

# The Academic General Pediatrician: Is the Species Still Endangered?

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**ABSTRACT.** *Objective.* To determine the careers of graduates of the General Pediatrics Academic Development Program (GPADP) and the pediatricians from the Clinical Scholars (CS) Program 8 to 16 years after completion of their fellowship to assess the current state of the academic general pediatrician and to determine the current activities of divisions of General Pediatrics in US medical schools.

*Design.* Analysis of questionnaire data from former fellows of the two programs, who trained during the years 1978 to 1988, as well as of data from questionnaires to all divisions of General Pediatrics (or their equivalent) in all medical schools in the United States.

*Population.* Surveys were conducted of the 111 graduates of the GPADP and the 39 pediatricians from the CS program and all 127 US medical schools.

*Results.* Of the 111 GPADP graduates, 101 were located, and 85 completed the questionnaire. Of 39 CS graduates, 36 were located, of whom 27 completed the questionnaire. Similarities were found between the two groups in percent being in academic positions (74%, GPADP vs 70.4%, CS), percent having achieved tenure (17.8%, GPADP vs 14.3%, CS), and percent of time spent in research (17%, GPADP vs 25%, CS). Considerable differences, however, were found in percent of time spent in direct patient care (35.7% time for GPADP and only 17.8% time for CS) and in direct teaching (25.1% time for GPADP and only 17.6% time for CS). The mean number of articles published was greater among CS professionals (21.4 vs 14 for GPADP, but not statistically significant), as was the mean number of research grants (6.75 by CS vs 4.02 by GPADP). The GPADP fellows had obtained more education grants and more service grants. Both groups were concerned about the lack of time and support for research. Few General Pediatrics divisions had ongoing academic fellowship programs.

The current number of new fellows by divisions of General Pediatrics who are educated to do research is small. Only 30 related programs exist in all the medical schools in the United States. However, large divisions of General Pediatrics, responsible for large teaching and clinical service programs, are now in place in the majority of medical schools. This represents progress since 1978, when few generalists were in full-time academia.

*Conclusion.* More than two thirds of both the GPADP graduates and CS professionals are now in academic departments. They have had modest success in obtaining grants, publishing articles, and achieving ten-

ure, but large teaching and service demands and lack of research funds have made it difficult for both groups to be as productive in research as originally hoped. The field of Academic General Pediatrics now is established. It is the responsibility of graduates of these and similar programs to produce creative research and expand fellowship programs, as well as to do good clinical care, if a vigorous field of Academic General Pediatrics is to be achieved. *Pediatrics* 1999;104:137-142; *General Pediatrics, Academic Pediatrics, pediatrics, fellowship, Clinical Scholars, research, Academic General Pediatrics*.

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ABBREVIATIONS. GPADP, General Pediatrics Academic Development Program; CS, Clinical Scholars; OPD, outpatient department.

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In 1990, one of the authors (R.J.H.) reported on a 10-year project to prepare general pediatricians for a career in academic medicine.<sup>1</sup> The goals of the program were "to improve the health of children and youth by producing General Pediatrics faculty who would conduct exciting research and develop new methods of patient care to deal with the major health problems of children seen in the out-of-hospital practice of pediatrics."<sup>1</sup> "In 1978 when this program began, few faculty concentrated their research and clinical expertise on these common child health problems. . . "<sup>1</sup> The General Pediatrics Academic Development Program (GPADP) was designed to produce faculty who would have sophisticated research skills, especially in epidemiology and behavioral science. From 1978 to 1988, 111 pediatricians participated in a 2-year fellowship program at one of six institutions that had competed successfully for the award from The Robert Wood Johnson Foundation. The program consisted of formal course work in epidemiology and biostatistics (some took an MPH degree) and limited clinical and teaching responsibilities to allow a major commitment to carrying out one or more research projects, from planning to completing and presenting and/or publishing the research results. The 1988 survey of all these former fellows as well as of the departments of pediatrics in the United States assessed the status of the field of Academic General Pediatrics as well as the careers of these fellows. At that time, two thirds of the fellows were in academic positions, but their research and publication records were modest, which, at that time, could have been attributable to the short time in academic positions; in 1988, some had just completed the fellowship. It was apparent that a longer

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follow-up would be necessary to determine their career trajectories and productivity.

