

Resident Perception of Academic Skills Training and Impact on Academic Career Choice

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Abstract. **Objectives:** 1) To evaluate residents' perceptions of the quality of training in basic academic skills and the availability and quality of research resources during residency; 2) to evaluate the association between these attitudes and choice of an academic career; and 3) to assess residents' attitudes toward the importance of postgraduate fellowship training for success in an academic career. **Methods:** A 15-item survey was administered to all U.S. emergency medicine (EM) residents in conjunction with the February 1997 American Board of Emergency Medicine (ABEM) In-service Examination. The survey assessed resident interest in a career in academic EM, and resident perception of the general quality of training in academic (research and teaching) skills. Residents were also asked to rate the quality of their training in the following specific academic skills: medical and grant writing, bedside teaching, lecturing, the use of computers, study design, statistics, and the use of audiovisual aids. Resident perceptions of the availability of the following resources were also assessed: teaching and research role models, data collection and analysis support, laboratory facilities, financial support of research, research fundamentals lectures, and computers. **Results:** The response rate was 93%. Forty-four percent of the respondents were interested in academic EM, 36.6% were undecided, and 19.6% were not interested in an academic career. On a scale of 1 (unprepared) to 5 (well prepared), the residents rated their overall preparedness for an ac-

ademic career fairly high (3.97 [0.86]). In contrast, they perceived the quality of their training in the specific academic skill areas assessed and research resource availability to be only fair. Despite resident perception of relatively inadequate training in basic academic skills, only 24% of the respondents indicated that they believed fellowship training was important for success in an academic career. Logistic regression analyses demonstrated that participation in a research project in medical school, the length of the training program (4- vs 3-year), being a first-year resident, and a better perception of one's overall academic skill preparation were factors independently associated with having a greater interest in an academic career. **Conclusions:** A relatively high percentage of residents initially express an interest in an academic career, but this interest wanes as residency progresses. A minority of residents believe that their training provides them with the specific skills needed to succeed in academics, or with adequate exposure to research resources or mentors. Emergency medicine may be able to increase the number of qualified academic faculty by recruiting medical students with prior research experience, and providing residents with better research training and role models. **Key words:** academic emergency medicine; career choice; residents; research training; postgraduate training. *ACADEMIC EMERGENCY MEDICINE* 2000; 7: 1408-1415

IN RECENT editorials, prominent academic emergency physicians (EPs) expressed the opinion that the sophistication of emergency medicine (EM) research must continue to advance in order to ensure the academic viability of the specialty.^{1,2} The production of increasingly sophisticated research is dependent on a number of fac-

tors, but perhaps most fundamental is the training of physician researchers. A recently published survey of residency program directors demonstrated that 5.4% of EM residency graduates pursue academic careers with a focus on research, and that only 5.7% of graduates pursue fellowship training of any kind, including clinically focused programs in toxicology, emergency medical services, and pediatrics.³ Thus, only a very small percentage of EM residency graduates receive focused training in research methodology. If EM is to substantially increase the pool of academic physicians, increasing the percentage of residents receiving research training should become an important mission of the specialty and its training programs.

Residents' decisions regarding academic career choice are likely to be influenced by a variety of

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factors, some of which are beyond the control of their training programs. The latter may include lifestyle preferences, financial concerns, and research experience prior to residency.⁴ However, it is likely that career choice can also be influenced by physicians' experiences during residency, such as exposure to enthusiastic and qualified research mentors, access to research funds and resources, and the opportunity to learn basic research skills. Prior studies in EM and other disciplines have demonstrated associations between these experiences and the choice of an academic career.⁴⁻⁸ It is important therefore to examine EM resident attitudes about the quality of research exposure and the training they receive during residency. The specific aims of this study were: 1) to evaluate residents' perceptions about the quality of training in basic academic skills and the availability and quality of research resources during residency; 2) to evaluate the association between these attitudes and choice of an academic career; and 3) to assess residents' attitudes toward the importance of postgraduate fellowship training for success in an academic career.

