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The American Thoracic Society Research Program: Twenty Years of Driving Discovery in Respiratory Medicine

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Twenty Years of Driving Discovery in Respiratory Medicine

The American Thoracic Society (ATS) is a professional medical society with origins in the early 1900s whose main mission is to accelerate global innovation in the advancement of respiratory health through multidisciplinary collaboration, education, and advocacy. A major component of its mission is to promote scientific discovery through research in pulmonary, critical care, and sleep disorders. To advance discovery, the organization established the ATS Research Program (ATSRP) in 2004. Since then, the ATSRP has supported studies in cellular and molecular biology, biochemistry, pharmacology, populations, translational science, and clinical investigations related to respiratory physiology and pathology. The program has had a remarkable record of successful outcomes defined by the impact, breadth, and diversity of research outcomes relevant to lung health funded through this mechanism and the subsequent success of investigators whose early careers were supported through the program.

Information included in the ATSRP database between 2004 and 2017 reveals a total of $19.5 million awarded by the ATS to 302 researchers (Figure 1). Selected areas of research supported by the program are listed in Table 1. The awardees were mostly early-stage women and men researchers working in academic centers in the United States (85.4%). There also have been a significant number of awardees who worked in international centers (14.6%), including over 30 international awardees from 17 countries. A review of awarded federal research funds in the National Institutes of Health (NIH) RePORTER database revealed that researchers supported early in their careers by the ATSRP subsequently attracted $885.4 million in NIH research funds. Furthermore, at least 60% of funded early-career investigators continued to NIH-funded careers, a remarkable figure that outpaced the percentage of NIH K awardees who go on to receive R-level funding. Importantly, data were not available for awards from other public or private sources (e.g., the U.S. Department of Defense, the U.S. Department of Veterans Affairs, biotechnology companies, the National Science Foundation, and other private foundations); however, anecdotal reports suggest that grant support from these sources was substantial. In addition, ATSRP funding was available to early-stage investigators who were not citizens or permanent U.S. residents, unlike federal early-career funding.

Considering the above, we believe that the ATSRP has produced tangible results for investigators, clinicians, patients, and global

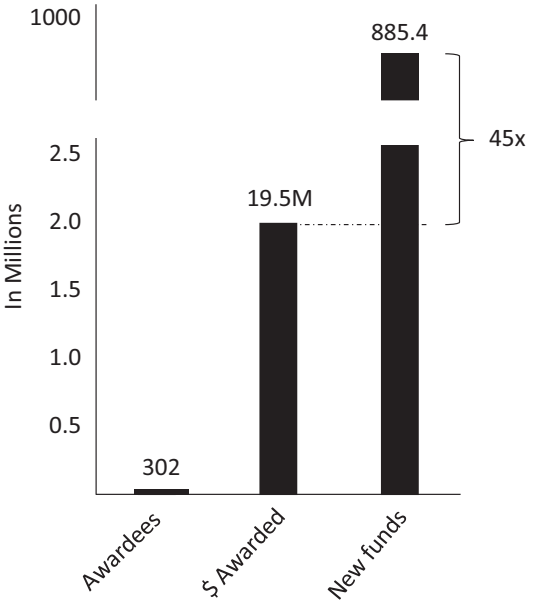

Figure 1. Return on investment for the American Thoracic Society Research Program (ATSRP), 2004–2017. The ATSRP funded 302 researchers within this period for a total investment of $19.5 million. A review of awarded federal research funds in the National Institutes of Health RePORTER database revealed that researchers supported by the ATSRP subsequently attracted $885.4 million in National Institutes of Health research funds.

respiratory health in general. With a conservative 45-fold return on monetary investment, the ATSRP is directly responsible for supporting advances in pulmonary, critical care, and sleep medicine that healthcare providers rely upon every day at the bedside; improvements in our understanding of pulmonary rehabilitation, stem cell applications to lung regeneration, therapeutics for pulmonary fibrosis, insights into acute lung injury, and better appreciation for sleep hygiene (to name but a few) have all arisen from work originally supported by this program.

Importantly, the ATSRP has helped launch and/or maintain the careers of many early-career investigators, supporting the preservation of the respiratory academic investigative pipeline so desperately needed for future healthcare advances. Moreover, during the past 20 years, we have witnessed shrinking pay lines and award sizes from various funders, whereas the ATSRP has instead grown in scope, highlighting the contribution of the ATSRP to the investigative pipeline. Many former and current academic, clinical, and industry leaders are past recipients of ATSRP awards, propelling successful careers with a single mission: to improve the lives of patients with

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Table 1. Research Areas Supported by the American Thoracic Society Research Program

Acute Lung Injury	Pulmonary Hypertension
Tissue regeneration	Bronchopulmonary dysplasia
Stem cells	Lung infection, TB
COPD	Sleep disorders
ILD/pulmonary fibrosis	Cystic fibrosis
Lung immunity	Lung microbiome
Sarcoidosis	Sepsis
Healthcare disparities	Animal models
Health economics	Allergy and autoimmunity
Health policy	Critical care/sepsis
Lung cancer	Extracellular matrices
Clinical trials	Cell–cell and cell–matrix interactions
Genetics	Epithelial-mesenchymal transformation
Lung development	Asthma
HIV and lung	Biomarkers of lung disease
Lung transplantation	Effects of tobacco on lung health
Cytokines	Oxidative stress
Lung inflammation	Primary ciliary dyskinesia
Environmental lung disease	Vascular disease

Definition of abbreviations: COPD = chronic obstructive pulmonary disease; ILD = interstitial lung disease; TB = tuberculosis.

pulmonary, critical care, and sleep disorders. In this regard, the ATSRP has provided a return on investment that cannot be easily quantified yet is vitally important for our field.

We gratefully acknowledge the scientific expertise of committees that review and rank ATSRP grant proposals. As members of the ATS Scientific Grant Review Committee (formerly called the Scientific Advisory Committee), volunteer peer reviewers spend a great deal of time and effort reading and reviewing grant proposals to ensure that the best scientific ideas are supported. This contribution has been invaluable for the success of the program. Similar invaluable support has been and continues to be entirely dependent on funds generated through philanthropic donations from ATS members and others and from partnerships with patient advocacy organizations and industry. Advancement of the ATS mission and indeed that of the ATSRP would not have been possible without these generous contributions.

In summary, the first 20 years of the ATSRP have been incredibly successful at advancing our understanding of disease biology and supporting the development of new approaches to diagnosing and treating pulmonary, critical care, and sleep disorders. The estimates presented do not take into account resources needed to staff the program, to support scientific review meetings, and to meet other expenses incurred in the management of the ATSRP, but these are small when considered against the outcomes described above. In fact, regardless of the metric used, the return on investment of the program has resulted in incalculable gains for these fields, whether measured in research dollars, careers launched, publications produced, or patients helped. This is remarkable, especially considering that research is crucial for the advancement of medicine. All of these gains were achieved by supporting a few hundred investigators. Imagine what could be accomplished with even more funding to support future generations of investigators. ■

Author disclosures are available with the text of this article at www.atsjournals.org.

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