## FOLLOW-UP STUDY OF FELLOWS

### Program Description and Methods

The Robert Wood Johnson Foundation funded a follow-up study that was conducted in 1996. By then, the graduates were from 8 to 16 years out of fellowship training and would be expected to be reasonably well launched on their careers. We wanted a comparison group of pediatricians from other fellowship training programs and would have liked to compare our cohort of academic generalists with pediatricians who had completed traditional pediatric fellowships in subspecialty areas. However, no national cohort of entrants into these fellowships existed. Dr E. McCabe, University of California Los Angeles, estimated that approximately 50% of fellows in subspecialty pediatrics end up in academic positions (personal communication, 1997). For a comparison group, we elected to survey The Robert Wood Johnson Foundation-supported Clinical Scholars (CS)—pediatricians who were in fellowship training during the same 1978 through 1988 period and thus would have the same amount of time since that training to achieve career productivity. The goals of the CS program were directed more to training in health services research and the health care delivery system; the GPADP focused on clinical investigation of common health problems among children. There was a good deal of overlap between the programs, however. Both were 2-year programs after completion of a full residency program, of similar course work in epidemiology and biostatistics, and with one or more original research projects. The majority of CS professionals were from internal medicine and other disciplines. We surveyed only those who were pediatricians. It would have been instructive to have surveyed fellows who completed traditional or “patched together” ambulatory fellowships, but no such list exists. In both the 1988 and 1996 studies, we also surveyed all the pediatric departments in the United States to determine the status and role of their divisions of general or ambulatory pediatrics today.

In this follow-up study, questionnaires similar to those used in 1988 were sent to all 111 Academic General Pediatrics fellows who had completed the program during those years, as well as to all 39 pediatric CS professionals from the same period, and all 127 medical school pediatric departments asking for data from the current year, 1996. Several attempts were made to obtain completed questionnaires from the pediatrician participants of both groups as well as from the pediatric departments. The project directors and alumni offices of the departments were contacted, as were former fellows themselves, to ask about the whereabouts of their colleagues. Membership lists of several medical societies (American Academy of Pediatrics, Ambulatory Pediatric Association, American Medical Association, Society for Pediatric Research, and

American Pediatric Society) and the *Directory of Medical Specialists* were searched to locate those missing or nonresponders. Despite extensive efforts to find all the fellows, we were surprised at the number we could not locate. One likely reason is the large number of women involved whose last name may have changed as a result of marriage. Other possible reasons include those in practice who may have felt that they had not followed the original intent of the Program to prepare them for academic careers. The slightly higher nonresponse rate of the CS professionals possibly is attributable to some pursuing quite different careers outside of pediatrics and not being known personally to us.

## RESULTS

Of the 111 GPADP graduates, 101 were located, and 85 completed the follow-up questionnaire (84% of responders). For the pediatric CS group, 36 of a total of 39 were located, and 27 completed the questionnaire (75% of responders). Because both programs were directed to prepare pediatricians for academic or policy careers, the first question we asked them was their current position. Table 1 indicates that the majority and a nearly equal percent of graduates of both programs were in academic careers (74.1%, GPADP vs 70.4% m CS); of these, nearly an equal percent were full-time (85.7%, GPADP vs 89.5%, CS). A comparable percent of each group had achieved tenure (17.8%, GPADP vs 14.3%, CS) or were on a tenure track (17.8%, GPADP vs 14.3%, CS).

Considerable differences between the two groups, however, were found in certain areas. A larger percentage of CS professionals had joint appointments in a second department (56.5%, CS vs 28.8%, GPADP;  $p < .02$ ), usually in public health or preventive medicine. A larger percentage of GPADP fellows were in clinical practice.

These differences reflect the different career patterns of these two groups of pediatricians. The GPADP was designed to produce pediatricians who would find a niche in pediatric departments; the CS program, although it bears the word clinical, was designed to produce physicians who would emphasize health services or policy research and find positions in public agencies or departments of preventive medicine and public health as well as in pediatric departments. Questionnaire results indicated that to some degree, these different goals had been achieved. The GPADP former fellows were more involved in patient care (35.7% of their time vs only 17.8% for CS professionals) and teaching (GPADP, 25.1% vs CS, 17.6% of time) and spent

**TABLE 1.** Current Positions of Former Fellows—Results of Survey Questionnaire

Type	GPADP (%)	CS (%)
Academic	63 (74.1)	19 (70.4)
Practice*	15 (17.6)	1 (3.7)
Other*	7 (8.2)	7 (25.9)
Total	85	27

\*  $p < .02$ .