METHODS

Survey Design. A 15-item survey was administered to U.S. EM residents in conjunction with the February 1997 American Board of Emergency Medicine (ABEM) In-service Examination. Resident participation was voluntary and anonymous. The survey required approximately 5 minutes to complete and was distributed, collected, and returned to the SAEM office by program directors. Because of its voluntary nature, this survey was determined to be exempt from informed consent.

Survey Instrument. To determine the profile of EM resident career choice, the residents were asked to rate, on a scale of 1 (no interest) to 5 (strong interest), their interest upon completion of residency training in a career in academic EM. Residents indicating interest in academics were asked to predict whether their career would involve clinical teaching, didactic teaching, original research, or medical writing. In order to evaluate the extent to which residents believe their programs prepare their graduates for academic careers, the residents were asked to rate on a scale of 1 (unprepared) to 5 (well prepared) the quality of training in research skills, teaching skills, and overall academic skills. In addition, the residents were asked to rate from 1 (poor) to 5 (excellent) the quality of their training in the following eight areas: medical writing, grant writing, bedside teaching, lecturing, the use of computers, study design, statistics, and the use of audiovisual aids. The res-

idents' perceptions of eight areas of resource availability were also evaluated using a 1 (none) to 5 (plentiful) scale. Resources assessed included availability of teaching role models, research role models, personnel for data collection, personnel for data analysis, laboratory facilities, financial support for research, lectures on research fundamentals, and computers.

The residents were also surveyed as to whether they had previous research experience, as a medical student or resident. The survey also asked whether the respondent intended to pursue fellowship training. In addition, using a ten-point Likert scale (1 = strongly disagree; 10 = strongly agree), the respondents were asked to indicate whether they agreed or disagreed that fellowship training was important for success in an academic career. Demographic information included the resident's postgraduate year of training and the type of institution (university, community, county, or military) at which the resident trained.

Data Analysis. Since residents were asked to evaluate the level of preparedness of program graduates, data analysis included only those programs that had graduated three or more classes of residents. This also made it more likely that departmental resources evaluated by respondents would be more stable.

The analyses focused on evaluating the effect of environmental factors on resident intent to pursue a career in academic EM. The primary outcome variable, interest in pursuing a career in academic EM upon completion of residency, was dichotomized as follows: no interest (1, 2, 3) vs interest (4, 5). For univariate analyses, quality-of-training-related variables were dichotomized into not good (1, 2, 3) vs good (4, 5), and resource-availability-related variables into inadequate (1, 2, 3) vs adequate (4, 5). In addition, the eight-item perceived quality-of-training variables were combined and standardized into a 0-100 summary score where 0 represented the poorest and 100 represented the best quality of training. The eight-item resource availability variables were also combined and standardized into a 0-100 summary measure where 0 indicated no resources and 100 indicated plentiful resources for all eight items. Summary statistics such as frequency distributions and means were calculated for all variables of interest. Chi-square test was used to assess associations of categorical variables with the level of interest in pursuing an academic career.

Logistic regression analysis was used to evaluate the effect of the various environmental factors on resident interest in pursuing an academic career, while controlling for confounding variables. Independent variables considered in the logistic re-

gression included program length (3-year vs 4-year), institute type (university vs community vs county/public vs military), and previous research experience. For logistic regression, we used the summary measures for the perceived quality-of-training and resource-availability variables instead of the individual items, to avoid fitting highly correlated multiple covariates that measure closely related concepts.

Final analyses of factors that influence residents' perceptions of the importance of fellowship training for success in an academic career and their intent to pursue fellowship training included only those respondents who expressed an interest in academic EM. Resident responses to the question assessing the perceived importance of fellowship training were dichotomized into strong agreement (7–10) vs not (1–6), and predictors of strong agreement were determined using logistic regression analysis. We also used logistic regression to determine predictors of an intention to pursue postgraduate training.

