

# The Jahnigen Scholars Program: A Model for Faculty Career Development

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Over the next several decades, there will be unprecedented growth in the number of older adults in the United States. Such growth will require increasing numbers of medical providers with sufficient training in and commitment to geriatrics to meet the healthcare needs of a growing number of seniors, many of whom will be frail and disabled. The April 2008 Institute of Medicine report "Re-tooling for an Aging America: Building the Health Care Workforce" offers several recommendations to ameliorate what is fast becoming a healthcare provider crisis.<sup>1</sup> The "retooling" will require that all physicians and surgeons who see adult patients become knowledgeable about and experienced in providing ideal care to their older patients. The challenge in meeting this requirement is that there are few geriatrics experts among specialty physicians and surgeons to provide this needed education.

Of equal importance to improving the health of America's seniors is the creation of new knowledge to allow better care. This new knowledge must come through scientific advances. The United States needs programs to nurture the careers of physicians and surgeons who are dedicated to advancing the care provided to seniors. Although several supporting mechanisms, both governmental and nongovernmental, currently exist to fund young physician scientists, opportunities are constrained because of limited financial resources and restrictive granting mechanisms. This is especially true for the surgical specialties. A study comparing discipline-specific success rates for major career development awards from the National Institutes of Health

(NIH) is revealing. It has been demonstrated that success rates for award proposals submitted by clinical scientists from departments of surgery are consistently lower than those from other clinical departments such as medicine, psychiatry, pediatrics, and neurology (surgery 41.3% vs nonsurgery 46.7–57.5%  $P = .009$ ).<sup>2</sup> Furthermore, nonsurgeons were 2.5 times as likely to apply for any type of career development award as surgeons.<sup>2</sup> The largest difference in success rate was noted for the K23 program (mentored patient-oriented research), in which "non-surgical faculty received 80% more awards on a per proposal basis as compared with surgical faculty." This translates into a 14:1 ratio of nonsurgeon to surgeon physician scientists currently holding a K23 award.

Practicing surgeons cite the availability of role models and mentors and support for clinical and basic science research as major concerns in advancing their careers.<sup>3</sup> Not surprisingly, a majority of surgical faculty have cited competing clinical and administrative responsibilities as the reason behind their cessation of research activities.<sup>4</sup> Although non-NIH grants remain available and potentially more accessible (private industry, academic health centers, national medical societies), their limited availability and often low level of support limit their effectiveness.

The Dennis W. Jahnigen Career Development Scholars Program (JSP) seeks to address the urgent need to create a structure for developing leaders in geriatrics and academic surgery and related medical disciplines. Launched in 2002 by the American Geriatrics Society (AGS), with support and nurturing from the John A. Hartford Foundation and Atlantic Philanthropies, the JSP fosters the development of greatly needed scientists in the surgical and related medical disciplines. The JSP supports highly qualified young specialty faculty members to initiate and ultimately sustain a career in research and education in the geriatrics aspects of their discipline.

It is anticipated that Jahnigen scholars will advance the way each specialty discipline cares for older patients by forging and leading the effort in improving the knowledge base, educational activities, and clinical care within the discipline and by participating in efforts to increase understanding of the geriatric aspects of their specialties at the national and local level.

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The JSP, named after the late Dr. Dennis W. Jahnigen, is but one element of a broader initiative entitled “Increasing Geriatrics Expertise in Surgical and Medical Related Specialties (Geriatrics-for-Specialists Initiative—GSI).”<sup>5</sup> Dr. Jahnigen, a leading geriatrician in the United States, was the driving force behind the GSI. He visualized clearly the pressing need to infuse knowledge of geriatrics across all medical and surgical disciplines to ensure quality care for individual older patients.

This article reviews the progress of the JSP, a unique program in American medicine, describing its remarkable successes, as well as the challenges in sustaining it for the future.

## ORGANIZATION/METHODS

The JSP offers 2-year competitive career development awards for junior faculty members who propose to focus on the healthcare problems of seniors. Eligible specialties are anesthesiology, emergency medicine, general surgery, gynecology, ophthalmology, orthopedic surgery, otolaryngology, physical medicine and rehabilitation, thoracic surgery, and urology.

These specialties were chosen to participate in the GSI because of the estimated volume of services they provide to seniors and the size of their training programs. Other specialties could have been included, but because of the limited resources available to launch the program, the number of specialties had to be restricted.

