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### The Formation of the ACTS Diversity, Equity, and Inclusion Committee to Increase Belonging

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**OBJECTIVES/GOALS:** The Association of Clinical and Translational Science (ACTS) chartered a Diversity, Equity, and Inclusion (DEI) Committee to prioritize activities to support, develop and report on metrics for measuring progress toward DEI goals. This poster aims to describe the formative process toward prioritizing DEI in society's efforts. **METHODS/STUDY POPULATION:** In 2021, the ACTS chartered the DEI Committee. Two ACTS Board of Directors members chair the committee, and members represent 10 academic institutions committed to prioritizing DEI. Members participated in a Human-Centered Design process to develop the committee's mission, goals, and activities. The committee determined areas of opportunity for ACTS to increase DEI by identifying challenges to support DEI in clinical and translational science. The chairs facilitated a discussion using Mural to foster an interactive strategy to engage members in conversations that respected individual experiences, promoted a discussion of actions that ACTS as a society, and determining metrics for measuring DEI. **RESULTS/ANTICIPATED RESULTS:** We plan to present the committee's efforts to create the ACTS mission statement and strategies to priority to DEI. We will describe current and future activities to engage historically underrepresented members and academic institutions in ACTS programs. Based on the committee's work, ACTS has taken systematic approaches toward social justice and is beginning to determine new ways of engaging members. **DISCUSSION/SIGNIFICANCE:** Scientific societies that prioritize DEI increases equity and belonging across members. ACTS is at the forefront of advocacy, policy, and social justice effort. The DEI committee is positioned to aid ACTS in increasing DEI across the clinical and translational science spectrum.

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### Thoughts on Designing a Summer Internship for Undergraduates at an Academic Medical Center

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**OBJECTIVES/GOALS:** The overall goal is to provide tips and suggestions for designing a summer internship program for undergraduates at an institution that only offers advanced degrees. This poster seeks to highlight what worked well and items that can be improved upon from a program that ran for the first time at the University of Texas Medical Branch in Summer 2022. **METHODS/STUDY POPULATION:** In February 2022, we opened admissions to a summer internship program whose goals are to expose students to statistical design and analysis problems from real research, while

providing them with the conceptual and technical tools to address these problems. As such, students should be able 1) to assess study designs for strengths and weaknesses in addressing specific biomedical questions, 2) to use the tools of statistical modeling, data science, and hypothesis testing along with state-of-the-art statistical software to work on problems as well as produce results and conclusions for these problems, and 3) to understand how developing these skills can lead to a wide variety of career opportunities both inside and outside of academia. We ultimately recruited 12 participants in the first summer. **RESULTS/ANTICIPATED RESULTS:** Based on feedback from participants, we have identified recruitment efforts that worked (and those that need improvement), teaching methods that worked (as well as those that need improving), and ideas for career development sessions (based on questions generated from current participants). Each participant was paired with another student on a research project. Each research project had both a biostatistics faculty mentor as well as a basic science/clinical faculty mentor. We will discuss what worked/what needs improvement from this sort of situation as well. The program culminated in a poster session which was very well received by participants and faculty alike. **DISCUSSION/SIGNIFICANCE:** This internship program is significant because developing a workforce knowledgeable in biostatistics and data science has been increasingly in demand to improve the efficiency and reliability of biomedical innovation. My providing guidance to others hoping to provide similar programs, we aim to develop such skills in the incoming workforce.

## Evaluation

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### A CTS team approach to reliable delivery of aerosols to lung cells at the air-liquid interface (ALI), through Dosimetric Aerosol in Vitro Inhalation Device (DAVID)

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**OBJECTIVES/GOALS:** In vitro models that mimic the human respiratory system are needed to assess the toxicity of inhaled contaminants. Therefore, our goal is to establish a Dosimetric Aerosol in-Vitro Inhalation Device (DAVID) that delivers aerosols in different patterns to human lung cells cultured at an air-liquid interface (ALI). **METHODS/STUDY POPULATION:** The collection unit of DAVID was modified in this study to accommodate different deposition patterns (spots, annular ring, rectangle & circle). CuO aerosols of varying concentrations were generated using a 6-jet Collison nebulizer for varying time periods to achieve different doses. To quantify the doses that were delivered to cells, the samples were digested with nitric acid & analyzed by Inductively Coupled Plasma-Optical Emission Spectrometry. Following the exposure of A549 cells to