less time in research and administration (Fig 1). Reviewing the time spent somewhat differently (ie, not percent of time but percent who spent any time), both groups had major administrative responsibilities for teaching (52.4%, GPADP vs 42.3%, CS), specifically in pediatric residency education (67.5%, GPADP vs 50%, CS), and medical student education (41%, GPADP vs 42%, CS). But more CS professionals had major involvement in fellowship programs (40%, CS vs 21%, GPADP). As

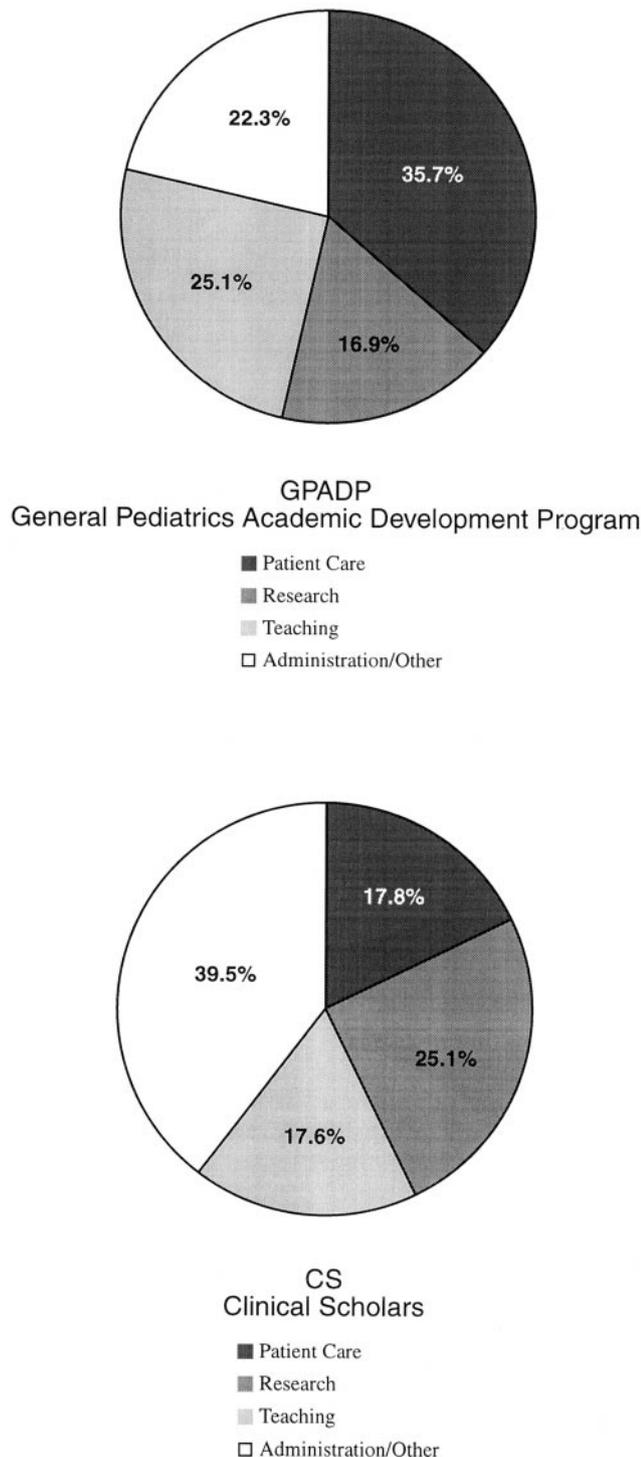
another measure of time distribution, direct teaching involved a greater percent of the academic generalists' time (40% of GPADP spent >25% in this area vs only 22% for CS). CS professionals were able to spend more time in research (44% spent more than 25% of their time in research compared with only 27% of the GPADP fellows).

The goal of the GPADP was to equip fellows to do research and to find positions where they could spend at least 50% of their time doing research. Whether 50% is a correct or achievable percent of time to do good research is debatable, but that was the figure sought by the National Advisory Committee of the Program. According to our survey, only 5% are able to do this today. These data show how far from this goal is the reality, attributable in part to the considerable amount of time spent in direct patient care. It would be useful if similar data were available for faculty in the pediatric subspecialties.

