

68.4% were female and 47.0% from underrepresented groups. The cohort spanned career stages, with 35.3% students, 34.2% postdocs, and 30.4% faculty, most of whom were at the junior level. Competency evaluations showed improvements in all core competencies of the course: (1) independently carrying out small-scale research improvements, (2) confidence collaborating with statisticians, bioinformaticians, and other genome science experts, (3) applying appropriate statistical methods for the analysis of genetics and genomics data, (4) accurately interpreting findings from genome research studies, (5) critiquing the internal/external validity of genome research studies, and (6) effectively engaging diverse populations and community stakeholders. **DISCUSSION/SIGNIFICANCE OF IMPACT:** CREiGS successfully provided inclusive, high-quality, genomic and statistical training, to diverse scientists enhancing their research capacity and methodologic competency. Findings from longer term evaluations examining the contribution of CREiGS to participants' genome science-related scholarly productivity are forthcoming.

210

Addressing burnout in radiologists: Causes, impact on patient care, and potential solutions

Pardaman Setia, Linette Penney, Vedant Shukla and Mikhail Lobo
University of Toronto

OBJECTIVES/GOALS: This study objective is to evaluate the prevalence and risk factors of burnout in practicing radiologists, with a focus on personal as well as systemic factors. It aims to identify and assess the existing strategies to mitigate burnout, enhance radiologist performance, and improve the quality of patient care. **METHODS/STUDY POPULATION:** The present study is a systematic review that summarizes existing literature on burnout in radiology, examining its prevalence, risk factors, and effect on diagnostic accuracy, decision-making, and job satisfaction. The review will synthesize validated evidence for emotional exhaustion, depersonalization, and professional fulfillment. The review discusses trends and solutions that have emerged from analysis of data within differing countries, subspecialties, and career stages, focusing on elevated risk of burnout in radiologists. It also assesses downstream effects on patient care quality such as missed diagnoses and increased medical errors. The review also discusses potential strategies for mitigating these negative effects on healthcare delivery. **RESULTS/ANTICIPATED RESULTS:** The anticipated results of this review are expected to reveal significant variability in burnout rates across radiology subspecialties and practice settings, with prevalence ranging from 33% to 88% (Fawzy et al., 2023). Emotional exhaustion and depersonalization emerge as the most reported symptoms as consistently highlighted in previous studies. Major contributors such as workload, administrative burdens, and technological isolation (e.g., remote work and reduced face-to-face interaction) are anticipated. Radiologists in high-demand areas like interventional radiology and those in private practice may show higher burnout levels than those in academic settings. Protective factors, like exercise, supportive environments, and work-life balance, are expected to reduce burnout levels. **DISCUSSION/SIGNIFICANCE OF IMPACT:** This study calls attention to the importance of addressing radiologist burnout as a key institutional priority. Early and effective interventions are essential for improving job satisfaction, reducing medical errors resulting in enhanced

patient care. Addressing burnout is crucial for maintaining a sustainable and effective radiology workflow.

211

Building a community of practice among research managers supporting mentorship research

Julie Hau¹, Jada Holmes², Krystina Karcz³ and Melissa McDaniels⁴

¹University of Wisconsin-Madison; ²Morehouse School of Medicine;

³University of Pittsburgh and ⁴University of Wisconsin-Madison

OBJECTIVES/GOALS: The National Research Mentoring Network Coordination Center (NRMN CC) received funding from NIH to create an Online Community of Practice (OCoP) for Research Managers (RM). These RM contributed to advancing the research on the science of mentorship in STEM. In a Proof of Concept, RM explored various aspects of their mentorship research support work. **METHODS/STUDY POPULATION:** An OCoP met 18 times across the 5-year grant to share experiences working to advance the science of mentorship in STEM. Topics, frequency, and length of meetings were selected based upon several needs assessments surveys from the RM community. RM were invited to join the OCoP based on their roles as the point people for administrative activities in research projects (e.g., finances, budgets, training, and project management). RM often supervised staff, collected data, monitored IRB protocol compliance, and conducted research. RM played a pivotal role in the gathering and sharing of common measures across the 11 U01 studies to allow for greater confidence in research findings on mentorship (McConnell, 2021). **RESULTS/ANTICIPATED RESULTS:** Our primary goal was to provide a supportive community for RM contributing to mentorship research and data sharing. The results from several needs assessments exemplified a request for this support from the community to engage in an OCoP focused on their professional development. Therefore, the OCoP served as a starting point to explore the duties, functions, roles and responsibilities of RM, and extended into providing professional development. Although the number of RM attending decreased as the grant entered the no-cost extension phase, a subgroup of RM expressed interest in continuing the OCoP to focus on dissemination of research findings, further supporting the need for this community. **DISCUSSION/SIGNIFICANCE OF IMPACT:** RM supported 11 research projects and contributed to the data collection for over 6,000 participants. Few opportunities exist to create an OCoP for large scale data collection on experiences with mentorship in STEM. RM were pivotal in their role with the NRMN to enhance the training and career development of individuals from diverse backgrounds.

