Scholarly Activities of Family Medicine Faculty: 
Results of a National Survey

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Abstract:
Background and Objectives: This survey examined how family medicine residency programs define scholarly activity, the productivity of programs, and perceived barriers to scholarly work. Five types of residency programs are compared: university-based, community-based (unaffiliated, university-affiliated, university-administered), and military.

Methods: A 13 item web-based questionnaire was sent to all 455 U. S. family medicine residency programs. The survey solicited demographic information as well as program expectations of faculty, presence of a research coordinator/director, activities considered scholarly, productivity, and perceived barriers.

Results: A total of 177 surveys were completed for a response rate of 38%, similar to response rates of web-based surveys in the literature. 67.6% of programs encouraged, but did not require scholarly activity, and 44.5% indicated their program had no research coordinator/director. University-based programs had the highest levels of productivity compared to other program types. Primary barriers to scholarly activity noted were lack of time (73/138, 53%) and lack of supportive infrastructure (37/138, 27%).

Conclusions: While interpretations are limited by the response rate of the survey, results provide an increased understanding of how programs define scholarly activity as well as reference points for faculty productivity. This information can help program directors when setting criteria for scholarly work.

Keywords: research, faculty productivity, scholarly activity

Family physicians have a role in generating and sharing new knowledge. This creation of new knowledge through scholarly activity is an expectation of all family medicine faculty,1 as well as a recommendation of the Future of Family Medicine Task Force.2 Some have even called for the 21st century to be the golden age of family medicine research.3

Although family medicine faculty are expected to produce scholarly work, it is unclear what standards are in place. The term “scholarly activity” can be viewed narrowly or broadly; it can vary from program to program, or even between faculty members. ACGME program requirements define “scholarly activity” to include publications, presentations, clinical discussions and rounds, as well as supervision of resident research.1 Research studies have defined scholarly activity more narrowly, focusing on funded grants and peer reviewed publications4-6, grants, publications and presentations at regional, national or international meetings7, or grants, publications and posters/papers at national, state, or local meetings.8

Inconsistencies also exist about standards of productivity for faculty at family medicine residency programs. Some researchers have defined “high productivity” as programs with one research grant and more than one publication per four faculty per year.6 Others have looked at actual programs and compared “more intense” programs to those considered “less intense,” but found only an increase in funded research grants at those programs considered more intense.5

Expected or not, research has shown that there are factors which help or hinder faculty scholarly activity. In 1992, Bland proposed 12 characteristics of a research-conducive (i.e. productive) environment.9 Since that time, empirical research has shown that increased productivity is associated with the presence of human resources to support research6,5,6 and protected research time.6,10 Others have noted benefits from fellowship programs, requirements for scholarly work, strategic planning for research,4 or increased director support for scholarship.5
In this article we will present results of a national web-based survey of scholarly activities among the faculty of family medicine residency programs. The purpose of the study is to 1) Clarify activities considered to fit the criteria of “scholarly”; 2) Obtain faculty productivity levels at family medicine residency programs; and, 3) Identify perceived barriers to scholarly activity. We hope this information will help program directors and research coordinators define the scope of scholarly activity at their programs, and set appropriate expectations for faculty.

**Methods**

With approval from the Institutional Review Board of the Poudre Valley Health System, a 13-item questionnaire was developed. The items were pilot tested with faculty at one family medicine residency program with several revisions made prior to final distribution. The questionnaire was formatted using Zoomerang®, an online survey publisher. A copy of the survey items can be found in Appendix 1.

**Procedure** - The first phase of the project involved identifying electronic contact information for each residency program. A list of the 455 programs was obtained from the American Academy of Family Physicians (AAFP) web site.11 Emails were sent to all programs requesting contact information for a research coordinator/director. If available, that person received subsequent electronic communications. When no research contact was available, email communication was sent to the address provided on the AAFP web site.

