



Strengthening the Pipeline for Clinician-Scientists: The Pediatrician-Scientist Training and Development Program at Texas Children's Hospital

Audrea M. Burns, PhD, Jake A. Kushner, MD, Mark A. Ward, MD, Teri L. Turner, MD, MPH, MEd,
Mark W. Kline, MD, and Jordan S. Orange, MD, PhD

In 1979, Wyngaarden proclaimed the clinician-scientist an “endangered species.”¹ Decades later, despite strong national efforts, it remains challenging to secure durable futures for clinician-scientists.¹⁻³ Only 39% of self-identified physician-scientists attain K-series grants and only 25% garner R-level funding.^{4,5} The average age at R01 funding has increased from the mid-30s to the mid-40s, and fewer physicians report research as their primary activity.^{5,6} Physician-scientist challenges have particularly impacted pediatrics; in 2005, pediatric departments captured only 11.3% of National Institutes of Health (NIH) funding, 25% less than 10 years prior.⁷

Established and New Pipelines for Pediatrician-Scientists

Difficulties in pediatrician-scientist sustainability have led to the development of nationwide institutional and multi-institutional programs aimed at strengthening the physician-scientist pipeline.^{8,9} Although some have been quite successful (NIH- and pediatric societies-funded Pediatric-Scientist Development Program Scholars boast higher funding rates and are more likely to hold senior-level faculty positions¹⁰), much remains to be done to combat declines in pediatrician-scientist funding and hiring.

Development and Mission of Baylor College of Medicine (BCM) and Texas Children's Hospital's (TCH) Pediatrician-Scientist Training and Development Program

In 2013, established pediatric researchers in the Department of Pediatrics at BCM/TCH strategized the creation of a new program whose primary mission would be to provide a thriving sense of community and support for burgeoning pediatrician-scientists. Steering committee members carefully considered curriculum components from other success-

ful clinician-scholar training programs^{8,10} (Table; available at www.jpeds.com), as well as elements that had allowed them to successfully navigate their own personal career obstacles. Programmatic concepts were further refined through the Pediatric Leadership Development Program of the Association of Medical School Pediatric Department Chairs in which one of us was a fellow. Ultimately, we designed a multifaceted program that incorporates concrete opportunities for junior trainees to interact with successful senior faculty, alternative didactics, a 3-pronged mentoring approach, protected research time, engagement of all institutional pediatric specialty fellowship programs, and professional skills development. Here, we present our newly developed curriculum as one novel pathway toward sustainable pediatrician-scientist development.

The Pediatrician-Scientist Training and Development Program Curriculum

The Pediatrician-Scientist Training and Development Program (PSTDP) has 3 core components: the Parallel Education Program (PEP), Mentoring, and Academic Advancement Activities (Figure 1; available at www.jpeds.com). In addition, all residents commit to the American Board of Pediatrics Integrated (rather than Accelerated) Research Pathway, allowing them to perform research during the second and third year of residency while completing core pediatric clinical requirements without postponing engagement in research until fellowship (Figures 2 and 3; available at www.jpeds.com).

PEP

The PEP aims to provide the knowledge and perspective necessary for a seamless career flow through the academic pipeline. In addition to regular seminars, an annual PSTDP grand rounds, and an annual PSTDP retreat, there are two concrete monthly opportunities—the Pediatrician-Scientist Forum (PSF) and the Didactic Noon Conference (DNC)—for junior trainees to engage with and learn from successful

| | |
|-------|---|
| BCM | Baylor College of Medicine |
| DNC | Didactic Noon Conference |
| NIH | National Institutes of Health |
| PEP | Parallel Education Program |
| PSF | Pediatrician-Scientist Forum |
| PSTDP | Pediatrician-Scientist Training and Development Program |
| REM | Residency Educational Mentor |
| TCH | Texas Children's Hospital |

From the Department of Pediatrics, Baylor College of Medicine, Texas Children's Hospital, Houston, TX

Supported by Texas Children's Hospital. The authors declare no conflicts of interest.

0022-3476/\$ - see front matter. Copyright © 2016 Elsevier Inc. All rights reserved.
<http://dx.doi.org/10.1016/j.jpeds.2016.02.002>

senior faculty. Monthly DNC seminars cover a range of professional development topics including work-life balance, NIH navigation, mentorship, and funds management. Open to the entire BCM/TCH community, the evening PSF seminar allows residents to learn about the research and career paths of established pediatrician-scientists in a supportive, and engaging, but casual environment. Both the PSF and DNC aim to promote collegiality and strengthen the pediatrician-scientist community.

