

best practices and use of the IDP over the CTS academic life-course. METHODS/STUDY POPULATION: To accomplish our goal, we propose the following methods: (1) an online survey, using a convenience sample of the 24 KL2 CTS Collaborative members (conducted in 2017), to assess perceived needs for a universal CTS-IDP, current IDP practices, barriers to IDP use, and to discern and align each CTS Hub's interests, expertise and commitment to specific areas of the study; (2) A scoping narrative literature review, utilizing the Arksey and O'Malley framework covering the time period corresponding to the initiation of funding (1999) of the original K30 Clinical Research Curriculum Awards through to the present CTS funding period, incorporating Medical Subject Heading (MeSH) keywords (career development; career development plan; employee plan; mentoring plans; compacts; research contracts; career planning; mentor guide), initially delineated by USC reference librarian and to be expanded by reference librarian services from the Icahn School of Medicine at Mount Sinai and University of Rochester, and performed on NIH searchable databases including NCBI PubMed, Central and Medline & Worldwide Science; Web of Science, ProQuest, ProQuest Abi/Inform, Google Scholar, Cochrane, Ovid MEDLINE databases, as well as Google for published papers in English and Spanish. For this portion of the work, we will describe and characterize (1) research career development or progression constructs, domains, and milestones; (2) establish the presence or absence of defined and/or pre-specified timed milestone objectives and inclusion of SWOT analytics (strengths, weaknesses, opportunities, and threats) and/or Gantt chart approaches; (3) delineate IDPs structure, toolkits and their key features (competencies, skills acquisition and processes utilized); (4) and identify specific gaps to best address the need for personalized career development education. Based on this review, we will synthesize CTS milestones, develop a time frame for meeting RCD expectations, and establish RCD benchmarks for achieving these milestones, all in consensus with the IDP Collaborative Workgroup. RESULTS/ANTICIPATED RESULTS: Seventy-seven percent of the IDP CTSAs responded to the online survey, led by University of Rochester, and the results can be summarized as follows: (1) 100% agreed that the IDP process is important and should be considerably improved to optimize effectiveness; (2) a range of diverse IDP formats are utilized, making comparisons across programs difficult; (3) 50% of CTSAs hubs report only fair to good compliance with the IDP process; (4) a major barrier to the IDP process is lack of instruction regarding how best to utilize; (5) poor alignment of currently available IDPs designed for basic science PhDs with CTS investigators; (6) an absence of a CTS specific IDP to best foster RCD for this specific career trajectory. When asked: What are the barriers to writing a detailed and thoughtful IDP, responses in order of agreement from greatest to least were: No verification of acquired competencies, beyond self-report (56%), Static platform (38%), Not constructed for clinical and translational researcher (31%), No analytical or documentation on use (31%), No instruction given to scholars on how to use it effectively and efficiently (31%), The IDP we are using is more constructed for PhD students and postdoctoral fellows (25%), No instruction given to the scholars on why it is important as adult learners (19%), and Not constructed for early career physicians/scientist (13%). Additional progress has been made on our Scoping review: An initial ABI/Inform and PubMed USC research librarian conducted search using Author names yielded 72 articles, of which only 2 were relevant to the topic at hand. A ProQuest™ search yielded 19 potentially relevant articles, 11 of which were of relevance to the topic of IDPs; and a Google Scholar search yielded 18 and 25 on career development and self-management, respectively. This has enabled us to put forth an initial model of factors that impact the purpose and design of IDPs that includes: DISCUSSION/SIGNIFICANCE OF IMPACT: Discussion: Our initial data suggests that many CTSAs institutions see the need to further enhance the mentoring process with a more informed and personalized IDP template and process. Furthermore, our initial scoping review suggests a framework upon which to build specific components of a more ideal and useful IDP to best guide mentored research career development of CTS trainees. Significance: Developing and evaluating collaborative evidence-based CTS IDP and corresponding e-Learning Guide could potentially prevent or reduce important delays in RCD, a common roadblock for the translation of clinical interventions. Ultimately, the CTS-IDP serves not only to support and frame a scholar's RCD "habits of mind" during training and early career development but to also to achieve a sustainable long-term career at a CTS researcher equipped to meet the ever challenging and dynamic research landscape.