212

HCTRECD's K to R Club: Adapted model to support research independence of Clinical and Translational Researchers in Puerto Rico

Carmen Buxo¹, Carmen J. Buxó-Martínez¹, Ruth Ríos-Motta¹, Brenda Delgado¹, Maria T. San Martín, Barbara Segarra-Vázquez¹, Karen G. Martínez-González¹ and Doris Rubio²

¹University of Puerto Rico-Medical Sciences Campus and

²University of Pittsburgh

OBJECTIVES/GOALS: A limited number of Hispanic researchers compete successfully for NIH career development and research

grants. We adapted an established K Club model from the University of Pittsburgh with high success rates to Hispanics in Puerto Rico (PR). The K to R Club's goal is to increase the successful submission of K- and R-type NIH grants in the HCTRECD Program. METHODS/STUDY POPULATION: K to R Club is an inviting environment that exposes scholars to established funded investigators in PR from all career stages. It creates a forum to discuss different grant mechanisms and explains the selection, submission, and review process. The Club promotes the right mentor selection and mentoring team. It facilitates networking with principal investigators local/external to share their success stories, career development experiences, and grant submission tips. It offers mock review sessions of sections of the grant proposal to provide feedback from invited established investigators during the grant writing process. The Club meets 1–2 times per month in-person or virtual for 1 hour and anonymous evaluations were submitted after each session. RESULTS/ANTICIPATED RESULTS: K to R Club 1st year had 11 sessions with 15 invited speakers. Sessions included: 1 Kickoff, 2 funding opportunities, 2 coaching, 7 successful stories of Diversity Supplement, and F99/K00, K22, K23, K99/R00, R01, and R21 awardees. The highest attendance was for the Kickoff (48). Evaluations response rates ranged from 15 to 62 with the highest participation from women (78% vs. 22% men). Most respondents were PhD (45%) and MD (29%). K to R Club sessions were rated as excellent (84%), 74% agreed that the sessions changed their knowledge very much, and 78% reported it changed their ability to apply for funding very much. Interest in submitting NIH supplements in 12 months was higher (68%) vs. 6 months (48%). Interest in requesting mock reviews for K or R grants in 6 months (91%) vs. 12 months (17%). DISCUSSION/SIGNIFICANCE OF IMPACT: The 1st year of the K to R Club had an active attendance and increased the interest in submission of NIH grants. We are working on strategies to increase evaluations' response rates to improve and address future session needs due to the low response rates recorded. Currently, the semester is full of mock review sessions for grant applications (4 Ks and 1 R01).

The Utah CTSI SLCSE-BEES Program: Boosting engagement through experiences in science

Niki Hack^{1,2}, Kellie E. Brown³, Julie H. Shakib³ and Anthea Letsou³

¹Salt Lake Center for Science Education; ²TBN, 2 SLCSE BEES students, Salt Lake Center for Science Education and ³University of Utah

OBJECTIVES/GOALS: The University of Utah (U of U) CTSI has partnered with the Salt Lake Center for Science Education (SLCSE), a Title I school serving grades 7–12. Goals of this partnership are to 1) bridge the gap between K12 classroom learning and real-world applications and 2) better prepare students from under-represented populations to enter the STEM workforce. METHODS/STUDY POPULATION: To cultivate science self-efficacy in grade 7–12 students, experiences included interviewing a scientist for 7th graders, model organism lab visits for 11th graders, and summer research internships for rising seniors. Additional engagements on the SLCSE campus included U of U guest speakers, U of U faculty

and student participation in afterschool STEM clubs, U of U graduate students' mentorship of high school science fair projects, and U of U faculty support in establishing a zebrafish lab for biology students. All students were surveyed at the start and end of the academic year using DEVISE evaluation tools developed by the Cornell Lab of Ornithology. Students participating in the summer internship program also completed the mentoring competency assessment before and after their ten-week internship experience. RESULTS/ANTICIPATED RESULTS: During the first year of a seven-year longitudinal study, 380 SLCSE students engaged in at least one science experience through the Utah CTSI-SLCSE partnership named BEES (Boosting Engagement through Experiences in Science). Pearson product-moment correlations were used in preliminary studies to examine relationships between experience type and student motivation and interest in STEM. Field trips to U of U STEM labs and of U graduate students' mentorship of high school science fair projects were significantly correlated with student motivation and interest, while the interview-a-scientist experience was significantly correlated with motivation only. The Utah CTSI-SLCSE BEES Program's impact on student STEM success continues to be assessed using surveys and student reflections. DISCUSSION/SIGNIFICANCE OF IMPACT: Access to science for underserved K–12 students is a critical issue in addressing educational equity and improving pathways into STEM fields. Many students attending SLCSE are low-income minority students with limited access to role models in STEM. The BEES partnership provides impactful opportunities for students to gain access to STEM.

214

Enhancing community-engaged research through the adaptation and integration of the Chicago Citizen Scientist Program

Celeste Charchalac-Zapeta¹, Caesar Thompson² and Jeni Hebert-Beirne²

¹University of Illinois Chicago and ²University of Illinois Chicago, Center for Clinical and Translational Science

OBJECTIVES/GOALS: Citizen Science (CS) recognizes the vital role that community members play in research, centering their unique lived experiences and perspectives across the research cycle. We aim to enhance community-engaged research (CEnR) by adapting a CS Program at the University of Illinois Chicago (UIC) Center for Clinical and Translational Science (CCTS). METHODS/STUDY POPULATION: The CS Program, launched in response to COVID-19, was designed/piloted for Chicago community members interested in research careers, developing evidence-based practice skills, and/or partnering with academic, community, and/or public health organizations. To inform program adaptation, we are conducting a landscape assessment, including 1) inventory/annotation of existing curricular materials, 2) review of peer-reviewed literature, 3) website extraction of existing CS programs' key components, and 4) interviewing key informants. An Advisory Board of prior CS instructors/alumni will guide curriculum adaptation, coordination, and fidelity. We will also identify strategic internal/external UIC organizational partnerships to collaborate on establishing, developing, and conducting the program. RESULTS/