For all logistic regression models, the odds ratios (OR) and 95% confidence intervals (95% CIs) were calculated using parameter estimates from the model. We used the generalized estimating equation (GEE) method for all analyses in order to correct for the effect of residents' being clustered within institutions. The final model was derived using the stepwise procedure. For all statistical analyses, an alpha level of 0.05 was considered statistically significant.

RESULTS

Of the 3,100 U.S. EM residents who completed the 1997 ABEM In-service Examination, 2,879 (93%) completed the survey. Of the 2,879 respondents, 2,402 (83.4%) were from programs that graduated at least three classes ("established programs"), while 477 (16.6%) were from programs that graduated fewer than three classes ("young programs"). Of the 2,402 responses from established programs, 213 were incomplete, leaving 2,189 for the final data analyses. Of these, 1,465 (50.9%), 679 (23.6%), 613 (21.3%), and 122 (4.2%) were from university hospital, community hospital, county/public hospital, and military hospital programs, respectively. The mean (\pm SD) levels of interest in an academic career were 3.36 (\pm 1.11) for established programs and 3.41 (\pm 1.11) for new programs ($p = 0.357$).

Among the residents from the established programs, 43.8% were interested in an academic career, 36.6% were undecided, and 19.6% were not interested in an academic career. This represents a statistically significant increase from the 1991 study by Sanders et al.⁴ in which 35% of the re-

spondents indicated that they were interested in pursuing a career in academics ($p < 0.000$). Univariate analysis demonstrated that a larger percentage of residents from military and county hospitals were interested in pursuing a career in academic EM as compared with residents from community and university hospital programs. Forty-eight percent, 48.9%, 42.5%, and 41.5% of residents from military hospital, county/public hospital, community hospital, and university hospital programs were interested in an academic career, respectively ($p = 0.031$).

Of residents in postgraduate years 1, 2, and 3 of training, 47.2%, 42.2%, and 41.9%, respectively, reported being interested in an academic career. Among residents in postgraduate years 4 and 5, 44.7% of the residents indicated an interest in academic EM. A significantly larger percentage of first-year residents were interested in an academic career as compared with the percentage of senior residents ($p = 0.038$). Similarly, only 39% of the residents in the last year of training (third year for a three-year program and fourth year for a four-year program) were interested in an academic career, compared with 45% among the other years ($p = 0.019$). A larger proportion (49.3%) of the residents from four-year training programs were interested in an academic career as compared with residents from three-year programs (40.6%) ($p = 0.001$). Residents who completed an original research project during medical school were more likely to report an interest in an academic career (37.9% vs 33.0%; $p = 0.018$).

The residents were generally positive when rating their level of preparedness for an academic career, particularly with regard to their teaching skills (Table 1). Residents with an interest in academic EM were more likely to report a higher level of preparedness for such a career. Only a minority of the residents indicated agreement with the statement that fellowship training is important for success in academics. The residents' responses regarding their overall level of preparedness and the need for additional training are somewhat contradicted by their responses to questions regarding the quality of specific elements of their academic training (Table 2). A minority of the residents reported good or excellent training in medical writing, grant writing, statistics, study design, and use of computers. There were much higher levels of satisfaction with training in bedside teaching, lecturing, and use of audiovisuals, with the majority of residents rating these as good or excellent. Residents with an interest in academics perceived the quality of their training in the areas of medical writing, lecturing, and the use of computers to be better as compared with those not interested in an academic career. The overall summary measure of

TABLE 1. Resident Characteristics among Programs that Graduated at Least Three Classes of Residents

