

Supporting the Physician-Scientist Pipeline in Academic Medicine

Research Highlights

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Purpose: The development and support of physician-scientists is essential to achieving academic medicine's mission of education, research, and clinical service. Physician-scientists play a critical role in advancing medical knowledge through translation of laboratory findings to novel therapies and providing clinical insights throughout the translational spectrum. The shortage of experienced physician-scientists is a known barrier for medical students considering careers in clinical research 1. Physician-scientists are a vital component of effective medical student education through provision of research opportunities, mentoring of interested individuals, and by serving as role models for the clinical/translational research career pathway 2. With the many pressures on academic clinicians, the threat of the vanishing physician-scientist remains 3-5. To mitigate this decline, efforts to provide research opportunities for students can be enabled by fostering physician-scientists with programs to develop both research knowledge and skills.

Methods: To address this need, the University of South Carolina School of Medicine (UofSC SOM) Research Center for Transforming Health (RCTH) developed an Emerging Physician Scientist (EPS) faculty development program. The EPS program is a 15-month program that provides early career or transitioning physician-scientists training and mentorship in translational research. This program supports clinical faculty physician, fostering career development and research success. Key components include an educational curriculum, along with pilot project funding intended to inform a successful extramural grant application submission by the end of the program. The EPS application required faculty to submit project proposals, with an overview of career goals. To enhance the development of competitive proposals meaningful to SC, the EPS application emphasized interdisciplinary teams and prioritized applications that addressed areas of health disparities.

Results: Prior to implementing the EPS program, a needs assessment was conducted that identified development needs and gaps in the support of emerging physician-scientists. Fifty-two percent of UofSC SOM clinical departments expressed the need for translational and clinical research faculty development opportunities and support. The top departmental training needs included: grant writing and submissions, research project management, statistical support, connecting with mentors and collaborators, and mentor training. This information was used to develop the EPS program and curriculum. A call for proposals was launched in spring 2018, and the RCTH received applications from 62% of the UofSC SOM clinical departments. Application proposals were subject to peer review comprised of experienced researchers, both internal and external to UofSC. The EPS program requires scholars to attend monthly didactic training meetings and serve as mentors in our medical student research internship program. Participation in this program also provides scholars assistance during the critical data collection phase of their project, and further opportunities to enhance the pipeline of physician-scientists.

Discussion: Physician-scientists play a critical role in advancing medicine and the search for cures and treatments of the future. These individuals are essential to the success of academic medical centers. The decline in the physician-scientist and the dearth of experienced researchers and mentors is a detriment to the future of medical science and education. Establishing the EPS program, following the internal needs assessment, enabled wide support and interest. The program is designed for clinician scientists and is focused on bridging gaps that may limit individual success. The RCTH provides infrastructure for the program and is an example of the investment needed to support the physician-scientist pipeline. Ultimately, the success of clinical investigators who may be

under significant pressure for clinical productivity requires targeted and sustained institutional support. By supporting and fostering the culture of curiosity and physician-scientists, institutions secure future mentors and enhance the development of academic communities.

Significance: Developing physicians-scientists remains a challenge for academic medicine. The UofSC SOM EPS program addresses this need and can be a potential model for other academic institutions.