### Academic Achievement

Academic success is governed by articles published in peer-reviewed journals, grants received, membership in national academic societies, teaching, visiting professorships, and ultimately, achievement of tenure. Clearly, teaching is the major activity of Academic General Pediatricians. It would be helpful if objective measures of teaching effectiveness were available comparable to articles published and research grants received. Many of the institutions have their own methods of evaluating teaching effectiveness, and many of the Academic General Pediatricians are on a teaching-administrative track. But these tracks and criteria vary so from institution to institution that we did not attempt to assess teaching effectiveness by our questionnaire and relied on the more objective measure of teaching grants received. It still remains, for better or worse, that most promotions, especially if a faculty member is on a tenure track, depend on research grants and research publications as the major criteria for success.

This fact of academic life is behind the goal of The Foundation and of the national advisory committee of focusing this fellowship on preparing General Pediatric faculty to conduct research—a skill generally not emphasized in the past by such faculty. Eleven percent of both groups had no published articles, but the mean number of papers published per fellow was higher (but not significantly so) among CS professionals (21.4 vs 14 GPADP) (Table 2), as were mean number of research grants (CS, 6.75 vs GPADP, 4.03). There was a significant correlation, as might be expected, between time since finishing the fellowship and number of articles published ( $p < .03$ ). Table 3 indicates the range of amount of research grants received by both groups. Greater than 50% of both groups had no research grants. It would be advantageous if we had been able to judge the quality of the research as to whether it led to significant improvement in the health of children, a goal of the program, but it would be difficult to reach any consensus on this point, important as it is. Although we asked for a



**Fig 1.** Percent of time spent by GPADP and CS in patient care, research, teaching, and administration/other.

**TABLE 2.** Number and Percent by Group of Articles Published—Results of Survey Questionnaire

Number	GPADP (%)	CS (%)	Total
1 to 5	24 (31.6)	9 (37.5)	33 (33.0)
6 to 10	11 (14.5)	3 (12.5)	14 (14.0)
11 to 25	29 (38.2)	6 (25.0)	35 (35.0)
26 to 147	12 (15.8)	6 (25.0)	18 (18.0)
Mean per fellow who published*	14	21.42	27

\* *p* indicates not significant.

**TABLE 3.** Number of Former Fellows Who Received Research Grants, by Size of Grant—Results of Survey Questionnaire

Amount	Number of Grants	
	GPADP (%)	CS (%)
<\$100 000	22 (48.9)	1 (11.1)
\$100 001 to \$500 000	10 (22.2)	2 (22.2)
\$500 001 to \$1 million	4 (8.9)	1 (11.1)
\$1 million to \$16 million	9 (20.0)	5 (55.6)
<i>n</i> =	45	9

complete curriculum vitae, it is beyond the scope of this article to judge the impact of the research on the health of children.

The GPADP fellows received more clinical service and educational grants, and of greater size (Table 4). Membership in academic pediatric societies was somewhat greater for GPADP fellows, but not significantly so; the GPADP fellows and CS professionals received a comparable number of visiting professorships (mean of 1.45 per GPADP vs 1.375 per CS) as a measure of academic visibility.

### Satisfactions and Problems

We asked each group about the major areas of satisfaction with their careers. As Table 5 indicates, more academic generalists received satisfaction from teaching, patient care, writing, time spent in professional organizations, and academic advancement than did CS professionals and slightly less from research and policy activities. Some anecdotes appended to the questionnaires gave some indication of the value of the fellowship. They include, "I would not be in academics today. . . without the fellowship." Several noted that the fellowship led them to take leadership roles in public policy activities, such as, "I founded the state coalition for chronically ill and disabled children"; "I obtained state legislation to increase the crippled children's services appropriation"; "I obtained a tax exemption for families of children with spina bifida"; and "I chair the State CATCH program." It appears that for many academic generalists, the activities that have given satisfaction and may in the long run be most important in improving the health of children is their policy and advocacy roles.

The major problems in the careers of both groups, not surprising in today's climate of patient care

**TABLE 4.** Number of Former Fellows Who Received Service and Education Grants, by Dollar Amount of Grant—Results of Survey Questionnaire

	Service		Education	
	GDADP (%)	CS (%)	GDADP (%)	CS (%)
<\$100 000	10 (45.5)	0	7 (56.7)	0
\$100 000 to \$1 million	7 (31.8)	6 (60.0)	3 (27.3)	1 (33.3)
\$1 million to 3 900 000	5 (22.7)	2 (40.0)	1 (9.1)	2 (66.7)
Mean number of grants/fellow*	5.2	4.6	2.25	1.0

\* *p* = .06.

demands, were the heavy demands for service, lack of time for research, and lack of funding, all expressed more frequently (not significantly so) by the academic generalists (Table 6). Other studies have documented the current stress levels of pediatric faculty because of patient load and administrative responsibilities.<sup>2</sup> One third of both groups expressed lack of support by the leadership of their departments. Some idiosyncratic problems such as geography limiting career choice, gender, and major health problems were problems experienced by a few in each group.

