



Training the Next Generation of Sleep Scientists

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An important goal for all medical associations is to ensure a robust research infrastructure in order to develop better strategies to prevent and treat the diseases impacting our patients. Unfortunately, developing and maintaining the capacity to conduct the research needed to advance the practice of medicine is a challenge for all biomedical fields. The financial and personal challenges faced by those pursuing a career in academic medicine are considerable. Data from the Association of American Medical Colleges suggest 43% of new medical school faculty are no longer in academic medicine after 10 years.¹ The dropout rates are even higher for women and minorities.

For sleep medicine, this challenge is even more daunting due to the very limited number of new scientists and clinician/scientists entering our field. This is in part due to the relatively small size and multidisciplinary nature of our field that prevents the development of the critical mass needed for a vibrant research program at many institutions. As a result, mechanisms such as institutional training grants (T32 awards) in sleep and circadian medicine are relatively scarce. The development of sleep medicine as a separate clinical fellowship with no ability to “double dip” or count time already spent in pulmonary or other fellowships has increased the burden on trainees, making additional time for research training even more difficult to justify. A landmark report from the Institute of Medicine (IOM) in 2006 highlighted the critical paucity of sleep investigators in the training pipeline.² An editorial in *SLEEP* following the IOM report highlighted the crisis in the pipeline of investigators for sleep research and served as a call to arms for sleep professional societies such as the American Academy of Sleep Medicine (AASM) to help develop solutions.³

Recognizing the problems facing our field, members within the AASM proposed a program to retain early investigators to stay both in a research career and in the field of sleep and circadian medicine by providing mentorship on how to develop a successful academic research career in sleep. Responsive to this idea, in 2006 the AASM decided to fund a Young Investigator Research Forum (YIRF) as a partnership between the AASM and the National Center on Sleep Disorders Research (NCSDR) at the National Institutes of Health (NIH). The goal of this two-day forum was to identify trainees and junior faculty conducting sleep medicine research, particularly those coming from a clinical background, and provide them with intensive training in key areas vital to a successful career in academic research. The goals of this program were to foster the pursuit of clinical and translational research in sleep medicine, disseminate

vital information required for pursuing a successful career in research, serve as a primer on how to obtain grant funding, and provide an opportunity to network with peers and experts in the field, potentially establishing remote mentoring relationships.

Over time, the YIRF has developed into an annual event occurring each April in Bethesda, Maryland, to allow for close interactions with NCSDR and other NIH faculty. In addition to the NIH representatives, the faculty includes 9 active sleep researchers and AASM members, a mix of both M.D.s and Ph.D.s, who act as mentors for the event. Each year, 20 young investigators are selected through a competitive process to attend the event with all expenses covered by the AASM.

Based on participant feedback, the structure and agenda of the forum have steadily evolved. Sessions include presentations by faculty on their individual journeys to a successful research career in sleep, presentations by each of the participants of a grant idea for which they receive feedback, a series of didactic lectures on necessary skills for a research career, a panel session with program officers from many of the NIH institutes interested in sleep research who explain the priorities for their institute, and a no-holds-barred question and answer session with the faculty. The most popular component of the program is a mock grant review mimicking an actual NIH study section where young investigators learn what is needed for a successful grant application by critically reviewing sleep grants previously submitted to NIH. In addition, there is plenty of time allocated for informal networking.

Feedback from participants has been overwhelmingly positive regarding this AASM initiative. One hundred percent of attendees from the 2014 YIRF felt better or fully prepared to write a grant as a result of attending the forum, and 100% learned about new funding opportunities, including 80% learning about funding opportunities through the American Sleep Medicine Foundation (ASMF) for the first time.

Surveys completed this spring by graduates of the program from 2009 to 2013 suggest attendees have remained academically productive. More than half of the graduates report spending at least 50% of their time in research, while less than 2% reported no longer spending any time in research. In terms of peer-reviewed publications, 81% of graduates had published at least one paper since participating in the YIRF and 27% had published five or more papers. Seventy-three percent of graduates had submitted at least one grant application as principal investigator, and 50% had been successful in achieving grant funding. This includes 16% who have had three or more grants

funded, including one individual with eight funded grants! As a group, graduates have presented 500 abstracts, published 380 original science papers, and written over 100 reviews and editorials so far.

Whether the YIRF has contributed to the success of these young investigators in developing their research careers or simply selected those who were destined to do well is impossible to know for sure. However, given the unanimous positive feedback from attendees and the imperative to ensure an adequate supply of scientists committed to advancing sleep and circadian health, this program certainly seems a worthwhile investment. Fortunately, the AASM Board of Directors agrees with this assessment and has continued to support this program even through financially strained times. Funding for the YIRF was recently renewed for a tenth year. Interested young investigators can learn more about the program and how to apply at <http://www.aasmnet.org/younginvestigators.aspx>.

A lot has been accomplished over the past nine years, but much more work remains. Initiatives such as the YIRF and grant opportunities for young investigators through the ASMF remain vital lifelines to keep sleep research trainees on track to develop into productive scientists so that they can advance the goal of improving sleep medicine care for our patients.

CITATION

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DISCLOSURE STATEMENT

Dr. Patel has indicated no financial conflicts of interest.