To be eligible to apply for a Jahnigen Scholars Award (JSA), candidates must meet the following criteria:

- Be a physician who is a U.S. citizen or permanent resident
- Be certified or board-eligible to practice in one of the above targeted specialties
- Have a primary academic appointment in a U.S. institution in one of the specialty departments listed above
- Have completed training (residency or fellowship) within 10 years of starting the award. Exceptions to this restriction are considered for compelling reasons and must be reviewed and approved before application submission.

The award provides a total of \$100,000 per year for 2 years in support of research training for specialty faculty. Candidates are required to have an institutional match of at least 25% of the \$100,000 award (i.e., \$25,000 per year for 2 years), demonstrating commitment from the applicant’s university and department. The award money can be applied to a scholar’s salary or for research expenses. Most apply portions of the award to both.

## PEER REVIEW AND AWARDEE SELECTION

The Jahnigen Career Development Scholars Central Committee (JCC) (comprising five members of the AGS council for the Section on Surgical and Related Medical Specialties) oversees the peer review process and makes the final awardee selection. Initially, a team of two leaders from each specialty, a geriatrician, and a JCC member peer review scholars’ applications. Specialty reviewers are selected for their expertise in their respective fields and in writing successful grants. Applications are judged on a number of cri-

teria, including the general merit and anticipated effect of the proposed research, evidence of departmental and institutional support and strength of the research environment, and qualifications and commitment of the specialty and geriatrician mentors.

## RESULTS

Since its inception, the JSP has funded 72 awards encompassing all of the 10 eligible specialties (Table 1).

Surveillance of the progress of each scholar is substantial and interactive. The scholars submit 6-month progress reports, and their geriatrics and specialty mentors report annually. The Chair of the Jahnigen Central Committee and the geriatrician liaison responsible for the specialty review progress reports. Additionally, an external group of experts performs a thorough review of each cohort. The Jahnigen Awards External Evaluation Committee (JAEEC), established in 2004, is charged with evaluating the overall success of the program and identifying any problems in achieving its objectives. This external review panel is chosen based on leadership in academic medicine and research and on independence from the GSI. The JAEEC reviews each scholar’s performance approximately 6 months after completion of the 2-year grant. Measures of success include research quality and effect on the scholar’s home institution, ability to obtain independent research support, and scholarly productivity.

The scholars have been extraordinarily productive and influential in their fields. Examples of topics on which they have advanced knowledge through innovative research are listed in Table 2.

Measures of productivity such as publications, presentations, and grants for Jahnigen cohorts from 2002 to those completing their award in 2008 are outlined in Tables 3–5.

## Fostering Collaboration and Leadership Skill Building

The success of a grantee has, not surprisingly, been correlated with the amount of protected time available for scientific investigation, the supportive nature of the work

**Table 1. Total Number of Applications and Funded Scholars per Specialty**

Specialty	n	
	Total Applications 2002–2008	Funded 2002–2008
Anesthesiology	16	5
Emergency medicine	43	13
General surgery	35	16
Gynecology	12	4
Ophthalmology	23	9
Orthopedic surgery	14	5
Otolaryngology	9	5
Physical medicine and rehabilitation	17	7
Thoracic surgery	7	2
Urology	18	6
Total	194	72

**Table 2. Topics on Which Scholars Have Advanced Knowledge Through Innovative Research**

Specialty	Research Topic
Anesthesia	Effects of volatile anesthetics on the central nervous system <sup>6</sup>
Emergency medicine	Methods for screening older adults for occult conditions in the emergency department <sup>7</sup>
General surgery	Developing quality indicators for surgical procedures <sup>8</sup>
Gynecology	Relationship between sexuality and health <sup>9</sup>
Ophthalmology	Pathophysiology of macular degeneration <sup>10</sup>
Orthopedic surgery	Developing new functional measures for orthopedic procedures <sup>11</sup>
Otolaryngology	Relationship between dysphagia and quality of life <sup>12</sup>
Physical medicine and rehabilitation	Genesis of mobility impairment in elderly people <sup>13</sup>
Urology	Pathophysiology of urinary incontinence <sup>14</sup>

environment, and the availability of engaged mentors. Networking with one's peers is also critical to success because it provides a venue for collaboration, the vetting of working hypotheses, and opportunities for skill building. In this vein, the JSP encourages the participation of all scholars at the yearly section scientific meeting held concurrently with the annual meeting of the AGS. All scholars present their work at a poster session for members of the AGS council and at a public poster session that closes the meeting of the Section of Surgical and Related Medical Specialties. All scholars also attend an annual dinner with members of the AGS council, which has proven to be among the most highly rated networking opportunities. In addition, selective scholars make oral presentations at a joint session featuring Jahnigen and T. Franklin Williams Scholars (a sister award program administered by the Association of Specialty Professors that is available to generalists and subspecialists in internal medicine who focus their research in geriatrics). The Jahnigen and Williams Scholars also have the opportunity to participate in sessions at the AGS annual meeting led by representatives from various NIH institutes but mostly the National Institute on Aging (NIA). Finally, Jahnigen scholars are intimately involved in the planning of each GSI section scientific program and frequently serve as speakers.