The data collection involved three phases. One week prior to sending the questionnaire, an email was sent to the contact person explaining the project and the forthcoming survey. All emails were personalized when pos-

### Table 1. Respondent Demographics

|                          | All respondents | Community-based, unaffiliated | Community-based, university affiliated | Community-based, university administered | University-based | Military |
|--------------------------|-----------------|-------------------------------|----------------------------------------|------------------------------------------|------------------|----------|
| Program Size             |                 |                               |                                        |                                          |                  |          |
| (Total # of FP residents)| n = 173         | n = 29                        | n = 85                                 | n = 21                                   | n = 29           | n = 9    |
|                          | Mean            | Median                        | Mean                                   | Mean                                     | Mean             | Mean     |
| Program Age              | 23.9            | 21.5                          | 28.6                                   | 23.7                                     | 21.7             | 28.6     | 22.1     |
| Number of FTE faculty physicians |           |                               |                                        |                                          |                  |          |
|                          | 10.1            | 7.3                           | 16.5                                   | 9.2                                      | 9.0              | 16.5     | 9.4      |
| Number of total faculty  | 12.1            | 8.8                           | 21.4                                   | 11.0                                     | 10.8             | 21.4     | 10.3     |
| Number of MD/DO faculty  | 9.9             | 7.3                           | 17.2                                   | 9.3                                      | 8.5              | 17.2     | 9.4      |
| Number of PhD/PharmD faculty | 1.3         | 1.0                           | 2.7                                    | 0.96                                     | 1.5              | 2.7      | 0.67     |
| Number of MS/MA/MSW faculty | 0.6          | 0.4                           | 0.8                                    | 0.5                                      | 0.6              | 0.8      | 0.1      |
sible. One week later, an email was sent with a link to the online questionnaire. Approximately two weeks later, a third email was sent providing a second chance to complete the questionnaire (if necessary). Due to the lengthy process of identifying contact information, several waves of questionnaires were sent over one month as programs provided contact information. The final wave of questionnaires included all programs for which no research contact was available.

Data were analyzed using SPSS Version 13.0 for Windows©. Means and medians are presented as measures of central tendency. Chi-square tests were used to compare presence of a research coordinator and scholarly requirements for the whole sample. Variables were compared across types of programs using nonparametric analyses (Kruskal-Wallis Test, Mann-Whitney U test) which can take into account the small sample size of some program types, as well as the absence of random sampling.

Results

Characteristics of Responding Residency Programs - Of 455 surveys, 177 were returned, for a response rate of 38.9%. Four responses were removed from the data set; two contained only demographic information and two were duplicates submitted in error.

Demographics of the respondents, including program age, number of residents, and type of program are included in Table 1 for both the entire sample and by program type. Of the 173 responses, 49.1% (n=85) came from community-based, university affiliated programs; 16.7% (n=29) came from community-based, unaffiliated programs; another 16.7% (n=29) came from university-based programs; 12.1% (n=21) came from community-based, university administered programs; and 5.2% (n=9) came from military family practice residency programs. The proportion of responses for each program type is similar to their proportion in the overall distribution of residency programs, though our sample has a slight over representation of unaffiliated programs, and a slight under representation of community-based university affiliated programs.

Scholarly Activity Requirements - Using a four-point scale, respondents identified the level at which their program requires scholarly activity. There were significant differences in level of requirement ($\chi^2 = 171.8, p<0.001$). Scholarly activity was Not Expected at 5.2% programs (n=9), Encouraged but not required at 67.6% of programs (n=117), Required of some, but not all, faculty at 11% of programs (n=9), and Required of all faculty at 16.2% of programs (n=28). Table 2 presents scholarly activity requirements by program type.

What is included in a definition of Scholarly Activity? From a list of 27 activities, respondents indicated those included in their definition of scholarly activity (Table 3). Only two differed significantly across program type. Rejected national meeting presentation proposals were significantly less likely to be considered scholarly activity by university-based and community-based, university administered programs. Only 21% and 14% of these programs, respectively, accept its inclusion in a definition of scholarly activity compared to 41-44% for other program types ($\chi^2 = 9.6, p=0.047$). Presentations at resident conferences showed the opposite trend with 67% of university-based and 59% of community-based, university administered programs endorsing its inclusion.

Table 2. Level at which Scholarly Activity is Required for Each Program Type

| Program Type                                | Not Expected | Encouraged, but not required | Required of some faculty, but not all | Required of all faculty |
|---------------------------------------------|--------------|------------------------------|--------------------------------------|------------------------|
| Community-based, unaffiliated (n = 29)      | 6.9%         | 65.5%                        | 13.8%                                | 13.8%                  |
| Community-based, university affiliated (n = 85) | 7.1%         | 76.5%                        | 7.1%                                 | 9.4%                   |
| Community-based, university administered (n = 21) | 4.8%         | 66.7%                        | 9.5%                                 | 19.0%                  |
| University-based (n = 29)                   | 0.0%         | 44.8%                        | 24.1%                                | 31.0%                  |
| Military (n = 9)                            | 0.0%         | 66.7%                        | 0.0%                                 | 33.3%                  |
| All Programs (n = 144)                      | 5.2%         | 67.6%                        | 11.0%                                | 16.2%                  |
in a definition of scholarly activity, while only 11% of military programs felt it acceptable to include ($\chi^2 = 12.8$, $p=0.012$).

