Review and Assessment of the American Society of Tropical Medicine and Hygiene Travel Awards Program, 1991–2010

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Abstract. During 1991–2010, 456 persons from 62 countries were provided financial support to attend the annual meeting of the American Society of Tropical Medicine and Hygiene. Winners came from 17 African, 16 Asia-Pacific, 14 Latin American and Caribbean, and 13 European and Middle Eastern countries, and from Canada and the United States. Virtually equal numbers of awards were offered to women and men. Winners were selected from U.S. academic centers (30%), foreign universities (26%), international centers, institutes or research units (30%), and approximately 5% from U.S. government agencies. Almost all winners (73 of 76, 96%) had scientific publications subsequent to receiving the travel award. Less than 10% of award winners continued their membership in the Society after their one-year complementary membership. Winners indicated that the travel awards program facilitated international exchange and fostered collaborations between Society members and international scientists.

INTRODUCTION

In 1991 in an effort to expand opportunities for members of the American Society of Tropical Medicine and Hygiene (ASTMH) to more fully interact with international partners and to engage international scientists in the activities of the Society, the Travel Award Program was begun to support participation of scientists and clinicians from the United States and abroad to present their original research findings at the Society's annual meeting. The objectives of the program were to foster collaborations between Society members and their international counterparts, to encourage greater participation by scientists and clinicians expert in tropical medicine and hygiene from around the world in the annual meeting of the Society, and to enhance Society membership beyond U.S. borders. Those selected for a Travel Award were provided support to attend the ASTMH annual meeting to present their original findings as either an oral or poster presentation, were introduced during the opening plenary session of the meeting and were recognized with a special ribbon on their name tags.

The 2010 Annual Meeting of the Society marked completion of two decades of support for the Travel Awards Program and offers an opportunity for review of the program and an assessment of its impact on persons supported and the Society. Although many professional organizations offer programs to support attendance at annual conferences, there has been remarkably little assessment of their impact on either persons supported or the sponsoring organization. We describe the scope and magnitude of the ASTMH Travel Awards Program, recognize the sponsors that have been critical to its success, and attempt to assess the impact of the program on the Society as reflected by award winners' continued membership in the Society and on persons supported as measured by their ongoing contributions to the scientific literature.

MATERIALS AND METHODS

Application and selection process. Announcements for the Travel Award Program were routinely made on the Society website, in publications and newsletters, and emailed to members prior to the submission deadline (typically April 1 of each year). Applicants originally applied by mail or by fax, but now all applications are submitted online. Each applicant provided a cover letter, an abstract of their presentation, abbreviated curriculum vitae showing educational status, work experiences and publications, and a brief application form indicating their scientific topic of interest and other information. Applications were grouped by general topic (malaria, virus diseases, clinical medicine, medical entomology, and others) and considered by a selection committee comprised of at least five senior scientist volunteers from the Society with expertise from across the fields of interest. A total of 32 ASTMH members served on the selection committee since the inception of the Travel Awards Program, and they are individually recognized in the acknowledgments below. Each reviewer was asked to consistently score every submission and to further designate as "must support" any application that they recognized as truly outstanding within their specific field of interest. Submissions for oral or poster presentations were given equal weight when scored. The selection committee quantitatively scored each application against five criteria: quality of the abstract, interest of the topic to the Society membership, opportunities for future collaboration, financial need as reflected by support from their parent organization or others, and quality of the application packet. In 2010, consideration of financial need was removed and the value of the quality of abstract score was doubled. Each reviewer was asked to consistently score all applications and thereby reduce the risk of bias because of differences in quantitative scores between reviewers. In 2010, more than 240 applications were received, making it impractical for each reviewer to score all applications and necessitating the division of the applicant pool into three groups, with one-third of the applications reviewed by separate panels of reviewers, and applications then ranked for each panel. Final selection of winners was based on analysis of three separate assessments: highest average score, designation as "must support," and how each reviewer ranked an application among all those that

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approximately 2000, reflecting the greater emphasis placed on clinical tropical medicine by the Society.

