The effect of receiving an award from the American Association for Thoracic Surgery Foundation

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ABSTRACT

Objective: This study’s objective was to evaluate the scholastic and career effects of receiving either the American Association for Thoracic Surgery (AATS) Foundation research scholarship or surgical investigator program.

Methods: AATS annual reports and recipient listings were used to generate the awardees. MEDLINE and SCOPUS were used to assess publications, citations, and H-Index for awardees. The National Institutes of Health (NIH) RePorter was used to collate NIH grant awarding to awardees. Publicly available institutional profiles were used to assess promotion status and leadership positions.

Results: Awardees of the research scholarship had a median of 4733 citations and a median H-Index of 33. The surgical investigator program recipients had a median of 1346 citations with a median H-Index of 17. Across both funding mechanisms, 45% secured subsequent NIH funding. Most awardees received an academic promotion, with 62% of the research scholarship awardees promoted to full professor and 37% of the surgical investigator program to associate professor. Approximately half (48%) of all awardees hold leadership positions, with most being a clinical director or division chief.

Conclusions: Receiving the AATS Foundation research scholarship or surgical investigator program positions early-career cardiothoracic surgeons for a promising future in academic surgery. (JTCVS Open 2022;10:282-9)

CENTRAL MESSAGE
Receiving either research grant from the AATS positions early cardiothoracic surgeons for an academic career through increased scholastic contribution, NIH grant funding, and leadership positions.

PERPECTIVE
Excelling in academic surgery requires balancing cardiothoracic surgery and research. The AATS Foundation provides 2 funding mechanisms for early career surgeons—the research scholarship and surgical investigator program. This study shows a substantial benefit in receiving either, with significant scholastic contributions and high NIH grant success rates, propelling one’s academic surgical career.

See Commentaries on pages 290 and 291.
Cardiothoracic (CT) surgery trainees might have a high degree of interest in academic surgery.\(^1\,^2\) Pursing academic surgery can afford the so-called “triple threat,” by which a surgeon excels in surgical practice, research, and education. However, achieving this distinction can be elusive.\(^3\) Placement and subsequent advancement through these tracks are not easy feats, with continual effort required in several disciplines. First and foremost, one must have surgical excellence, which alone necessitates a tremendous commitment of time and effort. Next, scholarly contributions are carefully measured. These take the form of publications, either in clinical, translational, or basic science, and grant funding. The decreasing pay line of national funding agencies and the essential requirements to be a proficient CT surgeon creates a challenging environment to secure grants. In fact, across all surgeons, less than 1% are funded\(^4\) alongside reported decreases in CT surgeon funding.\(^5\) Last, becoming a good educator often requires the onerous requirement of leadership positions, further requiring devoted time. Despite a finite amount of time to spread among these endeavors, these metrics are still the basis for climbing the academic ladder.\(^6\)

Founded in 1917, the American Association for Thoracic Surgery (AATS) is a leading organization whose mission is to cultivate the next generation of CT surgical leaders. This is accomplished through the continual effort of the AATS Foundation, a group within the AATS that serves as the vehicle to promote the next generation of leaders. The foundation has over 30 programs, with the 2 most prevalent ones being the AATS research scholarship and the AATS surgical investigator programs. Both grants aid in providing funding and mentorship for early-career CT surgeons. Although conceptually, these programs would enhance the recipients’ career in academic medicine, this has not been quantified to date. As such, in this study we aimed to examine the scholastic and career effect of receiving either grant from the AATS Foundation.

**METHODS**

**Awardee Population**

The AATS annual reports were searched to generate recipients for the AATS research scholarship and surgical investigator awardees (Figure 1). The research scholarship recipients date back to 1986, whereas the surgical investigator awards date back to 2014. All recipients were included throughout the analysis with 2020 being the last year studied. However, in instances in which a portion of awardees would not be included in the analysis (eg, surgeons in Canada in an evaluation of National Institutes of Health [NIH] funding), the initial awardee number was adjusted to provide better estimates. This is detailed when it occurs. No internal review board approval was required because all acquired data were publicly available. The institutional review board waived the need for written informed consent for publication.

**Analysis**

Publications and citations were counted for each recipient in a 4-year window from the time of grant awarding (eg, award dates of 1986 would have a window of 1986-1989). Similarly, citations and H-Index were counted throughout the awardee’s career up to the present day. To measure publications and citations, PubMed’s MEDLINE was used. This is an index repository of all biomedical research, containing over 27 million references. SCOPUS was used to assess the current H-Index of all awardees.

The H-Index is a measure of Scholastic Impact\(^7\) in which an H-Index of \(h\) means that an author has at least \(h\) publications, each with at least \(h\) citations. For example, an author with 5 articles with the following citations (100, 37, 12, 4, 1) would have an H-index of 4, meaning that 4 of the author’s articles have 4 citations or more. As the citations for the manuscript with 4 citations increases, so would the H-Index. SCOPUS is an extensive, linked database with over 80 million items that date back to the 1970s. This service collates author profiles and quickly calculates the current H-Index on the basis of their database.

Leadership and academic promotion were assessed via publicly accessible institutional profiles. Leadership was defined as an associate director or director of a clinical unit, as well as a division chief. CTSNet and department-specific profiles were used with the year of scholarship awarding to assess academic standing at that time. The highest level of academic standing available was used as the current promotion level for each awardee. Additionally, any mention of a directorship position or division chief on the current academic profile was recorded as a leadership position.

**RESULTS**

Throughout the AATS research scholarship award period, there were 42 recipients (Table 1). Awardees were more often male, with 4.8% being female. Almost a quarter (21.4%) were MD-PhDs surgeons, and the recipients of this grant held faculty positions at 27 unique universities. The surgical investigator program has been awarded to 24 individuals, 16.7% of whom are women. A fewer number of surgeons (8.3%) were MD-PhDs, and 79.2% of awards went to unique institutions. All awards were well distributed throughout the years with a median of 1 award per year (interquartile range [IQR], 1-2) and 4 awards per year (IQR, 3-5) for the research scholarship and surgical investigator program, respectively.

Scholarly contributions were measured in a 4-year window from the time of the grant award and throughout the awardee’s career. In the 4-year window, the research scholar had a median of 23 (IQR, 5-34) publications with a median of 364 (IQR, 56-563) citations (Table 2). There were 37 (IQR, 27-44) publications for the surgical investigator program with a median of 632 (IQR, 392-1306) citations. The research scholarship totaled a median of 4733 (IQR, 389-9050) citations with awardees having a median H-Index of 33 (IQR, 9-50) for the total career duration. There was a median of 1346 (430-2775) citations for the surgical investigator program with a median H-Index of 17 (IQR, 11-26). It is important to note that for the 4-year window for the research scholarship, SCOPUS does not keep records before 1992. As such, no 4-year window could