Resident Characteristic	All Respondents (n = 2,189)	Interested* (n = 958)	Not Interested† (n = 1,231)	p-value
Completed original research				
In medical school (%)	35.1	37.9	33.0	0.018
During residency (%)	21.1	21.7	20.6	0.560
Plans to do original research during residency (%)	85.2	86.8	83.9	0.056
Residency program requires a research project (%)	75.6	76.3	75.1	0.522
Plans to complete a fellowship (%)	18.6	24.2	14.2	0.001
Fellowship is important in academic careers‡ (%)	23.8	24.9	22.9	0.284
Perception of residency program preparation for an academic career [1–5 scale; mean (±SD)]				
Overall academic skill	3.97 (±0.86)	4.06 (±0.87)	3.89 (±0.85)	<0.001
Research skill	3.18 (±1.01)	3.24 (±1.01)	3.13 (±1.01)	0.015
Teaching skill	3.82 (±0.88)	3.89 (±0.89)	3.76 (±0.87)	<0.001

*Residents interested in pursuing an academic career (level of interest rating 4 or 5).

†Residents not interested in pursuing an academic career (level of interest rating 1, 2, or 3).

‡Percentage with score ≥7, as measured on a scale of 1 (strongly disagree) to 10 (strongly agree).

TABLE 2. Percentage of Residents Rating* the Quality-of-training Factors during Residency to Be Good or Excellent (4 or 5 on 1–5 Scale) among Programs that Graduated at Least Three Classes of Residents

Quality-of-training Item	All Respondents (n = 2,189)	Interested† (n = 958)	Not Interested‡ (n = 1,231)	p-value
Medical writing	19.8	21.8	18.2	0.039
Grant writing	5.2	5.1	5.3	0.781
Statistics	18.8	17.3	19.9	0.137
Study design	27.6	29.1	26.5	0.180
Bedside teaching	71.0	72.7	69.7	0.135
Lecturing	78.0	80.8	75.8	0.006
Use of computers	48.1	50.5	46.2	0.049
Use of audiovisual aids	60.6	64.4	57.6	0.001
Overall summary measure [mean (±SD)]§	53.78 (±16.48)	54.52 (±16.19)	53.14 (±16.69)	0.055

*The ratings were measured on scale of 1 (poor) to 5 (excellent).

†Residents interested in pursuing an academic career (level of interest rating 4 or 5).

‡Residents not interested in pursuing an academic career (level of interest rating 1, 2, or 3).

§Standardized summary measure of the quality of training on a scale of 0 (poor in all 8 items) to 100 (excellent in all 8 items).

perceived quality of training was rated to be fair as indicated by the summary scores close to 50%. The score was slightly higher (p = 0.055) for the residents interested in an academic career.

The residents also perceived research resource availability to be no better than fair (Table 3). With the exceptions of computers and role models for research and teaching, a majority of the residents rated research resources to be less than adequate. The residents with and without an interest in academic EM rated resource availability similarly, except with regard to availability of teaching role models.

Logistic regression analysis demonstrated that participation in a research project in medical school, the length of the training program, current year of postgraduate training, and perceived level

of overall academic skill preparation were factors independently associated with an interest in an academic career (Table 4). The residents who participated in a research project in medical school were estimated to be 1.22 times more likely, while upper-year residents were 0.80 times less likely to be interested in an academic career. Residents of four-year training programs were estimated to be 1.45 times more likely to be interested in an academic career, while every one-level increase in the perceived rating (1–5) of overall academic skill preparation was associated with a 1.31-fold increase in the likelihood of having an interest in academic EM. Although univariate analysis demonstrated that residents training at a university or community hospital were less likely to report an interest in an academic career, training site was not found

to be a statistically significant factor in the logistic regression model ($p = 0.16$).

The residents' mean rating of the importance of fellowship training for success in an academic career was 4.95 (± 2.14) on the ten-point Likert scale. Twenty-four percent of all the respondents indicated that they believed fellowship training was important, a rating of 7–10 on the ten-point Likert scale, for success in an academic career. There was no difference in the mean rating of the importance of fellowship training between residents with and without an interest in an academic EM career. Twenty-five percent of the residents with an intent to pursue a career in academic EM strongly agreed with the statement that "fellowship training is important for success in an academic career." The mean (\pm SD) rating on the ten-point Likert scale by residents with an interest in an academic career was 5.02 (± 2.18).