Funding. Essential financial support for the travel awards program was provided by several sponsoring organizations and the Society, as summarized in Table 1. For 2000–2010, expenses for the program ranged from \$27,228 (2003) to \$185,489 (2009), and a total of \$715,700 was invested in the program during this decade. Average cost per person supported during this period was \$2,386 and ranged from \$1,597 (2005) to \$3,228 (2010), trending to greater costs in the most recent years (Supplemental Appendix Table 1).

Countries participating. The number of applications seeking travel award support has grown each year as recognition of the program has expanded and past winners shared their experiences. A total of 244 persons applied for a travel award support during 2010, the largest number of applicants ever received. Included were applications from citizens of 59 countries: Algeria (1), Argentina (3), Australia (3), Austria (1), Bangladesh (7), Belgium (1), Benin (4), Brazil (9), Burkina Faso (5), Cameroon (4), Canada (6), China (7), Colombia (3), Costa Rica (1), Democratic Republic of Congo (2), Egypt (2), Eritrea (1), Ethiopia (1), France (4), Georgian Republic (1), Germany (4), Ghana (9), India (9), Indonesia (3), Inner Mongolia (1), Iran (1), Ireland (1), Italy (1), Jamaica (1), Kenya (18), South Korea (1), Malaysia (1), Mali (4), Morocco (1), Nepal (1), the Netherlands (1), New Zealand (1), Niger (1), Nigeria (7), Pakistan (1), Papua New Guinea (2), Peru (9), the Philippines (1), Senegal (9), Spain (1), Sri Lanka (2), Sudan (1), Sweden (1), Taiwan (1), Tanzania (3), Thailand (10), Trinidad and Tobago (2), Tunisia (1), Uganda (10), United Kingdom (4), United States (47), Vietnam (3), Zambia (3), and Zimbabwe (1). From this applicant pool, 38 (16% selection rate) winners from 18 countries including the United States were selected for support, as shown in Supplemental Appendix Table 1.

Over the entire history of the program, at least one travel award recipient was selected from 17 countries in Africa, 16 countries in Asia and the Pacific, 14 countries in Latin America and the Caribbean, 13 countries in Europe and the Middle East, and from Canada and the United States, giving a total of travel award winners from 62 countries (Figure 2). The greatest number of persons supported was from the United States (139 from 28 states). However, more than 10 awards were given to citizens of Australia (10), Brazil (22), Canada (21), Colombia (14), Kenya (37), Peru (21), Thailand (17), Uganda (16), and the United Kingdom (12). As shown in Figure 1 and Supplemental Appendix Table 1, many persons from many other countries were provided support.

Distribution by sex. Sex was not specifically recorded as part of the application process, but a review of names of past winners was able to identify the likely sex of 332 past winners.

TABLE 1

Sponsors of the American Society of Tropical Medicine and Hygiene Travel Awards Program and years of sponsorship, 1991–2010

Sponsor	Year
U.S. Army Medical Research and Development Command	1991–2001
Rockefeller Foundation	1991, 1994–1997
National Institute for Allergy and Infectious Diseases	1991, 1994–1998, 2000–2002, 2004–2008, 2010
National Geographic Society	2003
Bill and Melinda Gates Foundation	2007–2010

FIGURE 2. Region of citizenship for 456 Travel Award winners of the American Society of Tropical Medicine and Hygiene, 1991–2010.

Of these winners, there was no apparent sex bias and virtually equal awards were offered: 168 to women and 164 to men.

Topics presented. Of 448 award winners supported during 1991–2010, 36% offered presentations dealing in some aspect of malaria. Malaria was consistently the most frequent topic among all applications considered in each year, reflecting more than twice the number of any other topics represented. The summation of presentations on other parasitic diseases (e.g., amebiasis, Chagas disease) represented the next most common category, but as shown in Table 2, many pathogens and fields of interest were discussed by award winners.