**Table 3. Scholar Publications\***

Scholar Cohort	n		
	Articles	Book Chapters	Literature Reviews
2002	125	41	15
2003	88	16	3
2004	68	13	10
2005	41	10	6
2006	44	7	3
2007	33	4	7
Totals	399	91	44

\*Based on self-reporting by scholars.

**Table 4. Total Scholar Presentations for Selected Cohorts\***

Scholar Cohort	n	
	Presentations Accepted	Invited Presentations Presented
2005	130	37
2006	125	22
2007	92	14
Total	347	73

\*Based on self-reporting by scholars.

Although the annual meeting presents multiple networking opportunities, time constraints and competing sections often limit in-depth leadership training. To address this, a 2-day leadership training retreat was held in early 2008 in Ft. Lauderdale, Florida. A mock NIH study session led by NIA representatives provided scholars with valuable insights into the grant review process. The late Dr. Judah Folkman provided a remarkable and inspirational presentation on career development—his last public presentation just a few days before his sudden death. Additional sessions reviewed topics such as mentoring, balancing career and life, and keeping one's job during dry funding periods.

#### FUTURE DIRECTIONS

The success of the JSP, whether measured in number of scholars funded, productivity, subsequent research funding, or scientific innovation, has been undeniable. The credibility and prestige of the Jahnigen award has continued to rise among specialty societies from which the applicant pool is selected. The quality of proposals now rivals those found in other well-known federally funded career award programs, and the great majority of scholars (97%) have remained actively engaged in academic positions.

**Table 5. Breakdown According to Type of Institute**

Type of Institute	Awards, n
Aging	10
Cancer	2
Child health and human development	1
General medical sciences	1
Deafness and other communications disorders	1
Diabetes and digestive kidney diseases	2
Drug abuse	1
Eye	6
Heart, lung, and blood	2
Library of Medicine	1
Neurological disorders and stroke	2
Institute unknown	9
Total	38

The 38 National Institutes of Health awards described total more than \$16.8 million, and consist of 11 R-awards, 15 K-awards, and 12 other types of awards.

The JSP continues to evolve based on the experiences of individual scholars. The external evaluation process described earlier has been invaluable in reviewing these experiences and discerning patterns that directly affect the success of each project. Foremost among these “lessons learned” have been the critical role of mentorship and the frequency of mentor–scholar sessions. For optimum success, mentors must commit the appropriate time and be in close geographic proximity to the scholar, ideally in the same institution. Mentors must also possess the requisite knowledge and experience to serve as effective guides for their scholar. The ability of a mentor to proactively engage departmental leadership to ensure protected time is critical. Finally, mentors are critical in helping scholars stay on schedule in their career development.

Continued success of the JSP will ultimately depend on a stable funding source other than from foundations alone. The unwavering commitment to the program of the Hartford Foundation and Atlantic Philanthropies has demonstrated the potential for aging research across the 10 targeted surgical and related medical specialties. Collaboration with the NIH continues to be explored, with the goal of establishing a public–private partnership that brings together multiple institutes and foundations to support this important program. Although individual medical societies continue to offer some grant support for their members, awards are generally limited in scope and number. Although all of the societies that constitute the GSI have clearly embraced geriatrics, educational and research resources remain highly variable. Most academic centers, although currently providing a 25% match of the AGS award, are unlikely to contribute a significantly larger percentage in the future. Even now, some institutions cannot contribute as much as 25%. Finally, support from private industry has declined in recent years as the regulatory environment has become more restrictive.

The JSP has been a unique experience in American medicine. The bringing together of leaders from 10 specialty societies and geriatricians to share a common focus on improving the health care of seniors is remarkable, in and of itself. Furthermore, the AGS council of leaders has learned to trust and respect each of the other specialty leaders. Accordingly, they have fostered an environment of collaboration and sharing such that the cause of improving the health care of American seniors grows faster and more sustainably than if individual societies were working in isolation. Finally, this collaboration has fostered healthy competition, stimulating all participating societies to keep up with others in developing strategies to foster more focus on geriatrics in their societies. The remarkable accomplishments and continuing success of the Jahnigen scholars allows us to be optimistic about better health care for American seniors.

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