Forging Collaboration and the Scalable Dissemination of Biomedical Research Commercialization Education
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ABSTRACT IMPACT: A robust and collaborative network of expertise and services is essential for successful research commercialization, including timely and scalable educational support for CTSA institutions and individual faculty investigators with biomedical innovations. OBJECTIVES/GOALS: Leverage expertise at the University of Michigan (UM) by creating collaborative and scalable interactive online courses to instruct and prepare internal and external faculty to navigate critical stages of life science academic research commercialization. METHODS/STUDY POPULATION: UM’s Fast Forward Medical Innovation created two online courses with the UM Office of Technology Transfer and the Michigan Institute for Commercialization/Entrepreneurship (MICH). Collaborative planning committees, with content and educational experts, set course goals and learning objectives based on audience needs (e.g. preparation for consultations, commercialization concepts, etc.). Draft content was developed, peer reviewed, and revised before Articulate Storyline was used to convert didactic content to active learning content (e.g. interactive slides, scenarios, quizzes, and forms). Pilot testing was conducted prior to the launch to faculty investigators throughout the UM network. RESULTS/ANTICIPATED RESULTS: Intellectual Property in the Academic Setting launched via the FFMI website and newsletter in July 2020 and has had 66 learners to date. Medical Device Regulations launched in October 2020 and has 22 learners. OTT and MICH have successfully integrated the courses into their consultation process by requesting review from faculty investigators. We suspect that this will lead to more in-depth and meaningful conversation. Additionally, these courses have been integrated into an FFMI commercialization course to instruct on critical concepts. Evaluation and refinement for both use cases will ensue, as well as inform future collaborative courses.

DISCUSSION/SIGNIFICANCE OF FINDINGS: Early results suggest that the courses are advantageous and can serve as a model for future collaborations. The opportunity to disseminate the courses across the CTSA network, as well as collaborate with other institutions, to scale localized expertise to a broader network is promising.

Title V Medical Sciences Campus Project (TVMSC): Clinical and Translational Research (CTR) with an Interdisciplinary/Entrepreneurship (IE) approach for Students and Faculty (UG, UGF) from Undergraduate Programs (UGP) in Puerto Rico: an initiative for an early jumpstart in CTR and Scientific Entrepreneurship (SE) in a virtual scenario 2020-25.
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ABSTRACT IMPACT: This presentation highlights an integrated curriculum in CTR and a scientific entrepreneurship approach to entice and support students and faculty in HP programs into CTR and SE thus expanding the pool of new minority CTR researchers. OBJECTIVES/GOALS: To present the TVMSC as a hub for trainings, mentoring programs, courses, entrepreneurship and support activities for health professionals (HP) and HP students: graduate (GS) and UG, and UGF. Responding to the need for CTR minority researchers, in a virtual setting due to COVID-19 crisis. METHODS/STUDY POPULATION: TVMSC will offer an educational program based in the Center for Research, Entrepreneurship and Scientific Collaboration (CRESCO) with on line courses and workshops in CTR and SE, for HP and students and a continued education curriculum for HP and clinician scientists toward a certification in CTR.

Two hands-on experiences: a) A Pilot project program (PiP) with teams composed of an F, that previously completed training cycles and a research experience from a previous project in CTR as PI, with a research mentor and students or an established researcher as a PI with UG and UGF, and b) participation in a SE team which will engage in training and submission of an SE project proposal. RESULTS/ANTICIPATED RESULTS: By the end of the five-year period the project will have had 200 UG, 200 GS and 200 F that received online assistance in CTR skills, statistics and SE; 48 UG
and 48 GS with the skills in SEFL. In curricular development the project expects to have 6 online tutorials created, one FLSE online course and 18 modules in CTR content areas available for continued education of HP. Certifications in CTR will be completed by 160F/HPs. The expected participation in CTR on-hands experiences is 32 F, 64 students and 32 established researchers. PIP teams will publish at least 8 scientific papers and SEFL teams will submit at least 5 SE project proposals and 100% increase in CRESCO web based resources DISCUSSION/SIGNIFICANCE OF FINDINGS: This Project and its expected results will provide students and faculty members island-wide with the knowledge, skills and experiences in CTR with IE approach to foster the expansion of a cadre of Hispanic minority CTR researchers in direct benefit of the health of the people of Puerto Rico.