Scholarship Goals

To prepare for success in K-series grant funding, PSTDP scholars set concrete yearly publication goals: year 1, a scientifically oriented clinical case report; year 2, 1 published abstract, 1 scholarly review article, attendance at 1 national meeting, and active Pilot Grants Program engagement (each resident writes a focused grant and observes their own “study section”); and year 3, 1 peer-reviewed research publication, and completion of the candidate section of an NIH K-award grant (written individually, and also reviewed in a mock “study section”; [Figures 2 and 3](#)). Structured, allocated writing time and didactic lunchtime writing seminars promote successful completion of each of these goals in alignment with resident duty hours, as well as maintaining good “writing hygiene.”

Mentoring

Structured mentoring is critical to physician-scientist success.¹¹ The 3-pronged PSTDP mentorship approach recognizes that longitudinal, clinical, and research mentoring are each important facets of optimal pediatrician-scientist development. As such, each PSTDP resident is assigned a Residency Educational Mentor (REM), a Clinical Case Mentor, and a Primary Research Mentor.

The REM is a senior faculty-level steering committee member who commits to substantive, long-term mentoring throughout the course of the program and beyond. Most importantly, the REM serves as a role model for navigating and balancing an academic clinician career. The Clinical Case Mentor supports writing the pediatric level-1 clinical case report and advises toward creating a “clinical footprint” in a field of resident interest. The Primary Research Mentor provides direct guidance for the second and third year independent research project (and potentially beyond).

Each PSTDP resident also has the opportunity to hone their own mentoring skills by engaging in thoughtful pairings during ward months (with an interested MD/PhD student), and in the third year, as part of the Peer Mentoring Program, which pairs a PSTDP senior resident with an incoming intern. We anticipate that the “see one, do one” approach will set the stage for future mentoring relationships as PSTDP graduates transition to junior faculty.

Academic Advancement Activities

Professional development workshops are incorporated into each year of the PSTDP curriculum. Topics include scientific writing, biostatistical and study design analyses, research study design, and targeted grant writing workshops. All residents attend an annual orientation retreat and engage in the planning of an annual PSTDP Grand Rounds.

Program Evaluation and Sustainability

The PSTDP formally began in 2014 and is currently recruiting its second class. One objective of the PSTDP was to increase the number of MD-PhD residents at BCM/TCH and the first match provided 4 from leading US medical schools. PEP activities are in progress and widely attended by trainees of all levels and faculty, fostering a thriving culture of pediatrician-scientists. Resident progress and program curriculum are being tracked using a customized Oracle database that captures both short- and long-term progress and outcomes for each participant. Evaluation of the curriculum and program components will be assessed and reported back to the pediatric community with the hope that successful PSTDP components can be adopted by other medical schools and children’s hospitals.

Unlike NIH- and Pediatric Society-funded programs where there are only a few scholars per institution, the PSTDP at BCM/TCH has the potential to build a critical mass of pediatrician-scientists and derivative culture within a single institution, advancing child well-being through research not only nationally, but also locally. We expect PSTDP success to promote growth of the BCM/TCH Department of Pediatrics, catalyzing innovation and increasing institutional pediatric-designated funding.⁷ Recognizing this, TCH has provided significant support for PSTDP development and activities, providing a model for other institution-based programs.

The goal of the PSTDP at BCM/TCH is to refuel the pediatrician-scientist pipeline. Although academic pediatricians will continue to face considerable challenges in the current funding climate, we anticipate that focused mentorship, training, and support will stem the decline of this “endangered species.” Academic pediatricians are a critical link in the disease-based scientific chain of discovery. We encourage other pediatric institutions to consider how pediatric-scientists can not only survive but thrive to advance the health of children worldwide. ■

We would like to recognize the support and guidance provided by the AMSPDC Pediatric Leadership Development Program, David Perlmutter, MD, and the PSTDP Steering Committee Members.

Reprint requests: Jordan S. Orange, MD, PhD, Department of Pediatrics, Baylor College of Medicine, Texas Children’s Hospital, 1102 Bates St, FC330, Houston, TX 77030. E-mail: orange@bcm.edu

References available at www.jpeds.com

Download English Version:

<https://daneshyari.com/en/article/4164446>

Download Persian Version:

<https://daneshyari.com/article/4164446>

[Daneshyari.com](https://daneshyari.com)