### FOLLOW-UP STUDY OF INSTITUTIONAL ORGANIZATION OF GENERAL PEDIATRICS

In our 1996 survey, we found that most departments of pediatrics now use the term General Pediatrics for divisions previously called ambulatory or outpatient departments (OPD). Of the 103 responses received from 127 medical schools, 93 (90%) call these divisions General Pediatrics; only 5% still call these divisions Ambulatory Pediatrics. Most of the name changes occurred before 1990; only 11% have changed since then. The responsibilities of these divisions include the continuity clinic (97%), OPD (87%), community programs (79%), administration of the medical student clinical clerkship (61%), adolescent unit (60%), normal newborn nurseries (52%), chronic disease clinics (47%), one or more inpatient units (45%), urgent care center (44%), developmental/behavioral service (37%), the pediatric residency program (36%), and emergency service (28%). There are no very striking differences in areas of responsibility between the two surveys, with the exception of the considerable drop in inpatient responsibilities for the divisions of General Pediatrics over the 8-year period. Teaching responsibilities of these divisions were conducted in the continuity clinic (96%), OPD (93%), medical student clinical clerkships (88%), community programs (80%), pediatric residency program (78%), inpatient service (76%), adolescent service (67%), normal newborn nurseries (65%), urgent care center (51%), chronic disease clinics (50%), developmental/behavioral service (49.5%), and emergency service (44%).

Few General Pediatrics Divisions had any academic fellowship programs. In fact, only 30 had a

**TABLE 5.** Number of Former Fellows Who Noted Satisfaction/Achievements—Results of Survey Questionnaire

	GPADP		CS	
	No. of Responses	% of Cases	No. of Responses	% of Cases
Teaching*	40	50.6	10	40.0
Patient care	41	51.9	9	36.0
Research, grants, recognition for	34	43.0	12	48.0
Challenging atmosphere/good balance, niche	31	39.2	8	32.0
Building new programs	26	32.9	8	32.0
Policy, community education	21	26.6	9	36.0
Writing	15	19.0	2	8.0
Professional organization**	11	13.9		
Academic achievement and/or tenure	8	10.1	1	4.0
Total cases responding	79	100.0	25	100.0

\*  $p < .04$ ; \*\*  $p < .001$ .

**TABLE 6.** Number of Former Fellows Who Noted Major Problems Faced—Results of Survey Questionnaire

	GPADP		CS	
	No. of Responses	% of Cases	No. of Responses	% of Cases
No time; heavy service*	45	63.4	9	42.9
Lack of research environment/funding	34	47.9	8	38.1
Lack of support from leadership; bureaucracy	26	36.6	7	33.3
Balancing family and career	16	22.5	4	19.0
Obtaining funds for programs; inadequate pay	16	22.5	2	9.5
Changes in healthcare system**	6	8.5		
Geography limited career choice	1	1.4	2	9.5
Being a woman professional	1	1.4	2	9.5
Refused to comment	2	2.8		
Major health problems			1	4.8
Total cases responding	71	100.0	21	100.0

\*  $p < .1$ ; \*\*  $p < .02$ .

fellowship program at all, and of these, 60% were of 2 years' duration and only 20% of 3 years' duration (3 years are now considered necessary for an academic fellowship). Support for these fellowship programs came from federal sources (45%), private sources (17%), and institutional sources (55%), the latter probably primarily for patient care services. Among the 30 programs that had a fellowship program, 62 fellows were in place in 1995. Ten programs that had a total of 11 fellows were labeled as strictly clinical, all but one being of 1 or 2 years' duration. Thus, research training is clearly a small part of most General Pediatrics fellowship programs today.

The number of full-time pediatric faculty in these General Pediatric Divisions varied from 1 to 34, with the median and mode both being 9. These were supplemented with a few part-time faculty (median: 3). The number of full-time faculty has grown considerably since 1990, however, from a median of 5 such generalist faculty then to the 9 when we queried them in 1996. There still are very few nonpediatrician faculty in these divisions. Of the 103 General Pediatrics Divisions, 43 had a total of 99 nonpediatric faculty, usually only 1 or 2 per department, if any, and with only modest growth, from 34 programs having 82 nonpediatrician faculty 6 years ago.

