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Indiana CTSI Think Tank Program

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OBJECTIVES/GOALS: The Think Tanks' aim to assist faculty innovators along the path from discovery to commercialization; serving as a one-stop-shop where investigators can access advice, pilot funds, and direction toward other available resources within the Indiana CTSI. **METHODS/STUDY POPULATION:** Faculty receive guidance from a pool of advisors in the drug and device industry, as well as their respective university commercialization offices; who serve as an essential resource for a wide range of scientific, technical, clinical, business, and regulatory questions. Investigators submit a simple intake form to connect with a project facilitator for detailed guidance prior to formal meetings. Projects are guided from start to finish with robust tracking and milestone-based funding to help generate data for Investigational New Drug (IND) or Investigational Device Exemption (IDE) applications. Project tracking is conducted using REDCap, which is used for all investigator submissions, with internal processes also tracked in REDCap. **RESULTS/ANTICIPATED RESULTS:** From Feb-Aug 2021; the Think Tanks provided feedback to 15 drug projects and 6 medical device projects. This included 12 from Indiana University; 4 from Purdue University; and 5 from the University of Notre Dame. Interestingly; drug innovations were submitted primarily by tenure track faculty (100%) with a history of NIH/NSF funding (50%); while device innovations were submitted primarily by clinical faculty without a history of NIH/NSF funding (66%). Based on first-round feedback, a total of approximately \$3,400 in pilot funds were provided. Efforts are underway to obtain survey-based feedback from all applicants to date; which will be used to inform future program modifications. **DISCUSSION/SIGNIFICANCE:** The budding "Think Tank" program provides faculty with a broad perspective of the entire drug and medical device development process, helping investigators understand the critical interplay development stages. Future work seeks to enhance faculty engagement in, and understanding of the commercialization process across Indiana CTSI institutions.

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Innovative solutions to streamline data collection, exchange, and utilization in translational research

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OBJECTIVES/GOALS: To determine the utility of any standard, one must first evaluate whether or not the standard meets the needs of the use case it is meant to support. We aim to quantify data availability of the HL7 FHIR standard to support data collection for three state-based registries in a rural state and measure the potential effects on data quality and collection time. **METHODS/STUDY POPULATION:** FHIR mapping will be performed to assess the level of HL7 FHIR standard completeness (or data element coverage) in supporting data collection for the three registries. A systematic

approach, previously developed and used by Garza and Zozus, will be used to map registry data elements to corresponding HL7 FHIR standard resources. FHIR coverage will be calculated as a percentage (total data elements "Available in FHIR" vs. total data elements over-all) and will be observed across different domain areas (i.e., demographics vs. medications vs. vital signs, etc.) in order to identify the domains with the least and most coverage. **RESULTS/ANTICIPATED RESULTS:** Although there have been informatics solutions that relied on data exchange standards to improve data collection, none have actually evaluated the coverage of the standard for supporting the needs of clinical data registries. To address this gap, we aim to evaluate the availability of the HL7 FHIR standard to support data collection for three state-based registries. These results will provide insight into the generalizability of a FHIR-based solution to support data acquisition and processing across multiple registries and demonstrate the potential for seamless exchange of that data for secondary use in clinical and translational research. Quantifying the coverage will also be used to further advance its development in order to meet the data collection needs of state and national clinical data registries. **DISCUSSION/SIGNIFICANCE:** Registries often rely on manual abstraction of EHR data. These manual approaches have had a negative impact on data quality and cost, often due to the complexities associated with collection and mapping of the data to fit the registry model. HL7 FHIR has the potential to address these issues by automating part or all of the data collection process.

Education, Career Development and Workforce

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Increasing Writing Self-Efficacy in Early-Career Researchers from Underrepresented Backgrounds: A Pilot Study

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OBJECTIVES/GOALS: Writers with high self-efficacy perform better than writers with low self-efficacy regardless of writing ability. We investigated whether Shut Up & Write[®] (SUAW), a less-intensive writing intervention, produced gains in writing self-efficacy similar to those reported by intensive, longer-term interventions. **METHODS/STUDY POPULATION:** Meetings were held 2x/wk for 5 wks via Zoom, for 1 hour. Participants were encouraged to attend at least 1x/wk. The 1st few mins were devoted to a discussion of what each person planned to work on. Then, a timer was set and each writer muted themselves, shuttered their webcam, and wrote. When the alarm sounded, everyone returned to the group, and discussed what was accomplished. We measured writing self-efficacy before & after participating in SUAW using a pre-post survey design and used two-tailed paired t-tests to test for significant differences between pre- and post-test means. SUAW participants (n=23) were in 1 of 2 categories: 10 were self-selected LEADS scholars from MSIs, and 13 were medical students in a palliative care program. 86% were URB, 78% were female. **RESULTS/ANTICIPATED RESULTS:** Seven (30%) SUAW participants completed both the pre- and post-survey. Individuals showed significantly higher agreement from pre-to-post

on the self-efficacy item “I have a generally positive attitude toward writing” ($p=0.047$) using a 5-point Likert scale from “completely agree” to “completely disagree.” Most other items did not indicate significant change between pre- and post-survey. The mean of the question “How satisfied were you with this Shut Up & Write activity?” which appeared only on the post-survey ($n=10$) was 1.10 (1=extremely satisfied, 5=extremely dissatisfied). Anticipated result: We suspect that the benefits of SUAW are best actualized by ongoing attendance, and that benefits are cumulative. DISCUSSION/SIGNIFICANCE: We found that participation in SUAW promotes writing self-efficacy in early-career URB researchers. This is an exciting finding because publishing ones research is essential for academic advancement, and research supports a relationship between writing self-efficacy and writing production. This may curtail URB scientists’ rate of attrition.