Approximately 19% of all the respondents plan to pursue fellowship training. This is significantly greater than the percentage of residents estimated by EM program directors to have actually sought such training during the past five years.³ A significantly larger proportion of residents who reported an interest in an academic career, as compared with those not interested, expressed an intent to seek such training (24.2% vs 14.2%; $p = 0.001$). Logistic regression analysis demonstrated that residents in their last year of training (OR: 0.53; 95% CI = 0.37 to 0.76) and those in four-year programs (OR: 0.68; 95% CI = 0.51 to 0.91) were less likely to have plans for pursuing postgraduate training. Although not statistically significant, in this model having done research during medical school was noted to be positively associated with the intent to seek postgraduate training (OR: 1.27; 95% CI = 0.95 to 1.69). Similar parameter estimates were obtained when having strong agreement toward the

importance of fellowship training was included in the above model. This suggests that residents of four-year programs and those in their last year of training are less likely to have an intent to pursue a fellowship regardless of whether they agree with the importance of such training. The perceived quality of training and resource availability were not significant factors in residents' intentions to pursue a fellowship.

DISCUSSION

In 1994 Gallagher et al. described an inverse association between medical schools' affiliations with EM residencies and their receipt of National Institutes of Health (NIH) research funding.⁹ This association is changing as residencies and academic departments develop in the most research-intensive medical schools.¹⁰ Given this change, the success of EM faculty members is increasingly likely to require demonstrated skill not only as clinicians and educators, but as traditional academicians, publishing regularly and competing for research funding. Academic advancement of EM and improvement in the care of emergency department patients are also highly dependent on the specialty's success in research. Because EM residents represent the raw material from which future academicians will be developed, it is essential to understand residents' attitudes toward academic careers and how those attitudes can be affected. This study demonstrated strong interest in academic careers among junior EM residents. Interest in academics was positively associated with performance of research in medical school, participation in a four-year residency, and an overall sense that a residency adequately prepares its graduates for academics. Interest was negatively associated with higher levels of residency training.

TABLE 3. Percentage of Residents Rating* the Availability of Resources in Their Residency Programs to Be Adequate (4 or 5 on a 1–5 Scale) among Programs that Graduated at Least Three Classes of Residents

Resource-availability Item	All Respondents ($n = 2,189$)	Interested† ($n = 958$)	Not Interested‡ ($n = 1,231$)	p-value
Animal laboratory	31.2	30.7	31.7	0.606
Financial support for research	30.2	30.9	29.6	0.534
Research fundamentals lectures	34.3	34.5	34.2	0.900
Research role models	52.3	54.4	50.6	0.080
Teaching role models	81.1	84.0	78.8	0.003
Computers	57.3	58.5	56.4	0.333
Data collectors	28.6	29.2	28.2	0.600
Data analysis	31.3	29.9	32.5	0.208
Overall summary measure [mean (\pm SD)]§	55.98 (± 18.39)	56.51 (± 18.35)	55.71 (± 18.48)	0.319

*The ratings were measured on a scale of 1 (none) to 5 (plentiful).

†Residents interested in pursuing an academic career (level of interest rating 4 or 5).

‡Residents not interested in pursuing an academic career (level of interest rating 1, 2, or 3).

§Standardized summary measure of the resource availability on a scale of 0 (none in all 8 items) to 100 (plentiful in all 8 items).

TABLE 4. Logistic Regression Model for Having an Interest in an Academic Emergency Medicine Career

Variable	Odds Ratio	95% CI*	p-value
Four-year program (yes/no)	1.45	1.21, 1.74	<0.001
Second- or upper-year class (yes/no)	0.80	0.67, 0.96	0.016
Research done in medical school (yes/no)	1.22	1.02, 1.45	0.027
Overall academic skill preparation rating (1–5)	1.31	1.19, 1.44	<0.001

*Confidence interval for odds ratio.

