

were offered the 2<sup>nd</sup> semester of 2018 and consisted of 20 hours of interdisciplinary sessions in: introduction to and definition of CTR; preparation of a CTR-presentation; how to interview/share a presentation of a CT researcher and to prepare a research question in CTR. To assess the knowledge of S and F in the above-mentioned skills and their continuation in the 2<sup>nd</sup> level of CTR training, surveys were administered: pre-test, at the beginning, post-test, sometime during the FLTCs, and satisfaction at the end of the FLTCs. RESULTS/ANTICIPATED RESULTS: Fifty eight (58) S/F from UPRMSC, UCC and 7 other institutions participated. Forty two (42,72%) answered a pre-test and 31/42 (74%) completed the post-test. Results showed that S/F: who correctly defined CTR increased from 7% to 77%; their ability to identify a CT researcher increased from 10% to 83%. Fifty five percent (55%) (21/38) S/F that were certified in the FLTCs, answered the satisfaction survey. One hundred percent (100%) indicated that the materials offered contributed in the identification of a CT researcher and a topic in CTR; 100% answered that the FLTCs contributed higher knowledge in and provided new skills in CTR. Moreover, 31/38 (82%) S/F started the 2<sup>nd</sup> level of training. DISCUSSION/SIGNIFICANCE OF IMPACT: The FLTCs were successful in increasing S/F knowledge of CTR and to further engage in 2<sup>nd</sup> level of trainings. Title V impact extended island wide, increasing the diversity of represented health professions and science fields among participants. The interventions were deemed to be of high quality.

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### The Use of Checklists Throughout the Lifecourse of a Clinical Research Study: The Rockefeller University Checklist Suite

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OBJECTIVES/GOALS: We have developed a comprehensive Translational Research Navigation Program to guide investigators all the way from protocol development through study closure. As the program evolved, we initially developed organizational tools and then restructured them into a series of checklists to ensure that critical elements were not excluded or duplicated. METHODS/STUDY POPULATION: A series of checklists to assure that all research elements, including regulatory, scientific, and institutional, are addressed from protocol inception through study closure were developed by clinical research coordinators/navigators. The checklists are periodically updated and modified to reflect changing local and national regulations and policies. The first tool became the "Protocol Development Checklist" and then additional tools were developed and modified into a suite of navigation checklists that include "Protocol Implementation Checklist," "Protocol Conduct Checklist," and "Protocol Completion Checklist." RESULTS/ANTICIPATED RESULTS: The checklists have been incorporated into the Translational Research Navigation Program and have enhanced the organization and quality of protocols throughout their lifespan. For example, implementation of the Protocol Development Checklist resulted in a reduction in time to IRB approval (currently 10 days), and implementation of the Protocol Implementation Checklist has impacted the time from IRB approval to study start-up. The Protocol Conduct Checklist has aided investigators in being better prepared and more organized for study conduct activities and the Protocol Closure Checklist has assured timely protocol closure and regulatory compliance, including reporting to [ClinicalTrials.gov](http://ClinicalTrials.gov). DISCUSSION/SIGNIFICANCE OF IMPACT:

Protocol checklists are powerful tools to enhance thoroughness, organization, and quality of the clinical research process. The Rockefeller University protocol checklists are available to the CTSA and Scientific Communities. CONFLICT OF INTEREST DESCRIPTION: NA.

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### Thirteen Years of Pipeline Programming at the University of Rochester's Clinical & Translational Science Institute to Train Physician-Scientists

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OBJECTIVES/GOALS: Physician-scientists play a vital role in biomedical research but this chosen career path has many challenges, such as long training periods and funding. The University of Rochester (UR) CTSI pipeline programs address this by enabling medical trainees to partake in enriched research experiences. METHODS/STUDY POPULATION: The UR CTSI TLI is a training grant from the National Center for Advancing Translational Science (NCATS), which funds predoctoral trainees. The TLI-funded physician-scientist pipeline includes the Academic Research Track (ART) year-out program and the Medical Science Training Program (MSTP). We describe the characteristics and training outcomes of TLI-funded trainees. We also obtained testimonials of current and former trainees regarding their career component decision-making, and their perception of programs, in order to identify how best to address the challenges of the physician-scientist workforce, and to facilitate the transition between the clinic and bench. RESULTS/ANTICIPATED RESULTS: From 2006-2019, the UR CTSI has had 56 ART trainees and 17 MSTP trainees complete training; six trainees have transitioned into the MSTP after completing the ART program. As of 2019, 63 of 67 graduated trainees (94%) have continued their engagement in CTS after graduation. Importantly, our programs have facilitated the careers of 31 women (39.7%) and 12 under-represented minorities (15.4%). We will present a breadth of qualitative data to inform which parts of the TLI-related programs have been successful, and which parts could use programmatic improvement to aid the transition into the physician-scientist workforce. DISCUSSION/SIGNIFICANCE OF IMPACT: Physician-scientist training barriers in the US have resulted in a shortage of these professionals in the clinical and translation workforce. Our data show the UR CTSI has been successful in addressing several of these challenges via the TLI-funded ART, MSTP, and ART/MSTP dual program pipeline.

## Evaluation

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### An innovative Tool for Completing the Clinical and Translational Science Award (CTSA) Research Performance Progress Report (RPPR) using REDCap

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OBJECTIVES/GOALS: The RPPR Tool was created to accurately and systematically track our CTSA's overall program goals and core's