CuO aerosols, cytotoxicity and mRNA expression (i.e., HMOX1 & IL-8) will be assessed via LDH and RT-qPCR to determine the effect of regional (mass deposited/area of the pattern) and global (mass deposited/area of the cell culture insert) doses in cells. RESULTS/ANTICIPATED RESULTS: The deposition areas covered by rectangular, spot, annular ring, and circular patterns are estimated to be 6, 17, 27 and 85% of the insert's surface area, onto which cells are cultured. Results for the patterns tested (spots and annular ring) show that both the regional and global doses were greater for spots than annular ring. Also, the regional doses were higher than global doses. Irrespective of the patterns, the global doses were the same for nebulizer suspensions of 0.1-1 mg/mL. Statistical analysis by ANOVA revealed there was no significant difference in doses between replicate inserts used in the same trial. We anticipate that regional doses with aerosol deposition to a larger surface area of the cell culture insert will correspond with higher cytotoxicity and mRNA expression of HMOX1 and IL-8 in cells. DISCUSSION/SIGNIFICANCE: There are limited in vitro exposure systems that can efficiently deliver aerosols to lung cells, while also mimicking inhalation by humans. In addition to addressing this knowledge gap, we will show the role of regional & global doses in studying cellular response & the ability of DAVID to deliver aerosols in different deposition patterns.

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### **A formative usability evaluation of a community pharmacist-facing health information exchange (HIE) interface**

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OBJECTIVES/GOALS: To evaluate the usability of a HIE interface design among community pharmacists and technicians to identify opportunities for design improvements METHODS/STUDY POPULATION: Pharmacists and pharmacy technicians employed at Indiana community pharmacies participated in formative usability testing, via a Rapid Usability Evaluation (RUE), with an interactive, PDF prototype of the HIE interface. Participants were video-recorded to capture first impressions on the usability of the HIE prototype via the think aloud technique. Each participant had up to 1 hour to complete 4 clinical scenarios. Afterwards, participants completed the System Usability Scale (SUS; scale 0–100, with 100 being the best) to rate their satisfaction with the HIE prototype. RESULTS/ANTICIPATED RESULTS: Across 3 community pharmacies, 16 individuals participated in usability testing: 8 pharmacists and 8 technicians. The average SUS score for the HIE interface across participants from all sites was 70. Pharmacists on average scored the interface higher than technicians, 74 vs. 65, respectively. Initial findings from one pharmacy revealed that both pharmacists and technicians expressed a desire for improved efficiency (i.e. fewer clicks ) to access HIE data, alternative placement of HIE links within existing systems, and improved navigation to exit HIE links. DISCUSSION/SIGNIFICANCE: Initial results reveal opportunities to improve the

HIE interface usability. Findings will inform design improvements to the interface and the creation of a toolkit to support the sustainable and scalable participation in HIE by community pharmacies.

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### **A single-arm pilot study of an adapted Serious Illness Care Program for older patients with acute myeloid leukemia and myelodysplastic syndromes\***

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OBJECTIVES/GOALS: We adapted the Serious Illness Care Program (SICP), an evidence-based intervention designed to promote early serious illness conversation, to be delivered via telehealth for older patients with acute myeloid leukemia and myelodysplastic syndromes. The purpose of this study is to assess the feasibility and usability of the adapted intervention. METHODS/STUDY POPULATION: We are conducting a single-arm pilot study of an adapted SICP that is delivered via telehealth for older patients with AML or MDS (>=60 years) and their caregivers (if available). The adapted SICP includes: 1) Patient preparation pamphlet: sent to patient prior to the visit with their clinician, 2) Geriatric assessment: completed by study team and provided to clinician prior to their visit with the patient, 3) A 30-60 minute telehealth visit with their primary oncologist or oncology advance practitioner, 4) Serious Illness Conversation Guide (SICG): used by the clinician during the visit to elicit patient values, 5) Family guide: provided to patient following their visit to help patient's share their values with their family, 6) Electronic medical record note template for clinicians to document their visit the patient. RESULTS/ANTICIPATED RESULTS: We hypothesize that the adapted SICP intervention will be feasible and usable. We will assess feasibility based on retention rate (percent of patients who consent and complete the visit); >80% is considered feasible. Usability will be assessed using the telehealth usability questionnaire; an average score of >5 is considered usable. Other measures include psychological health, advance care planning engagement, quality of life, and disease understanding. We plan to enroll 20 patients in this study. To date, 11 patients have consented to participate, 10 patients have scheduled SICP visits, 9 patients have completed their visits, 7 patients have completed post-intervention qualitative interviews, and 4 patients have completed post-intervention surveys. DISCUSSION/SIGNIFICANCE: The adapted telehealth-based SICP may promote early serious illness conversation, patient-reported outcomes, and end-of-life experience for older patients with AML and MDS. Results from this study will be used to inform development of clinical trials testing the impact of the adapted SICP on patient- and caregiver-reported outcomes.