It is encouraging that 43.8% of the resident respondents stated that they definitely or probably intended a career in academics. This compares favorably with the 35% of residents indicating an interest in academics in a 1991 survey.⁴ Less encouraging is the finding that interest in academics wanes as residency progresses. This may reflect personal considerations not evaluated in this study such as increasing debt load, new financial obligations, or changes in marital status. However, declining interest may also indicate failure to teach residents essential academic skills and consequent lack of confidence in their ability to succeed in academics. Although residents expressed a fairly high overall level of confidence that residency would provide them with academic skills, they did not indicate positive opinions about the quality of their training in specific academic skills such as medical writing, grant writing, study design, or statistical analysis. Nor were they positive about the quality of resources available, with teaching role models being the only resource thought to be adequate by a substantial majority of residents.

Given these perceived deficits, it seems apparent that EM programs have the potential to foster increased enthusiasm for academic careers, including careers focused on research. The resources and elements of training about which residents expressed opinions in this study are highly amenable to change and there is evidence that this would have a positive effect. One example is the current study's findings that a positive opinion of teaching resources was consistently associated with a strong interest in an academic career. This includes high satisfaction with didactics in residency and a favorable impression of teaching role models. Wipf et al.¹¹ described a training program for internal medicine residents to become effective teachers and improve the transition from interns to team leaders. Similar programs could be adapted for EM. Strengthening the didactic curriculum and promoting excellent clinical teaching are additional ways to build resident enthusiasm for teaching.

There are even greater opportunities for improvements in the teaching of research skills and the exposure of residents to successful research

role models. Although the current study did not demonstrate an association between an interest in academics and exposure to research resources or confidence in research skills, the overall negative opinion of the quality or availability of specific resources may have made it very difficult to demonstrate such an association. Research in other specialties has shown strong associations between pursuit of academic careers and factors such as research experience during residency and the availability of research role models and funding. Hillman et al.⁶ reported that radiology residents from the 20 institutions with the highest NIH funding were significantly more likely to pursue academic research careers. Bissonnette et al.¹² also pointed out the importance of basic science research, stating that the most important factor in a successful research career is to obtain training in an institution with a critical mass of successful basic science researchers. In 1989 Sanders et al.⁵ retrospectively surveyed EPs in both academic and clinical careers and reported that academic faculty believed that research role models significantly impacted their career choices. A survey of junior pulmonology faculty reiterated the need for research training during residency.¹³ Twenty-five percent of junior faculty surveyed in pulmonology state that their training did not adequately prepare them for an academic position, specifically citing inadequate training in research methods and in writing papers and grants.

As has been shown in the past,⁴ this study demonstrated a greater interest in academics among residents who had performed research during medical school. This association does not exist between interest in academics and research experience in residency. This is likely to reflect the fact that for many residents, participation in research is mandated rather than the result of higher than average aptitude or interest. This study did not evaluate the effects of mandated research on resident career choice, but it is possible that the reported absence of role models and other basic resources may have negatively affected residents' interest in research. In most medical schools, research projects are pursued on elective rotations and the student often has access to numerous qualified men-

tors. It is possible that inherent interest in research is more often a motivating factor at the student level.

Demographic data on training sites demonstrate that residents in four-year programs report greater interest in academic careers than those in three-year programs. This likely reflects increased choice of four-year program by students with interest in academics, but it is possible that a greater focus on academics at these programs may influence residents' career choice. More difficult to explain is the finding that interest in academic careers was lowest at university-based programs. This could be attributed in part to the fact that many of the EM programs based at university hospitals are newer, and may not yet have developed or recruited research role models. It is also possible that residents working predominately in university or community hospitals were exposed to academic faculty with different interests and activities (e.g., greater involvement in clinical teaching at community hospitals vs greater involvement in research at university hospitals). Thus, these respondents may have used a different definition of an academic career.

Perhaps the most important findings of the current study relate to residents' attitudes about the importance of fellowship training. The resident's mean rating for the importance of fellowship training for success in an academic career was low at 4.95 (± 2.14) on the ten-point Likert scale. Although 43.8% of the residents expressed interest in academics, only 18.6% expressed an intent to pursue fellowship training. The actual percentage of residents who pursue fellowship training is substantially less, about 5.7%.³ Even among those residents interested in academic careers, only 24.9% considered fellowship training to be important. This percentage is not significantly greater than among those residents not interested in academics. This finding suggests that attitudes about the importance of fellowship training are shaped less by career interest than by environmental factors, such as the attitudes and experiences of residency faculty. We have previously demonstrated that the majority of program directors do not consider fellowship training to be important for success in academics, perhaps reflecting their own experience or that of their colleagues.³ Based on the training history and attitudes of academicians in other specialties, it appears that EM is relatively unique in the belief that fellowship training is not necessary for success in academics.^{14,15} The previously demonstrated program director attitudes about fellowship training are particularly difficult to reconcile with the current study's finding that a majority of residents consider their training in basic academic skills to be inadequate.

LIMITATIONS AND FUTURE QUESTIONS

Data regarding resource availability and quality of training are largely opinions or estimates by residents; these are subject to inaccuracy and bias. These were not corroborated with actual assessments provided by the knowledgeable program representatives. In addition, no attempt was made to use a standardized definition of an academic career. It is possible that the respondents' opinions as to the meaning of this term varied widely.

The statistical analysis demonstrates associations between variables rather than causal relationships. It is essential to cautiously interpret these data and avoid making inferences regarding causality. For example, although residents who are more confident in their academic skills are more likely to express an interest in academics, there is no evidence from this study that the increased interest is related to the higher level of confidence.

It would be helpful to assess and follow resident interest in pursuing an academic career throughout the training process. This might provide better insight into the environmental factors amenable to alteration that may account for the decrease in interest in an academic career as residents progress through training.

CONCLUSIONS

Although a high percentage of residents initially express an interest in academic careers, only a minority believe that residency provides them with the specific skills needed to succeed in academics, or with adequate exposure to research resources or mentors. Furthermore, only a minority of residents believe that research fellowship training is necessary. If EM is to increase its production of qualified academic faculty, the specialty should focus on recruiting medical students with prior research experience and providing residents with adequate research training, resources, and role models. Perhaps most important, residency faculty should work to change the attitude that it is possible to succeed in academics without adequate training in basic academic skills.

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Call for Nominations

Deadline: January 1, 2001

Nominations are sought for the Hal Jayne Academic Excellence Award and the Leadership Award. These awards will be presented during the SAEM Annual Business Meeting on May 8 in Atlanta. Nominations for honorary membership for those who have made exceptional contributions to emergency medicine are also sought. The Nominating Committee wishes to consider as many exceptional candidates as possible. Nominations may be submitted by the candidate or any SAEM member. Nominations should include a copy of the candidate's CV and a cover letter describing his/her qualifications. Nominations can be sent to saem@saem.org or 901 N. Washington Ave., Lansing, MI 48906 or via fax at 517-485-0801. The awards and criteria are described below:

Academic Excellence Award

The Hal Jayne Academic Excellence Award is presented to a member of SAEM who has made outstanding contributions to emergency medicine through research, education, and scholarly accomplishments. Candidates will be evaluated on their accomplishments in emergency medicine, including:

1. Teaching
 - A. Didactic/Bedside
 - B. Development of new techniques of instruction or instructional materials
 - C. Scholarly works
 - D. Presentations
 - E. Recognition or awards by students, residents, or peers
2. Research and Scholarly Accomplishments
 - A. Original research in peer-reviewed journals

- B. Other research publications (e.g., review articles, book chapters, editorials)
- C. Research support generated through grants and contracts
- D. Peer-reviewed research presentations
- E. Honors and awards

Leadership Award

The Leadership Award is presented to a member of SAEM who has demonstrated exceptional leadership in academic emergency medicine. Candidates will be evaluated on their leadership contributions including:

1. Emergency medicine organizations and publications.
2. Emergency medicine academic productivity.
3. Growth of academic emergency medicine.