

research universities and CTSA institutes, (c) Translational health science teams working on innovative translational science projects, and (d) Individual translational scientists can all contribute to ensuring that translational science fulfills its ethical obligations and social responsibilities. **DISCUSSION/SIGNIFICANCE:** The social responsibility of translational science can be fulfilled by centering its efforts to develop useful, sustainable, and relevant innovations. These criteria clarify how social responsibilities manifest in practice and can help funders shape and guide the next era of translational discovery.

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### **Tools to facilitate participant recruitment into research studies: Assessing early outcomes following implementation**

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**OBJECTIVES/GOALS:** The objective of this presentation is to describe different recruitment tools implemented by the Miami Clinical and Translational Science Institute (CTSI) to facilitate participant recruitment into research studies. **METHODS/STUDY POPULATION:** Participant recruitment is critical to the success of all research studies. In the effort of advancing clinical and translational science and to help investigators recruit volunteers for research studies, the University of Miami has two recruitment tools: 1) Consent to Contact (CTC), an opt-in research registry where University of Miami Health System patients are asked for permission to be contacted about studies matching their demographic and/or health profiles; and 2) UMiami HealthResearch.org (UMHR), implemented with the Michigan CTSA, a community-based registry for volunteers to sign up and be contacted about studies. Study investigators can use these tools once they have obtained IRB approval for their research. **RESULTS/ANTICIPATED RESULTS:** The CTC was launched in 2016; to date, over 130,000 patients have enrolled in CTC; 69 studies have been approved with over 75,000 patients' contact information released to study teams. UMHR was launched in 2020. To date, the site lists 237 studies. A total of 2,727 portal visitors have expressed interest in participating in specific studies. Study team members were successful in engaging interested participants, and enrolling participants into studies. Overall, teams reported a positive impact on recruitment. Data collection on utilization and satisfaction of these recruitments tools is ongoing. In addition, focus groups of study team members are being conducted to identify best practices for using these tools, and findings will be presented. **DISCUSSION/SIGNIFICANCE:** The CTC and UMHR recruitment tools have demonstrated positive impact in helping study teams identify potentially eligible research volunteers. The continued promotion of these tools at the University of Miami Health System and in the community will be crucial to the recruitment process and execution of research studies.

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### **Wnt signaling attenuates mechanotransduction and protects against wound occlusion-mediated abolishment of regeneration**

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**OBJECTIVES/GOALS:** Current clinical practice recommends occlusive dressings (e.g., film and hydrocolloid) for wounds with variable

regenerative capacities. However, clinical evidence suggests that occlusion may hinder regeneration. Our objective was to test the impact of occlusion on regeneration using animal models. **METHODS/STUDY POPULATION:** The murine wound-induced hair neogenesis (WIHN) is a well-established model of regeneration characterized by de novo hair follicle (HF) formation in the center of large full-thickness wounds. The quantity of neogenic HFs depends on the robustness of Wnt signaling. Optimal tissue mechanics is also required for WIHN. Utilizing the murine WIHN model, we tested the hypothesis that wound occlusion impedes regeneration. We determined how (i) the timing and duration of wound occlusion impacts WIHN, (ii) Wnt signaling influences the occlusion-induced effects on regeneration and (iii) occlusion alters the tissue mechanics of the wound, which establishes the morphogenetic field needed for WIHN. **RESULTS/ANTICIPATED RESULTS:** Occlusion completely eliminated WIHN. Only a brief period of occlusion between post-wound days 0-3 or 4-7 was sufficient to abrogate WIHN. Microarray and qPCR of open and occluded wounds demonstrated that occlusion promotes fibrosis by upregulating TGF- $\beta$ 2 and mechanotransduction, a mechanosensitive profibrotic pathway. Recruitment of these potent profibrotic pathways generated a symmetrically rigid wound incapable of de novo HF regeneration. Using transgenic animal models with enhanced Wnt signaling, we determined that the ligand-dependent Wnt signaling protected against the occlusion-induced inhibition of WIHN, as well as the occlusion-induced upregulation of both profibrotic pathways. **DISCUSSION/SIGNIFICANCE:** In animal models, occlusion promoted fibrosis at the expense of regeneration during acute wound healing. Augmented Wnt signaling protected against this effect. Occluding wounds may reduce regeneration. Further studies are warranted to validate these findings.

## **Education, Career Development and Workforce Development**

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### **A follow-up evaluation of an expanded good clinical practice online training course: The relevance of community engagement to health research study teams.**

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**OBJECTIVES/GOALS:** This study evaluates the impact of an updated and expanded training for social and behavioral health researchers. Participants' experience with training modules focused on community engagement is a focus of this evaluation as is the application of this training by participants in teams. **METHODS/STUDY POPULATION:** The Social and Behavioral Research training series for health researchers and team members was first created by faculty and staff of the Michigan Institute for Clinical and Health Research in 2018. This training was updated and expanded in 2021 with support from the National Institutes of Health to include new material regarding community-engaged health research as well as updates concerning technology and new federal regulations. Past participants of the training were invited to retake the training, as were clinical and translational researchers at University of

Michigan who were new to the training. Surveys were sent to all participants after completing the training and a focus group of research staff was conducted to identify how they utilized the training in support of their teams. **RESULTS/ANTICIPATED RESULTS:** It is anticipated that at least 100 individuals will participate in the evaluation of the Social and Behavioral Research training between October 2022 and February 2023. Data extracted from U-M's learning management platform will demonstrate how well participants performed on key knowledge checks embedded in the modules and how quickly they progressed through the sections of the training. These results will be compared to benchmarks derived from evaluations of the prior course which were conducted in 2018. A focus group of at least 10 individuals will demonstrate how health research staff utilized the training and associated resources to advance the scientific work of their study teams. **DISCUSSION/SIGNIFICANCE:** Comprehensive training programs for research best practices in social and behavioral health need to have tailored and up-to-date information for this group of researchers and staff. The results of this evaluation will demonstrate how this program contributed to the professional development of the health research workforce.

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### **A summer research experience to encourage URM students' participation in health sciences research**

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**OBJECTIVES/GOALS:** To increase the diversity of the health sciences research workforce, students from a variety of backgrounds must have the opportunity to participate in hands-on research experiences that highlight translating science to treating human disease. We developed a mentored translational research program for students from VCU and central Virginia HBCUs. **METHODS/STUDY POPULATION:** The Wright Regional Center for Clinical and Translational Science collaborated with the existing VCU Honors' Summer Undergraduate Research Program (HSURP) to expand their summer research experience to URM students from our partner HBCUs. For 10 weeks, students worked with faculty mentors to learn research techniques and engage in research projects. Students also participated in career development sessions like developing a CV and choosing graduate programs, and at the end of HSURP, they shared formal presentations of their research with peers and mentors. HSURP students were provided housing and a stipend, and mentors were provided a stipend. A post-program assessment gathered feedback on research and personal skills gained, the program's influence on their career goals, and overall experiences with HSURP. **RESULTS/ANTICIPATED RESULTS:** Nine students, 7 from VCU and 2 from Virginia State University participated in HSURP. Students were rising sophomores, juniors, and seniors, and 5 had previous research experience. Students worked on projects ranging from basic to social behavioral, community-placed research. All students rated the program as good or excellent. Post-program assessments showed all students believed they had a better understanding of ethical responsibilities of researchers, relevance of community-engaged and clinical/translational research, and interpreting journal articles after participating in the program. Four students reported they plan to continue working on their research projects during the academic year, and all students strongly agreed or agreed that HSURP prepared them for graduate or professional schools. **DISCUSSION/SIGNIFICANCE:** A program that combines hands-on research training and career

development opportunities provides a robust research foundation for URM students, which can increase their participation in the translational science workforce. Future program development will include preprogram training modules to better prepare students for research experiences.

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### **Access to Neurosurgical Research Opportunities and Gender-Concordant Mentorship in Various Countries**

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**OBJECTIVES/GOALS:** modonko1@jhmi.edu **METHODS/STUDY POPULATION:** Michelle Odonkor **RESULTS/ANTICIPATED RESULTS:** I accept **DISCUSSION/SIGNIFICANCE:** No, I do not want my poster published JCTS.

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### **Assessing Perceptions of Institutional Inclusivity on Burnout, Intent to Continue Training, and Perceived Stress among Underrepresented Postdoctoral Fellows and Early Career Faculty**

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**OBJECTIVES/GOALS:** The Building Up Study tests the effectiveness of an intervention aimed to diversify the workforce using a two-arm cluster randomized trial. We examined how underrepresented (UR) participants' perceptions of institutional inclusion affected burnout, intent to continue training, and perceived stress. **METHODS/STUDY POPULATION:** Building Up was conducted at 25 institutions with 225 UR post-doctoral fellow or early-career faculty participants. To assess perceived institutional inclusion, participants completed a 28-item survey in the first year of follow-up. We used descriptive statistics to describe age, race/ethnicity, and gender. We used exploratory factor analysis to extract factors or domains (survey questions that grouped together). We calculated mean domain scores and used correlations to assess associations between each domain and each dependent variable (burnout, intent to continue training, and perceived stress). Demographics, correlation coefficients and associated p-values are presented. **RESULTS/ANTICIPATED RESULTS:** 130 of 144 eligible participants completed all questions. The mean age was 39 years (SD = 6), 83% were female, 35% identified as non-Hispanic Black, and 36% identified as Hispanic. Greater inclusivity was associated with lower burnout across 5/6 identified domains: policies (-0.3, p **DISCUSSION/SIGNIFICANCE:** These findings suggest that institutional inclusion is associated with differences in capacity to function among UR postdocs and early-career faculty. Inclusivity of leaders was only associated with intent to continue training. Inclusion coupled with employee support and development are important for positive outcomes.