Institutional associations. The parent organizations from which travel award winners were selected is shown in Table 3 and included 30% from academic centers within the United States, 26% from universities outside the United States, and 30% from international centers, institutes, or research units. Approximately 5% were selected from U.S. state and federal government agencies such as the National Institutes of Health, the Centers for Disease Control and Prevention, and various Department of Defense overseas laboratories. The remaining winners were from Ministries of Health, hospitals and medical centers, and other organizations. A total of 59 U.S. universities

TABLE 2

Award winners of the American Society of Tropical Medicine and Hygiene subject of presentation, 1991–2010*

Subject	No. (%)
Clinical tropical medicine	23 (5)
Medical entomology	49 (11)
Parasitic diseases	
Amebiasis	7 (2)
Chagas disease/trypanosomiasis	11 (2)
Filariasis	23 (5)
Leishmaniasis	30 (7)
Malaria	159 (36)
Schistosomiasis	32 (7)
Virus diseases (excluding HIV)	69 (15)
Other infectious organisms or diseases	
<i>Babesia</i> (1), <i>Bartonella</i> (1), <i>Cryptosporidium</i> (2), <i>Echinococcus</i> (2), <i>Ehrlichia</i> (1), <i>Leptospiriosis</i> (1), <i>Lyme disease</i> (2), <i>neurocysticercosis</i> (2), other parasites not specified (15), <i>Rickettsia</i> (3), other diseases including HIV, tuberculosis (15)	45 (10)
Total	448 (100)

* HIV = human immunodeficiency virus.

TABLE 3

Parent organizations of the American Society of Tropical Medicine and Hygiene Travel Award winners, 1991–2010

Organization	No. (%) awardees	No. (%) organizations
U.S. universities	139 (30)	61 (26)
International universities	117 (26)	66 (28)
International centers, institutes, units	135 (30)	72 (31)
U.S. state and government agencies (including Department of Defense overseas laboratories)	24 (5)	12 (5)
International ministries of health	22 (5)	14 (6)
Hospitals and medical centers	17 (4)	11 (4)
Total	454 (100)	236 (100)

had at least one winner; the largest number came from Johns Hopkins University (13), University of New Mexico (8), Yale and the University of Texas Medical Branch (7 each), and Tulane University (6). Internationally, the largest numbers came from Makerere University in Uganda (12), University of Toronto (9), and Mahidol University in Thailand and McGill University in Canada (5 each). A total of 236 organizations had at least one Travel Award winner.

Impact. To determine if award winners continued their scientific careers as indicated by authorship on subsequent peer-reviewed publications in fields relevant to the Society, a literature search by author was conducted for the years subsequent to their award for 76 persons. Nearly all award winners (73 of 76, 96%) had a record of publications in their field subsequent to receiving the travel award. Those not publishing were from the United States (2009), Kenya (2004), and Argentina (1993). Of those who published material, 47 (64%) had at least one publication in the AJTMH. Most of those who had published had at least one first author paper, and virtually all had evidence of collaborative efforts, as reflected by multi-author publications, often with international collaborators. Of the past award winners during 1991–2008 only 34 (34 of 358, 9%) persons continued their Society membership once their complementary one-year membership expired.

A total of 52 letters received from past winners of awards during 2004–2009 describing the impact of their attendance at the annual meeting were reviewed and summarized. Several common themes emerged in most of the letters: the importance of meeting international leaders in their particular field during the meeting; the beneficial experience of presenting their findings to a critical international audience; the chance to meet with future employers or explore post-doctoral fellowships; and most importantly, the opportunity to discuss future research strategies with colleagues. Several letters indicated that these informal discussions resulted in new collaborations with Society members. Many international winners benefited greatly from the opportunity to review new commercial products and books shown in the exhibits that were otherwise inaccessible to them. Several winners also competed for the Society's young investigator awards. Some also won recognition here, and many expressed their appreciation for the opportunity to present their results a second time.

Other than assessing continued publication and activities associated with the Society and review of the letters received after annual meetings, no systematic effort was made to determine the impact of receipt of a travel award on the careers of individual recipients. However, personal knowledge of several past winners provides anecdotal observations to the contin-

ued success of some. One early winner went on to a successful career in the World Health Organization Regional Office for Africa and upon retirement assumed a senior leadership role at a major university in Africa. Another early winner, now a professor and leader of an active research program in a national university, has seen two students themselves earn ASTMH Travel Award support. One past winner from the United States has risen to become President of the ASTMH.