**Productivity** - Of the 173 total respondents, 141 respondents completed all productivity items. Programs reported that, on average, 52% of physician and 52% of non-physician faculty were involved in scholarly activity. Faculty productivity in six areas was reported: peer-reviewed publications, non-peer reviewed publications, presentations at national/regional meetings, poster presentations at national/regional meetings, and faculty research grants. The means and medians of productivity for the whole sample, and by program type, are given in Table 4.

Respondents had the opportunity to write in additional scholarly activities not already identified on the survey. Other types of scholarly activities included residency training grants, book chapters, and submissions to the Family Practice Inquiry Network (FPIN). These activities were not always quantified and, therefore, not included in the total productivity score used for analyses of productivity.

The six productivity measures were summed to create a new variable which was a measure of the total productivity at a program in the last year. Results showed that the five program types differ significantly in their level of scholarly activity productivity, as measured by our survey (Kruskal Wallis test, $p <0.001$). University-based programs reported the highest level of productivity (Median Productivity = 29), as compared to community-based programs which reported median total productivity values of 8.5 (unaffiliated), 11 (university affiliated), and 14 (university administered). Military programs had a median total productivity of nine. A comparison of university-based programs (n=21) to all community-based programs (n=115) showed similar differences in productivity (Mann-Whitney U test, $p <0.001$).

Total productivity was associated with the level at which scholarly activity was required, as well as to the

| Table 3. Percent of Respondents Endorsing Particular Activities as Scholarly |
|--------------------------------------------------------|
| Activity as Scholarly |
| Which of the following activities would you include in a definition of scholarly activity? | % Programs Endorsing |
| Peer-reviewed publication | 98.8 |
| Peer-reviewed conference presentation | 96.5 |
| Writing a grant proposal | 81.5 |
| Invited speaker at a state academy meeting | 80.9 |
| CME conference presentation | 79.2 |
| Peer-reviewed journal reviewer | 75.7 |
| Non-peer-reviewed conference presentation | 72.8 |
| Non-peer-reviewed publication | 71.1 |
| Supervising resident research | 69.4 |
| Developing innovative curriculum | 60.1 |
| Submitting to FPIN | 59.5 |
| State meeting presentation | 59.5 |
| Rejected peer-reviewed article | 51.4 |
| Letter to the editor | 49.1 |
| Medical staff presentation | 46.2 |
| Resident conference presentation | 44.5 |
| Serving on an IRB | 41.0 |
| Rejected presentation at national conference | 35.3 |
| Instructing a certification course | 32.4 |
| Community group presentation | 30.1 |
| Trade magazine article | 16.2 |
| Elected office in state academy | 13.9 |
| Professional society member | 13.3 |
| Newspaper article | 11.0 |
| Committee/ board member | 8.1 |
| Office newsletter | 4.0 |
| Community fundraiser participant | 2.3 |
The presence of a research coordinator/director. Those programs where scholarly activity was Not Expected or Encouraged but not required had a median productivity of 10 activities per year; productivity at programs where scholarly activity was Required of some (Median Productivity = 19) or Required of all faculty (Median Productivity = 21) was significantly higher (Kruskal-Wallis test, \(p = 0.001\)).

Total productivity was also significantly higher at those programs with a full-time research coordinator (Median Productivity = 24) compared to programs with a part-time (Median Productivity = 10) or no research coordinator (Median Productivity = 9) (Kruskal-Wallis test, \(p < 0.001\)). Table 5 compares the presence of a research coordinator/director for the five program types.

Increasing Scholarly Activity: Respondent Perceptions - Of the 173 respondents, 138 suggested program changes which might increase scholarly activity. Just over 53\% (\(n = 73\)) indicated that increasing or adding protected faculty time would facilitate more scholarly work; 26.8\% (\(n = 37\)) noted that more institutional support/infrastructure for research (e.g., research coordinators, statisticians, assistants) would be helpful. Access to money or grants was indicated as a barrier to scholarship by 24\% (\(n = 33\)) of respondents; while 12.3\% (\(n = 17\)) suggested adding more faculty (either new or more experienced) would increase scholarly work. Another 12\% (\(n = 16\)) of respondents suggested requiring scholarly activity of faculty; while 8.7\% felt scholarly activity would increase with more faculty incentives, increased faculty development sessions on research topics, or by requiring residents to conduct a research project under faculty guidance. Other recommended changes that might increase scholarly activity included increased faculty interest in scholarship, curricular changes, more collaborative work, or the use of mentors.

