

training and enhance the career development of future generations of clinical and translational science researchers. **OBJECTIVES/GOALS:** In the field of clinical and translational science, the career trajectory and definition of Junior Investigators (JIs) vary greatly. This study aims to investigate JI characteristics, training, and support that contribute to career development at the University of California Los Angeles (UCLA) Clinical and Translation Science Institute (CTSI). **METHODS/STUDY POPULATION:** Every 18 months, the UCLA CTSI administers the Longitudinal Scientific Achievement Survey, which collects information on the predictors of scientific productivity and impact. In 2018, a special supplement was added to survey JIs who received CTSA support between 2011 and 2017 (n=305), including questions on knowledge, use, and effectiveness of CTSA specific support, barriers and facilitators of research, scientific productivity, and perceived scientific impact. A literary analysis was conducted to explore previous categorizations of JIs. The JIs in our sample conducted bench to bedside, population and policy research at our four partner sites. Bivariate and logistic regression analysis were conducted to examine the significant predictors of a new grant award attributed to the CTSA support/services. **RESULTS/ANTICIPATED RESULTS:** The survey response rate was 82% (n=250). Respondents include core voucher co-investigators, enrollees in the Training Program in Translational Science, and K- and K-to-R workshop participants. Bivariate results showed new grant awardees significantly more likely to have the following characteristics: physician scientist with an MD and PhD (47%), pilot grant awardee (42%), core voucher awardee (49%), four or more types of CTSI support (48%), prior affiliation with an NIH institute/center other than NCATS (42%), and reported at least one impact in science, health, and/or the community (72%). Multivariate results showed that investigators with a prior core voucher award, a prior NIH affiliation, or reported one or more impacts were the strongest predictors of obtaining a new grant (each with  $OR \geq 4.0$ ). **DISCUSSION/SIGNIFICANCE OF FINDINGS:** The most successful investigators consulted with NIH program officers and received feedback on their research plans and methods. Sufficient funding is crucially important to research progression. In our CTSA hub, vouchers and grants to initiate new studies or offset costs of existing research are consistent predictors of new extramural funding.

75202

### The New Normal: A Virtual Summer Foundations in Research

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**ABSTRACT IMPACT:** The Summer Foundation on Research gave undergraduate students the opportunity to do research despite the new normal - COVID-19 pandemic. **OBJECTIVES/GOALS:** The COVID-19 pandemic prevented domestic and international undergraduate students from attending in-person Mayo Clinic Summer Undergraduate Research Programs. Mayo decided to redesign this program as a virtual, 4-week Summer Foundations in Research

(SFIR) program. The goal of this program was to give students a scientific research experience. **METHODS/STUDY POPULATION:** The SFIR included an Introduction to Experimental Design, Dialogue methodology for communicating science, scientific mentoring, asynchronous online modules and a Resiliency component. Evaluations of the program were undertaken to gather feedback for program improvement and to assess the educational and mental health impact on participants. These evaluations asked student to rate each section of the program. Additionally, students were encouraged to provide their own comments and feedback. Statistical analysis of quantitative data was performed using excel. The qualitative data was studied using the identification, analysis and interpretation of patterns method per the student's comments on each of the questions addressed in the survey. **RESULTS/ANTICIPATED RESULTS:** These evaluations revealed positive outcomes across program components: 66% of the participants found the Resiliency component extremely worthwhile, 80% of participants liked the experimental design and 70% liked the educational courses. Qualitative data showed that mentor/mentee interactions were highly valued, and both participants and faculty suggested increasing the amount of time devoted to these interactions. Small group discussions gave students the opportunity to get to know other peers and encouraged further discussions about science and the community. Participants suggested minor improvements to the program, such as re-creating the online modules specific for undergraduate students, increasing 1-to-1 and small group's discussion, and increasing the length of the program. **DISCUSSION/SIGNIFICANCE OF FINDINGS:** Despite the quick pivot of the SFIR program, the re-design and new format supported the development of participants' resilience skills and training as future scientists during a particularly challenging time. Mayo is committed to continuing this program as an early step in a pathway to careers in research.

### Precision Medicine

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### Utilizing 3D Printing to Assist Planning of Percutaneous/Endovascular Procedures in Interventional Radiology

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**ABSTRACT IMPACT:** We plan to measure the impact of integrating 3D printed models in the planning process of endovascular procedures with the goal of making a case for using this resource more often. **OBJECTIVES/GOALS:** To measure the impact of using 3D printed models of patient specific anatomy for pre-procedure planning and as an intra-procedure reference. Impact will be measured by: a. Radiation exposure ; b. Contrast dosage; c. Fluoroscopy time; d. Time to procedural completion; e. 'Attempts at access,' when applicable to the procedure **METHODS/STUDY POPULATION:** Retrospective data will be collected on every patient that received one of prostate artery embolism, transjugular intrahepatic portosystemic shunt placement, or endovascular stent repair in the 3 years prior to the first prospective case. An attempt will be made to create a procedure planning model for every patient that receives one of the three procedures of interest in the 5 months following the first prospective case and those that have a model included in their procedure planning process will be included as part of the experimental group.