DISCUSSION

The ASTMH has a long and distinguished history as the premier intellectual organization in the field of tropical medicine. Its membership has consistently been involved in medical and scientific research internationally and especially in those countries where tropical diseases are endemic. It is therefore not surprising that the Society would actively support and sustain a robust travel awards program that offers its membership the opportunity to interact with scientists and clinicians worldwide by sharing discoveries and exchanging insights during the annual meeting. Although travel awards are offered by many professional societies, there has been remarkably little assessment of the scope of these programs or their long-term impact on either persons awarded support or parent organization providing that support. Our experience from two decades of managing the travel awards program offers a unique insight regarding the scope and impact of the Society's investment. Through the generous support of several organizations, travel and expenses have been provided to 456 persons from 62 countries. It is impossible to differentiate the contribution of the travel award program to the growing interest in global health and tropical medicine. However, it is reasonable to assume that the program has facilitated important intellectual exchange, built partnerships and collaborations, enhanced the quality of medical research in the United States and abroad, and served to build important friendships that have had a lasting impact. It is difficult to quantify these intangible products, but few would argue that they are real.

We have attempted to assess some indicators of impact of the program and several conclusions are evident. It is clear that most of those provided support through the travel awards program have maintained their scientific careers, as shown by their continued publication in the scientific literature. The competitive nature of the travel awards program and the careful peer review of applicants by established scientists appears to have ensured that those selected for support were well-qualified and worthy of the investment. Importantly, independent of their country of citizenship, virtually all persons whose record was examined had published in the scientific literature, suggesting their personal commitment to a career in science in spite of highly variable local capacity and availability of resources. Although not systematically evaluated, it was apparent that many of those supported by travel awards subsequently had co-authored publications with Society members or other U.S. scientists, suggesting that the travel awards program may have contributed to fostering international collaborations. With nearly two-thirds of those examined having published at least one manuscript in the Society's Journal, it is also apparent that the travel award program may have contributed to the goal of enhancing international contributions to the Journal.

The goal of increasing Society membership does not appear to have been significantly impacted by the travel awards program. Although we lack an appropriate comparator control population, it is apparent from the relatively few persons who elected to sustain their Society membership after the complementary year that other strategies are needed to enhance membership. Perhaps the Society should review the costs and benefits of Society membership. Although the cost of membership for some international scientists may be prohibitive, neither award winners from the United States nor international partners continued their membership often, suggesting that independent of economic differences, Society membership was not highly valued. Participation in the annual meetings is clearly highly prized; membership in the Society appears to be less so.

Over the course of the past decades, global attention has been drawn to the importance of tropical medicine. Literally billions of dollars are now invested annually in the control and elimination of infectious diseases; human immunodeficiency virus infection, malaria, and tuberculosis are the highest priority targets. Recent attention to neglected tropical diseases has broadened the scope of global programs, and the expansion of vector-borne virus diseases such as dengue and West Nile virus fever continue to demonstrate the global importance of new, emerging and re-emerging infectious diseases. The American Society of Tropical Medicine and Hygiene is at the fore in addressing most of these topics, and as a result the Society's annual meeting continues to grow and flourish. Our evaluation of the Society's Travel Award Program tells the story of an effective outreach mechanism that has succeeded in engaging scientists worldwide in a scientific dialogue of these important global challenges. The relatively modest investment has helped to nurture scientific careers worldwide, contributed to the building of strong and lasting partnerships between scientists, and likely helped to strengthen the image of the United States as a trusted scientific partner. The lasting friendships and collaborations that are built through scientific collaborations offer important informal communications networks that help to enhance understanding between nations and help us all weather the ups and downs of political change worldwide.

The collapse of the former Soviet Union and the subsequent recognition of the possibility of uncontrolled access to nuclear and biological weapons of mass destruction led to the creation of the Cooperative Threat Reduction Program, implemented

jointly by the Department of State and the Department of Defense. This program played a critical role in reducing the threat of dissemination of these weapons, and the program is now under revision as it adjusts to meet the threat from terrorism around the world. A recent report from the U.S. National Academy of Sciences offers several recommendations on the way forward, including strong recognition of that "personal relationships and professional networks....contribute directly to our national security."¹ If scientists are working together, transparency is enhanced and the risk of nefarious activities is greatly reduced. The Society's Travel Awards program, with broad reach to virtually every country in the world, clearly plays an important role in continuing to build global partnerships that strive to address important challenges and thereby enhance global health and international security.

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Note: Supplemental table is available at www.ajtmh.org.

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