Relationship between Productivity and Supportive Program Characteristics - The last section of the survey asked respondents about the presence of various program characteristics believed to facilitate scholarly activity. Total productivity was significantly higher at programs with protected faculty time for scholarly activity (Median Total Productivity = 19) compared to those programs without protected time (Median Total Productivity = 10) (Mann-Whitney \(U\) test, \(p < 0.001\)). Further analyses determined this finding was not a function of program type, as none of the five program types was significantly more likely to offer faculty protected time for scholarly activity.

Total productivity was significantly higher at those programs offering fellowship training (Median Total Productivity = 15) compared to those without fellowship training (Median Total Productivity = 10; Mann-Whitney \(U\) test, \(p = 0.006\)). Further analyses determined that offering fellowship training was significantly more likely at university-based programs (48.3\% of programs), compared to other program types of which between 11.1\% and 23.8\% offered such training, \(\chi^2 = 11.6\) \(p = 0.021\). Having a
supportive program director or an available research specialist/data analyst was not found to be associated with increased productivity, nor were available research funds, participation in a practice research network, or having a research curriculum.

Discussion

The limitations of this study must be considered when interpreting the results. While response rates between 35-45% are typical for published studies using web-based and email surveys, caution is warranted for generalizing our results to all residency programs. There is the possibility of a skewed sample as we likely received responses from programs with research coordinators and/or a higher interest in this topic.

The responding programs included a wide variety of activities in their definition of scholarly activity. Of the items in Table 3, thirteen were endorsed by 50% or more of the programs. Those include the obvious peer-reviewed publications and conference presentations, as well as writing grant proposals and serving as a journal reviewer. However, non-peer-reviewed publications and presentations and rejected peer-reviewed articles, just to name a few, were also endorsed as scholarly by half the sample. This suggests that many programs accept broader definitions of scholarly activity than those used in the literature, which has typically examined productivity in terms of funded grants and peer reviewed publications or presentations. This indicates, perhaps, that productivity research in the literature may not accurately reflect the breadth of scholarly activities undertaken by family medicine faculty.

A wide range of educational and service activities were endorsed as scholarly by our respondents. The lack of a standard definition of scholarly activity presents a dilemma for family medicine as a discipline. Our results support the position that the traditional definition of scholarship is unnecessarily narrow.Fincher, et al. argue persuasively that creative teaching, educational leadership, and educational methods that are rigorously substantiated are consistent with the definition of scholarship. A broader definition of scholarship is needed especially in community-based programs where the educational mission is of central importance but the infrastructure for traditional research is lacking. While educational endeavors should be considered legitimate academic activities, the application of clear criteria for judging scholarship, such as those proposed by Glassick, et al., is necessary to maintain high academic standards. Otherwise, outcomes will be of questionable value and will tend to reinforce the impression that family medicine is not as intellectually rigorous as other fields of medicine.

Requirements for scholarly activity were comparable to what has been found in previous literature: a higher proportion of programs (67.6%) responded that scholarly activity was encouraged, but not required. The percentages of programs who reported having a full-time, part-time or no research director also closely replicated those found by Neale, with the highest percentage reporting having no research coordinator. Scholarly activity productivity was typically higher at programs that had a research coordinator/director, as well as those programs where scholarly activity was required of some or all faculty. Compared to other program types, the highest level of productivity was found at university-based programs. Of the 29 university-based programs responding, 55% required scholarly activity of some or all faculty, and 86% had full or part-time research coordinator/directors. In addition, a university infrastructure supportive of research may increase productivity at university-based programs. This is similar to past research that has noted that having resources to support scholarly activity is associated with increased productivity.

While university-based programs had more scholarly activities reported, the scholarly activity productivity of community-based residency programs was higher than researchers expected. Despite having fewer resources (Table 5), faculty in community-based programs publish articles and make presentations at regional and national
meetings on a regular basis. As stated earlier, the productivity results of our survey are likely inflated due to the possibility of a skewed sample of those who self-selected to fill out the survey, however the results may still provide a reference point for programs that desire to increase scholarly activity productivity but currently have no benchmarks in this area.

