Background

• Research (basic, clinical, translational) and the implementation of new diagnostic, theranostic and therapeutic approaches is essential for advances in medical care. A thriving climate of research innovation creates a dynamic forward-facing environment, enhancing prestige and patient referrals/consultations.
• Physician-Scientists are engaged in clinical care (MD, DO, DDS, DVM) and also independent biomedical research. Such “triple-threat” faculty play important roles in research, clinical and educational missions of the Academic Medical Center.
• Recognizing the importance of the Physician-Scientist Workforce (PSW), NIH has special grant programs aimed at supporting the pre-doctoral (MSTP) and junior faculty (K08) career phases. However, the crucial post-graduate (PGY)/post-doctoral training years are left up to chance.
• Attrition from the PSW pipeline may be particularly high during PGY years, due to lack of coordinated career advising and training structures to support continued forward progress in both clinical and research training.
• NIH efforts to expand K-supported training periods for junior physician-scientist faculty may be “too little, too late,” resulting in an average age to first R01 (the major independent investigator grant) of 44.3-45.1 years even for those that survive earlier stages of attrition.

Hypothesis

• The PGY training years represent a crucial period during which a targeted investment of resources will foster success of future physician-scientists.

References & Acknowledgments

4. Oury, T. Chu,* Tim D. Oury, Trevor Macpherson & George K. Michalopoulos
5. University of Pittsburgh School of Medicine, Pittsburgh, PA USA

Bridging the Gap

• Residency programs typically accommodate Physician-Scientists with research during the last year of training.
  • 5-7 year gap between PhD and continued research training as senior resident, fellow or junior faculty.
  • A 2-3 year post-doctoral fellowship after residency interrupts the solidification of clinical judgement from training to practice as an attending physician.
  • Lack of role models/mentors and defined timeline objectives leave the quality of research experiences largely to chance or last minute planning.

Results

From 2004-2014, we recruited 8 PIRRT trainees including 1 internal candidate.
• The median USMLE Step 1 score = 251, which compares favorably against our residency standard of >225 for “highly competitive” applicants.
• Ranked UPMC above Hopkins, UPenn, Brigham, WashU, U Wash, Columbia, MGH.
• One resident left the program for personal reasons.
• All of the 3 that have completed their training are tenure-stream Assistant/Associate Professors with clinical duties and protected research time (University of Kentucky, University of Pittsburgh and Stanford University).
• Each achieved independent funding (2 K08 awards, 2 PIs on P01/P50 projects, 5 foundation grants) in the first 1-2 years as faculty.

Impact and Satisfaction Survey (Dec 2014; 96% response rate)
• Responsiveness of Leadership
  • Clinical Training: 2/5, Research Training: 3/5, Overall PIRRT program: 3/5
  • Responsiveness of Training Support: 3/5
  • Impact of PIRRT on career path: 3/5

“The future of Physician Scientists” survey

Challenges & Opportunities

By developing and investing in PIRRT, we aim to:
1) Attract the highest quality Pathology residents to UPMC, and to
2) Prepare and transition them to faculty positions with protected research time and start-up support without the need to interrupt the clinical momentum by pursuing a separate post-doctoral fellowship.

Preliminary findings suggest that the underlying objectives for investing in PIRRT have thus far been met, although new threats have been emerging.
• Although the American Board of Pathology has recently joined Medicine, Pediatrics, Dermatology and Radiology in officially sanctioning a research track, based in part on information we submitted for our program, this endorsement comes with no financial support for either institution or trainee.
• Disincentives based on the need of clinical training programs to balance the needs of the individual against coverage needs of the overall program persist and will only get worse as financial changes facing academic medical centers adversely affect resources.
• Are there other solutions such as fundraising to endow a training program available to help support these efforts?

Leading medical centers are recognized not only for delivery of today’s care, but also for pushing the boundaries for tomorrow. Increasing threats and a diminishing pool of Physician-Scientists will provide a unique opportunity, if UPMC is positioned and recognized as a leader in Physician-Scientist career development, for increased leverage in recruiting and retaining such talent.

We are fortunate in Pittsburgh as both UPMC and SOM leadership recognize the importance of Physician-Scientists for international recognition as a premier medical center.

THE FUTURE OF PHYSICIAN-SCIENTIST HOUSESTAFF TRAINING: The UPMC-Pathology Experience
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