Research grants in 1995–1996 in the General Pediatrics Divisions were limited; 25 such divisions had none and 17 had only 1. The maximum number was 14. Of the 49 divisions having one or more research grants, the mean was 3.9 per division.

Total direct costs of these research grants varied from \$2000 to over \$6 million per year, with a mean of \$581 586 and a median of \$163 966. There were, in addition, 1) 40 divisions, with 65 education grants to these divisions, varying from \$720 to \$985 565, with a mean of \$173 028 and a median of \$116 624, and 2) 61 divisions, with a total of 242 patient care or service grants (mean: 4.0 for those with grants) for a mean of \$464 270 and a median of \$227 000. It is clear that these divisions are more involved with service and educational grants than with research grants.

The coin of the realm of academia is publication in peer-reviewed journals. In the academic year 1995–1996, the 81 General Pediatrics Divisions reporting had 770 such articles published, ranging from 0 in some programs to 43 in another! The mean number of articles from all programs was 8.6, but the mode was only 2. It is clear that most General Pediatrics Divisions are publishing relatively few papers.

#### Major Successes

We asked what these General Pediatrics Divisions considered their major successes to be. Eighty-one percent listed medical student and resident education and 74% clinical services; only 36% listed research and 36% administration.

It is of interest that 10% listed organizing managed care as a success, with 7% noting that this division was now more respected in the college and 3% that they had achieved national recognition for scholarship.

## Problems

Not surprising, the questionnaires returned from divisions of General Pediatrics mirrored those of the fellows. Lack of money and facilities was listed as the major problem (47%), followed by lack of personnel (36%), too much clinical work (34%), lack of research (28%), too much administration (28%), managed care (28%), tension between subspecialists and generalists (5%), and a heavy teaching load (5%). Several departments indicated that they still were recruiting academic generalists, with a perception that there is a national shortfall in such candidates. These results are very similar to those of the 1989 survey, except for the rise of managed care being a problem.

## DISCUSSION

Considering the goals of these programs, one can ask whether the glass is half full or half empty. On the plus side, slightly more than two thirds of both GPADP fellows and CS professionals are in academic positions. They have received a large number of grants and are marching along toward academic success, as measured by published papers and receipt of tenure. But clearly, there are problems—heavy clinical loads for the GPADP fellows, difficulty finding time and funds for research, and lack of support from their departments. In the absence of data comparing these fellows with other pediatric faculty, it is difficult to say whether these generalists have more problems than others today. Certainly, anyone who has an open ear today hears these complaints from most faculty, especially on the issue of managed care.

There clearly are some differences between the GPADP fellows and the CS professionals, reflecting the goals and probably the recruitment and fellowship educational programs of the two groups. More CS professionals conduct research and are involved in fellowship education programs, and more GPADP fellows do patient care and are involved in medical student and pediatric resident education. More CS professionals also are in careers outside of clinical pediatric departments.

## CONCLUSIONS AND RECOMMENDATIONS

It seems clear that the small number of fellowship programs in Academic General Pediatrics and the even smaller number of fellows in all programs

combined nationally hardly reflect a growth industry. There are more institutions recruiting graduates for faculty than are being produced. Is that because there is little support today for such academic training or because so few pediatricians are willing to commit to 3 more years of training after completing residency for a future career that they see as having problems? This may reflect a general trend in all subspecialties, because in the past decade, the number of all pediatric residents going into all fellowship programs has declined.

Three actions would increase the recruitment, retention, and productivity of academic generalists: 1) support of more 3-year academic fellowships by either private foundations or federal grants; 2) make more research funds available and, thus, the ability of faculty to produce competitive applications; and 3) support from academic leaders of pediatric departments for academic generalists being encouraged and rewarded for scholarly work and not burdened with even heavier service, teaching, and administrative loads than those in other divisions. What constitutes adequate support obviously is in the eye of the beholder. Most faculty in all fields today believe that they have excessive patient care and teaching responsibilities. Academic generalists must find a balance among patient care, research, teaching, and administration. They cannot isolate themselves in a laboratory. However, if they are expected to do research, they must have time and resources to do so.

The glass clearly is no more than half full in regard to the field of Academic General Pediatrics. On the other hand, in 1978, when this program began, there was hardly a glass available to fill. The field is now established. It now is the responsibility of the graduates of these and other programs to take leadership; become role models for residents; produce creative, important research; and advocate for expanded academic fellowship programs, if the potential for a vigorous field of Academic General Pediatrics is to be achieved.

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