Dedicated time for scholarly activity was found to be a programmatic characteristic of central importance. Although protected time is not the only environmental characteristic that creates a supportive culture for scholarship, the results of this study are consistent with previous findings of higher total productivity at programs with protected faculty time for scholarly activity. Contrary to work by Oeffinger et al., however, we found no differences across programs types in offering protected time.

This relationship between time and productivity is also apparent when looking at respondents perceptions of barriers to scholarly activity. Lack of time was reported by 53% of respondents as a barrier to scholarship. Past research using structured interviews with program directors indicated lack of time as the greatest obstacle to scholarly activity. Similarly, Ferrer found small negative correlations between scholarly productivity and time spent on patient care and teaching responsibilities. When considering the programmatic characteristics found to be associated with increased productivity, it is important to note these relationships are not causal. We have no evidence that increasing protected faculty time or adding fellowship training will automatically increase productivity. For example, faculty interest in scholarly activity, which was not specifically addressed in this study, may influence faculty productivity regardless of protected time or having a supportive infrastructure. What we do know is that faculty perceive the need for more time, and think this increased time would facilitate scholarly activity.

Conclusion

The results of our study, although limited, can help programs as they strive for success in the generation and sharing of new knowledge. These findings provide increased understanding of how programs define scholarly activity, as well as a reference point for programs that desire to increase scholarly activity productivity but currently have no benchmarks in this area.

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Appendix 1

Survey of Scholarly Activity in Family Medicine Residency Programs Items

Demographics
1. Program Size (total number of family medicine residents) ___
2. Number of FTE (Full Time Equivalent) Faculty Physicians ___

3. Please enter the number of faculty
   MD/DO ___
   PhD/PsyD/PharmD/EdD ___
   MS/MA/MSW ___
   Other ___

4. Program type
   ___ Community based, unaffiliated
   ___ Community based, university affiliated
   ___ Community based, university administered
   ___ University based
   ___ Military based

5. How many years has the program been in existence? ____

6. Does the program have a research director/coordinator?
   Yes, Full Time
   Yes, Part Time
   No

7. Is scholarly activity:
   ___ Required of all faculty
   ___ Required of some, not all faculty
   ___ Encouraged but not required
   ___ Not expected

Defining Scholarly Activity
8. Programs differ in what professional activities are considered to be scholarly activities. Which of the following would your program consider to meet the criteria of scholarly activity?

   Publication in a peer-reviewed journal
   Publication in non-peer reviewed journal
   Publication of newspaper articles
   Publication of trade magazine articles
   Publication of letter to the editor
   Publication of office newsletter
   Writing a grant proposal
   Submitting to FPIN (Family Practice Inquiry Network)
   Submitting to a peer-reviewed publication an article that is rejected
   Submitting to a national meeting a presentation proposal that is rejected
   Presentation at national / regional peer-reviewed meetings
   Presentation at national / regional non-peer-reviewed meetings
   Presentation to non-peer-reviewed state meeting
   Presentation on a professional topic to a community group (senior/adult/youth groups)
   Presentation at resident conferences
   Presentation for medical staff
   Presentation at CME conference
   Presentation as an invited speaker at a state academy meeting
   Supervising resident research projects
   Developing innovative curriculum projects
   Instructing certification course
   Serving on an IRB (Institutional Review Board)
   Serving in a elected office at a state academy

   Membership in national professional or scientific societies
   Serving on community board/committees
   Participation in community fundraisers
   Serving as a reviewer for a peer-reviewed professional journal
   Other ________________________
Research Productivity
9. In the past year, how many times were faculty involved in the following:
   - Presentations at professional meetings
   - Poster presentations at professional meetings
   - Publications (peer reviewed)
   - Publications (non-peer reviewed)
   - Research grants
   - Innovative curriculum developed

10. In the past year, how many were involved in the above activities:
    - Physician Faculty ___
    - Non-physician faculty ____

11. What changes to your program would increase scholarly activity?

Program Support
12. Please indicate all of the following possessed/applicable to your program:
    - A program director supportive of faculty scholarly activity
    - An available research specialist
    - Available funds for research
    - Protected time provided for faculty to participate in scholarly activity
    - Curriculum on research
    - Participation in practice research network
    - Fellowship training

13. Any other comments on scholarly activity: