

highlights the continued need for expanded peer-to-peer support in academia.

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Independent Investigator Incubator (I3) yields external funding within three years for the majority of junior faculty

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ABSTRACT IMPACT: The Independent Investigator Incubator program provides 1:1 mentoring from ‘super-mentors’ to enhance junior faculty careers in research. **OBJECTIVES/GOALS:** In 2014, the Indiana University School of Medicine (IUSM) in collaboration with the Indiana CTSI established the Independent Investigator Incubator (I3) Program. The I3 Program is designed to provide 1:1 mentoring for new research faculty during the crucial early years of their careers. Our goal is to provide an overview of the I3 design and 5-year data. **METHODS/STUDY POPULATION:** The I3 Program employs a resource-sharing, centralized design that provides concentrated 1:1 mentorship from a senior faculty ‘super mentor’ as well as other resources, such as grant writing support. Unlike many mentorship programs, I3 mentors closely interact with the mentees within the School and are compensated for their efforts (5% full-time equivalency per mentee, max of 15%). The number of ‘super mentors’ has grown from 6 to 15 faculty over 5 years, and mentors typically serve 4 to 5 mentees. Mentee applications are accepted on a rolling enrollment basis. The I3 mentees represent a diverse group based on sex, ethnicity, terminal degree, academic track, and discipline. Mentors and mentees have annual reviews through the program. **RESULTS/ANTICIPATED RESULTS:** In five years, 110 mentees have enrolled in the I3 program. Upon entering, 53% had no external funding, 28% had internal funding, 12% had K-awards, 7% had R03/R21 awards. Over the first five years, 75% have received extramural funding. The median funding was \$340,000 with nearly a third of mentees securing grants > 1 million in direct costs. For mentees who joined the program in its first three years (n=59), the average time to a notable extramural grant (defined as a NIH or foundation grant > \$300K direct costs) was 2.2 years (median - 2.6 years). Nearly all mentees were satisfied with their mentor pairing based on the mentor’s ‘availability’ and ‘valuable feedback,’ and all mentees wanted the mentoring relationship to continue. **DISCUSSION/SIGNIFICANCE OF FINDINGS:** Since 2014, the I3 Program has had a positive impact on the careers of junior faculty at IUSM as determined by faculty satisfaction and funding metrics. Future focus areas will include developing criteria/models for graduating from the program to balance fiscal sustainability with mentee needs during their transition to mid-career.

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A Qualitative Cross-Sectional Study of Leadership in a Pandemic: What do Students Value?

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ABSTRACT IMPACT: This real-world study of what students value in crisis leadership fills an important gap in the literature and may inform future leadership development programs in undergraduate

medical education. **OBJECTIVES/GOALS:** Leadership training is of growing importance and prevalence in medical education. The COVID-19 pandemic provides a unique insight into the qualities students value in leaders. Our qualitative study examined these leadership themes and provides a grounding for future development of leadership programs. **METHODS/STUDY POPULATION:** A conventional qualitative approach was used in order to allow open expression of ideas related to leadership in a pandemic. The authors developed a 5 free-text question survey instrument aimed to uncover student perceptions of leadership both during the current pandemic and in crises in general. A participant pilot was performed in order to ensure readability and ease of understanding. We used thematic analysis to examine the content of the survey responses, and inductive coding of the responses allowed identification of emerging themes. Medical students at the University of Michigan were surveyed. **RESULTS/ANTICIPATED RESULTS:** In total, 162 students completed the survey. The demographic characteristics of participants are shown in Table 1. Median age was 25 years old (range, 22-39). There was good representation from the 4 classes in the medical school with 20-30% from each medical school class and 5% of dual degree students. Thematic analysis demonstrated that students value personal characteristics of excellence in their leaders with an orientation towards helping other people. Students believe that leaders must know how to interpret and use information and then that these leaders must be able to communicate expertly to guide organizations. The final theme that emerged is that effective leaders must commit to decisive action. **DISCUSSION/SIGNIFICANCE OF FINDINGS:** This study took place at a time of unprecedented crises and response examples were grounded in this real-world practice of leadership. These results and themes that emerged fill a critical gap and may facilitate future curriculum development for medical students and trainees.

Translational Science, Policy, & Health Outcomes Science

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Interactive mindfulness and dialogue sessions are integral components of research training

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ABSTRACT IMPACT: This work demonstrates the integration of interactive mindfulness and dialogue sessions in curricula is both desired by students and effective in conferring resilience, a protective factor that may aid in maintaining wellbeing of trainees interested in pursuing graduate studies in biomedical research and science. **OBJECTIVES/GOALS:** To support student futures in the field of biomedicine, Mayo Clinic Graduate School of Biological Sciences utilized digital platforms to deliver a summer research program in the summer of 2020. One goal of this program, in addition to

scholastic outcomes and research experience, was to support and improve the wellbeing of college student participants. **METHODS/STUDY POPULATION:** Following the cancellation of in-person summer research programs, students were invited to attend a digital Summer Foundations in Research program. The 4-week program included 4 small group dialogue sessions led by trained facilitators and 4 large group mindfulness seminars followed with 3 Q/A style small group sessions. Surveys were delivered on days 1, 27, and 3 months following the program. Wellbeing measures included Brief Resilience, Perceived Stress, and Satisfaction with Life Scales. Students were prompted to indicate how worthwhile they found course components and comment on why they rated each component the way they did. Wellbeing results were assessed using paired t-tests with Bonferroni correction for multiple comparisons. Thematic analysis was used to interpret qualitative results. **RESULTS/ANTICIPATED RESULTS:** Students improved across all wellbeing measures at the program conclusion, including resilience (mean difference(SE) pre- to post-program +0.22(0.06) $p=0.0007$), perceived stress ($-1.71(0.66)$ $p=0.0116$), and life satisfaction ($+1.57(0.52)$ $p=0.0037$). Gains in resilience were maintained 3 months out (pre-program to 3 month survey $+0.28(0.06)$ $p<0.0001$). To our surprise, mindfulness was the highest rated component of the research program with 85% (121/142) of students rating the mindfulness component 'extremely' or 'quite worthwhile.' At 3 months, 81% (74/91) reported continued use of one or more skills learned in the mindfulness sessions. Student comments endorsed the perceived importance of interactive mindfulness and dialogue sessions to the program and to careers in biomedical science and research. **DISCUSSION/SIGNIFICANCE OF FINDINGS:** Our results support the use of interactive mindfulness and dialogue programming as a participant supported, evidence-based approach to strengthen the resilience of undergraduate students pursuing careers in biomedicine. In the future, booster programming may be considered to maintain improvements in perceived stress and life satisfaction.

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Professional Development Core of the Hispanic Alliance for Clinical and Translational Research: a scientific productivity catalyst for underrepresented minorities (URM) in Clinical and Translational Research (CTR)

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ABSTRACT IMPACT: The Hispanic Alliance for Clinical and Translational Research Professional Development Core (PDC) will contribute to the improvement of the health of an increasing US Hispanic population, by supporting and training a new cadre of Hispanic/Latino CTR researchers and community leaders that understand this population's prevalent health needs. **OBJECTIVES/GOALS:** To use the Professional Development Core (PDC) of the Hispanic Alliance for Clinical and Translational Research (Alliance) as a hub that coordinates training, mentoring programs, and grant support to address the need for more underrepresented minorities (URM) in clinical and translational research and mentoring. **METHODS/STUDY POPULATION:** PDC will: (1). Coordinate and offer an effective educational program based for new and mid-career researchers to address the gaps in research competencies

on Hispanic/Latino health and healthcare through web-based asynchronous distance training, enhanced with face-to-face interactions. (2). Establish a robust mentoring program to address the mentoring gap for URM faculty by developing mentorship skills of faculty and researchers through a variety of resources, and offering protected time to mentor-mentee teams. (3). Design and implement a tailor-made curriculum to train scientists and community partners jointly, enabling them to carry out multidisciplinary research responsive to the Hispanic/Latino community health's needs. **RESULTS/ANTICIPATED RESULTS:** From 2010 to 2019 the PDC supported over 1,000 researchers and faculty and provided 52 activities over the 9 years. PDC-supported researchers submitted 56 proposals and 21 grants (37.5%) were awarded, for a total of \$2, 225,751.00, and to published 94 peer-review papers. We expect that through Alliance PDC will sponsor at least 20 new trainees/mentees in Clinical and Translational Research (CTR), 20 new certified mentors, a continuous support program, and an increase of 30% in the scientific productivity (e.g., grants submission and peer-reviewed publications) of the Hispanic CTRs in Puerto Rico and the establishment of long-term links with the Hispanic community in Puerto Rico and across the United States to address its health needs. **DISCUSSION/SIGNIFICANCE OF FINDINGS:** The PDC programs are significant in addressing the need for qualified researchers and mentors that understand, have the know-how, and are interested in addressing the health needs of a growing USA Hispanic medically underserved population.

Evaluation

Basic Science

22370

Mechanical Analysis of Posterior Spinal Fusion Assemblies Intended to Cross the Cervicothoracic Junction

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ABSTRACT IMPACT: A comparative evaluation of the mechanical properties of commonly used posterior spinal fusion assemblies will allow surgeons to choose an assembly based on desired properties. The results will better inform surgical decision making and may lead to improved patient outcomes. **OBJECTIVES/GOALS:** The objective of this study is to evaluate and compare the mechanical properties of three posterior spinal fusion assemblies commonly used to cross the cervicothoracic junction. Fusion success depends on immobilization of vertebrae. The results will better inform surgical decision making and may improve patient outcomes. **METHODS/STUDY POPULATION:** Three titanium alloy posterior spinal fusion assemblies intended to cross the cervicothoracic junction underwent static compressive bending, tensile bending, and torsion as described in ASTM F1717 to a torque of 2.5 Nm: 3.5mm rods (Assembly A), 3.5mm to 5.5mm dilating rods (Assembly B), and two 3.5mm rods connected to two 5.5mm rods (Assembly C). Five samples of each assembly were attached to ultrahigh molecular weight polyethylene blocks via multiaxial screws for testing. The distance from the axis of rotation to the point of attachment of the rod and cervical screw was used as the lever arm to calculate the force required to create the desired torque for each test: lever arm of 37mm, requiring 67.6N of force to generate 2.5Nm of torque. Force and displacement were recorded, and stiffness of each construct calculated. **RESULTS/ANTICIPATED RESULTS:** An ANOVA was performed