transformational approach, it offers services to support the development of research and information skills of undergraduate students and faculty who receive clinical-translational research (CTR) training. **METHODS/STUDY POPULATION:** Since 2016, CRESCO has been staffed by a multidisciplinary team composed of three librarians, a statistician, an instructional designer, and an IT specialist. The physical facilities of the two libraries were remodeled and equipped, and a central portal was created to provide services and access to resources on a 7/24 basis. Online tutorials, workshops, and mentoring services have been offered that address topics in statistics, literature search, plagiarism, and the use of several research software. Services statistics are collected, and a questionnaire is administered to evaluate the workshops. **RESULTS/ANTICIPATED RESULTS:** The main results include 12 online tutorials created in CTR areas and available in the CRESCO hub portal; 14,660 mentoring/consultations offered in statistics, the use of research-related software, and the search for scientific literature search; and 6 online workshops created in CTR areas, with 463 attendees. When evaluating online workshops, participants considered that their acquired learning was high or extremely high on the following topics: use of Intellectus Statistics (88%, n = 96); selection of statistical tests (81%, n = 92); use of Turnitin (85%, n = 76); literature search (91%, n = 58); and citations and references in Mendeley (90%, n = 67). **DISCUSSION/SIGNIFICANCE:** These results suggest that the flexible, multidisciplinary, and transformational approach of CRESCO has been successful in helping undergraduate students and faculty develop the skills necessary to conduct CTR projects.

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Mothers Leading Science: A program to diversify and develop the research workforce

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OBJECTIVES/GOALS: The purpose of this group is to foster professional and personal growth as leaders, provide peer mentoring, integrate the roles of scientist, woman, and mother, and build a self-sustaining network of peers for ongoing support throughout their careers in an academic setting. **METHODS/STUDY POPULATION:** - Study population: 12 Health sciences research faculty (50% protected research time); identify as female; mother of school-age and/or younger children **Methods:** Year-long program; including a 2-day retreat based on Brene Brown's Dare to Lead **RESULTS/ANTICIPATED RESULTS:** - Despite the pandemic, 100% of participants continued in the program over the one-year duration and met the attendance requirement of 75% - Screening for burnout was effective - facilitator was able to intervene when severe burnout was noted.

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Transforming the pipeline towards independence in Clinical and Translational Research (CTR) through opportunities in research environments for underrepresented health professions faculty and students: The Title V Cooperative Project between University Puerto Rico Medical Sciences Campus and Universidad Central del Caribe (Title V Coop)

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OBJECTIVES/GOALS: Diversity and interdisciplinarity are required for successful and transformational CTR. The Title V Coop developed a training curriculum for underrepresented in CTR health professions faculty and students, successfully integrating them in CTR teams. The curriculum exposed students to theory and then a practicum. **METHODS/STUDY POPULATION:** The curriculum and practicum included basic aspects of training in research including responsible conduct of research and the design of a proposal. The practicum focused on the organizing of a research team identified as a Clinical and Translational Mentoring Team (CTMT) and the implementation of the proposed project. Emphasis was placed on the importance of the mentor-mentee relationship, including peer mentoring. Participants were recruited from across all post-secondary institutions in Puerto Rico emphasizing the participation of faculty (UgF) and students (UgS) from undergraduate programs in health professions and the participation of graduate students (GS) as peer mentors. Research mentors for each of the CTMTs were selected from faculty members that are established researchers. **RESULTS/ANTICIPATED RESULTS:** Twenty-seven (27) proposals from the CTMTs were approved. A total of one hundred and eight (108) participants were or are still engaged in the proposed research. Thirty-four faculty (34) members participated as mentors and three (3) peer reviewed publications have been done. Health professions and science fields represented by the participants include: Nursing, radiology technician, audiologist, medical students, basic science in biology or chemistry, public health and industrial

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 engaged 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 – interprofessional knowledge in CTR. **METHODS/STUDY POPULATION:** Since April 2017, Research Education