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### TLI team approach to social and genetic determinants of nocturnal blood pressure

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OBJECTIVES/SPECIFIC AIMS: The TLI Team approach aims to train translational investigators capable of tackling complex and multifaceted diseases, such as hypertension, by beginning multidisciplinary, team-based training early in their graduate programs. METHODS/STUDY POPULATION: Leanne Dumeny is a

graduate student in Genetics and Genomics studying how pharmacogenomics can be applied to improve clinical care and cardiovascular outcomes. Chu Hsiao is a graduate student in Anthropology studying how sociocultural experiences become biologically embodied. Both are in the Ph.D. phase of M.D.-Ph.D. training. Joining the seemingly disparate but complementary fields of anthropology and genomics facilitates understanding of the intersection between socially driven experiences and genetics on nocturnal blood pressure. Understanding both social determinants, such as racial discrimination, and biological determinants, such as genetics, is important because an interplay of gene-environment interactions influences many complex diseases. Rarely can 1 individual, or 1 discipline, tackle all the perspectives necessary to answer these types of complex questions. The TLI Team curriculum teaches students to navigate the spectrum of translational research as a team, reflect on disciplinary limitations, and embrace collaborative research. RESULTS/ANTICIPATED RESULTS: This team project will investigate the relationship between racial discrimination and genetics using a large epidemiological cohort of African Americans in Mississippi. The data request application is currently under review. By the project's end, the team anticipates their investigation will reveal novel associations between racial discrimination, genetic polymorphisms, and nocturnal blood pressure measurements. The investigators will have gained experience obtaining and analyzing large external data sets, working in diverse team settings, collaborating across state-lines, and publishing articles. Through this team approach, the students will also understand the barriers to working in multidisciplinary groups, and develop a foundation for approaching future collaborations. DISCUSSION/SIGNIFICANCE OF IMPACT: By joining anthropology with genomics, it becomes possible to understand the intersection between socially driven experiences of racial discrimination and genetics on nocturnal blood pressure. The successful training of this first cohort of team-applicants to the TLI funding mechanism can impact how graduate education will be structured and could reframe graduate education to emphasize a team-based approach.

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### Training cycle in clinical and translational research (CTR) for undergraduate health sciences programs (HSUP) at University of Puerto Rico-Medical Sciences Campus (UPR-MSC) and Universidad Central del Caribe (UCC): Pathway for students and faculty

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OBJECTIVES/SPECIFIC AIMS: Responding to the need and interest of students and faculty of the UHSP in learning about CTR, the Title V Cooperative Project between UPR-MSC and UCC, developed and offered a training cycle (TC) in CTR. METHODS/STUDY POPULATION: Undergraduate students (US), undergraduate faculty (UF), and graduate students (GS) were invited to register in: Research Education Towards Opportunities (RETO) and Mentorship Offering Training Opportunities for Research (MOTOR), which consisted of 20 hours of training in CTR, with interdisciplinary sessions in: Introduction and preparation of a presentation in CTR; Identify, interview and share a presentation of a CT researcher; participation in conferences and a summer camp in CTR. At the end of the TC, surveys—satisfaction and needs assessment—for training in CTR were administered. RESULTS/ANTICIPATED RESULTS: Thirty-three (33) registered in the TC, distributed: 13 (39.39%) US in RETO, 12 (36.36%) GS and 8 (24.24%) UF in MOTOR. Of these, 25 (75.75%) answered and submitted the on-line surveys and received a completion certificate. All (100%) were satisfied with the TC, and for 96% of the respondents, their expectations were fulfilled, and will continue in the TC. They selected critical review, scientific communication, and cultural diversity as thematic areas of interest. In addition, 60% of them selected neuroscience, cancer and medical imaging as main research areas of interest. DISCUSSION/SIGNIFICANCE OF IMPACT: The TC demonstrated to be an effective strategy to provide new knowledge, experiences, and interest in CTR. It also established a pathway for future engagement in CTR.

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### Utilizing a reviewer database to facilitate integration of an investigator-focused translational research and career development program across the state of Indiana

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OBJECTIVES/SPECIFIC AIMS: The Indiana CTSI is investigating innovative approaches to integrate resources that will enrich scientific investigators. Our