Assessing the Need for Competency-Based Self-Assessment Tools for CTSA Professionals

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ABSTRACT IMPACT: This study works to improve the quality of clinical and translational workforce development programs in order to enhance the training of researchers in the field. OBJECTIVES/GOALS: Evaluating the impact of Clinical and Translational Science Awards (CTSA) Programs is crucial. To this end, the value of competency-based metrics to assess the professional growth of CTSA awardees is unknown. A needs assessment was conducted to determine the present use and potential need for a competency-based self-assessment tool. METHODS/STUDY POPULATION: A mixed methods study was conducted using synchronous live interviews and asynchronous online surveys. Study authors contacted 102 CTSA administrators nationwide for live interviews according to I-Corps eCustomer Discovery Guidelines. Interviews were recorded and transcribed through Innovation Within, an I-Corps online platform and independently analyzed by two members of the study team. An online REDCap survey was also distributed to 63 CTSA hubs via an internal listserv. In an attempt to elicit responses similar to the I-Corps eCustomer Discovery Guidelines, the survey asked questions related to the use of competency assessments and requested explanatory responses but did not explicitly ask respondents if they needed a competency-based self-assessment tool. RESULTS/ANTICIPATED RESULTS: Overall, 30 unique CTSA hubs participated. Interview requests and surveys had a response rate of 22\% (22 out of 102) and 33\% (21 out of 63), respectively. Of the interviewees, 32\% (7 out of 22) reported existing use of a competency-based assessment tool, and 59\% (13 out of 22), inclusive of those already using a tool, indicated a clear need for one. Of the survey respondents, 62\% (13 out of 21) already use a CBST. Interviewees highlighted preferred features for a CBST: customization, soft skills assessment, and integration with local academic institutions. Communication and teamwork were highly valued soft skills, a finding reinforced by survey results in which 80\% of respondents marked oral and written communication and teamwork as important skills for their professional workforce. DISCUSSION/SIGNIFICANCE OF FINDINGS: Among CTSA administrators involved with workforce development, there is notable interest in a competency-based self-assessment tool, particularly one that is customizable, soft skill-focused, and integrated with local educational systems.

The Efficacy of Converting an In-person Commercialization Education Course to a Virtual and Flipped Experience

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ABSTRACT IMPACT: The successful conversion of an in-person biomedical research commercialization education course to a fully virtual and flipped experience (self-paced) allows greater participation from faculty investigators at CTSA institutions and serves as a model for similar educational programs intended to accelerate the translation of biomedical innovations to products of impact. OBJECTIVES/GOALS: Due to COVID-19, University of Michigan’s Fast Forward Medical Innovation developed new educational resources and leveraged virtual learning tools to convert a successful in-person research commercialization course to a fully virtual, flipped format and evaluated the effectiveness of the converted course compared to the in-person equivalent. METHODS/STUDY POPULATION: Two novel interactive modules (intellectual property and FDA regulation) and five instructional videos (customer discovery, value proposition, opportunity sizing, target product profile, and patent searches) were developed while Constant Contact and Zoom were used for a weekly progression of content delivery and to flip the course: (1) forming/testing value propositions, (2) intellectual property, (3) regulatory, (4) medical reimbursement, (5) business case development. A total of 32 faculty and graduate students completed the virtual, flipped course and submitted a post-course evaluation. Results of the converted course were compared to evaluation results from the in-person course. RESULTS/ANTICIPATED RESULTS: Open rates for the weekly email content were: (1)61\%, (2)67\%, (3)65\%, (4)67\%, and (5)59\%. Total views for the modules and videos were: IP-28, regulation-19, customer discovery-62, value proposition-21, opportunity sizing-66, target product profile-11, and patent searches-29. Evaluation results from the virtual course (n=22) were compared to mean results from the 5 previous in-person courses (n=42); 86\% of virtual course respondents stated the course met the objectives compared to 85\% of in-person respondents; 87\% of virtual respondents stated the course met their expectations compared to 100\% of in-person; 87\% of virtual respondents said they would participate in a follow-up program compared to 94\% in-person; 91\% of virtual respondents would recommend the course to others compared to 97\% of in-person. DISCUSSION/SIGNIFICANCE OF FINDINGS: Email open rates and content views suggest positive flipped participation. Overall, the converted course was comparable to the in-person course at meeting objectives, suggesting the virtual format is effective at delivering the course content and holds the potential for engaging a broader audience.