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Training basic researchers in translational approaches to facilitate the application of laboratory discoveries

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OBJECTIVES/GOALS: To maximize health outcomes from their work, basic researchers must understand the process by which lab discoveries are translated into clinical care. We developed an academic course designed to provide students in our Clinical and Translational Sciences PhD program with an in-depth understanding of translational applications of basic research. METHODS/STUDY POPULATION: A preliminary needs assessment was done with students, educators, and clinicians to identify the course content. Based on these data, didactic modules including research question identification, research team development, participant recruitment, and research data collection were piloted in a synchronous, virtual course. Then, for 6 weeks, students shadowed clinical mentors who worked in the students research areas. Finally, with their mentors, students developed and presented clinical research protocols. Student pre- and post-course surveys gauged alignment of course objectives and learning outcomes. A post-course, focus group with students gathered feedback on course content, structure, and students confidence in implementing their experiences from the course into real-world settings. RESULTS/ANTICIPATED RESULTS: Six MD/PhD and PhD students participated in the pilot course. Pre/post-assessments ($n=4$) showed students were more confident in clinical question/research protocol formulation, development of patient recruitment/enrollment strategies, and integration of research methodologies into their research projects after completing the course. Students asked for additional content on budgeting and grant funding. Post-course focus group participants ($n=2$) appreciated the experience of writing a clinical protocol and the flipped classroom teaching style, which allowed them to network with clinical faculty leading didactic sessions. Students also noted course content was relevant and motivating, although they suggested adding content about clinical trials measures to enhance their shadowing experiences. DISCUSSION/SIGNIFICANCE: A course that combines didactic and clinical experiential training provides a robust, translational research foundation for basic scientists. This training is critical to help them contribute to the effective/efficient translation of lab discoveries to clinical practice. Future course development will include students from other PhD programs.

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The Climate is Changing, Why Cant We? Faculty Perspectives on Education for Sustainable Healthcare in Health Education*

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OBJECTIVES/GOALS: Despite calls for the integration of Education for Sustainable Healthcare (ESH) into health professional training programs, most curricula have yet to adapt accordingly. This qualitative study sought to understand faculty perspectives on ESH knowledge, interest, barriers, and facilitators. METHODS/STUDY POPULATION: From 2018 to 2020, 71 health professional education faculty from 6 University of California (UC) campuses participated in ESH integration workshops. Using purposeful sampling based on gender and campus, a subset of workshop faculty participants were selected to participate in individual interviews. Interviews were conducted via Zoom using a structured interview guide, eliciting participants experience integrating ESH, perceived barriers and facilitators, and perspectives on student, faculty, and health science leadership knowledge and interest. Transcripts were double coded with an inductive-deductive approach using Dedoose, reconciled, and analyzed to identify themes. RESULTS/ANTICIPATED RESULTS: Participants included 17 faculty at 6 UC campuses representing diverse health disciplines. Although participants noted high general awareness of and interest in climate change among students and faculty, they observed a lack of specific, health-relevant knowledge, resulting in discomfort communicating with others on climate and health. Perceived barriers to expansion of ESH included limited curricular space, competing topics, and lack of faculty expertise. Participants posited that framing climate change in health terms, establishing learning objectives and protected faculty time, identifying connections to ESH within existing research and curriculum, and obtaining commitments from campus leadership would facilitate successful ESH integration. DISCUSSION/SIGNIFICANCE: Our findings reinforce student and faculty interest in ESH curricular integration and identify important barriers and facilitators, lending context for educators planning ESH infusion. Training of faculty on climate health is urgently needed for ESH integration in health professional education.

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You liked it, but did you learn anything? A process for redesigning follow-up surveys in attempts to measure success beyond satisfaction

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OBJECTIVES/GOALS: Project objectives: Collect, analyze, redesign, and redeploy the follow-up surveys sent after services rendered or educational offerings attended to improve outcome measurement. Presentation objectives: Provide a process for others to optimize their assessment surveys. METHODS/STUDY POPULATION: A team of interdisciplinary experts from Evaluation and Improvement, Workforce Development, and Administration took a systematic and collaborative approach to optimizing service and educational offering assessment. The team collected all 35 existing surveys currently in use at the CTSA, developed a matrix table to organize findings, cross-analyzed/normed to recognize and reduce bias, engaged other staff and faculty at specific intervals to encourage buy-in, and