We anticipate this to not include every patient as there will need to be adequate time between the scheduling of the procedure and the procedure start time to be able to create a 3D model. This will make it impossible to include every patient. Our first prospective case was 11/12/20. RESULTS/ANTICIPATED RESULTS: At the time of submission we have very limited data and cannot confidently make a statement regarding results. We anticipate to measure a reduced time to procedural completion, and as a result, decreased radiation exposure, decreased contrast dosage, and decreased fluoroscopy time in the cases that included a 3D printed model in the planning of the procedures when compared to the procedures that did not include a model. DISCUSSION/SIGNIFICANCE OF FINDINGS: Few hospitals are using 3D printing as a regular tool that physicians can access as a part of their procedure preparation. If we are able to measure a significant impact on the efficiency and safety of procedures in interventional radiology, a much more robust argument can be made for including this technique in procedure planning with regularity.

## Team Science

11039

### Indiana CTSI High-School STEM Summer Research Program: Future opportunities from a 2020 virtual program

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ABSTRACT IMPACT: o The Indiana Clinical and Translational Sciences Institute K-12 STEM Outreach Program's pivoted to a virtual program in summer 2020 which yielded novel approaches that could be retained in future years to extend the reach/impact of our pipeline program. OBJECTIVES/GOALS: o Provide students with a meaningful and safe research experience during the COVID Pandemic. o Develop new modules and approaches that could be delivered virtually. o Engage students from communities that were not possible in previous years when in person meetings were required. METHODS/STUDY POPULATION: o The program has historically supported over 100 high school students per year in a summer research internship for the last 5 years. Students are placed with academic research mentors in various Schools and Departments across the IUPUI campus, and also with industry laboratories. o COVID-related restrictions required development of 100% virtual program. Key aspects of the virtual program included: cohort-based research mentor assignments with 1-4 mentees matched per research mentor, research projects that could be conducted virtually, heavy engagement of high-school teachers to facilitate the research experience with cohorts of mentees, a more rigorous virtual seminar series that included new modules such as COVID-specific programming and thus enhancing public education about COVID. RESULTS/ANTICIPATED RESULTS: o The program served 130 students in summer 2020. o We were able to recruit new faculty and industry mentors involved in data science research. As a result, we have now increased our mentor pool to serve more

students in the future. o Because student participation was virtual, we were able to accept students from further distances (up to 120 miles away) across the state. We were also able to accept local economically disadvantaged students that may have not been able to participate because of lack of reliable transportation. o A positive unanticipated outcome was that mentees relationships with the mentors was established virtually thus increasing the potential for students to remain engaged in their research. DISCUSSION/SIGNIFICANCE OF FINDINGS: o Adapting to a virtual platform provided research experience to high school students during a time when traditional approaches were not possible. Given some research experiences do not require in-person activities, this newly established model could be used moving forward to allow more statewide engagement in research experiences.

30315

### Successes in the COVID-19 Era: Novel Peer-Mentoring Series for Junior and Mid-Career Academic Faculty Across a University Campus

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ABSTRACT IMPACT: Partnering with academic offices to promote peer-mentoring in a virtual format is feasible, novel, and well-received across a major academic campus. Particularly during a pandemic, the success of this programmatic effort highlights the continued need for peer-to-peer support. OBJECTIVES/GOALS: To identify feasibility and key lessons learned from the planning and implementation of a virtual, interdisciplinary group peer-mentoring series, implemented broadly across an academic medical center in New York City. METHODS/STUDY POPULATION: ASPIRE! (Accountability & Safe-Space to Promote, Inspire, Recharge, & Empower one another!) is a group of seven interdisciplinary mid-career academic women faculty, who began collaborations as CTSA KL2 scholars. Our mission is to support interdisciplinary peer coaching for advancement of gender and racial equity among academic faculty and leaders. We designed and implemented a series of virtual symposia focused on essential struggles for clinicians and investigators at during the COVID-19 pandemic. Partnering with Columbia's CTSA, Office for Women and Diverse Faculty, and Office for Research, we invited leaders in psychiatry/psychology, early childhood education, organization/team management, and academic advancement as keynote speakers and facilitated peer-mentoring virtual breakouts. RESULTS/ANTICIPATED RESULTS: These efforts resulted in the completion of four separate 1.5-hour symposia, each with keynote speakers, discussions with academic leaders, and 30-minute breakout peer-mentoring sessions. Session topics included Calibrating Expectations, Helping Families Thrive, Managing Remote Teams, and Faces and Phases of Stress. Enrollment ranged from 30 to 70 participants per session. Participants reported: (1) Keynotes focused on actionable solutions stimulated the most productive conversations; (2) Peers from different disciplines and career stages provided a range of actionable recommendations tested within local contexts; (3) The greatest learning came from the peer-to-peer breakout group sessions. DISCUSSION/SIGNIFICANCE OF FINDINGS: Partnering with academic offices to promote interdisciplinary, peer-mentoring in a virtual format is feasible, novel, and can be well-received across a major academic campus during the COVID-19 pandemic. The success of this programmatic effort