

A Survey of US Pharmacy Deans: Continued Growth in Pharmacy Education and Research Is Projected for 2010-2015

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Abbreviated title: Projected growth in pharmacy education and research 2010-2015

ABSTRACT

Study Objectives. A prospective study using survey data from US pharmacy deans to explore projected growth in pharmacy education and research from 2010 to 2015 relative to internal and external environmental factors.

Design. Prospective survey analysis.

Measurements and Main Results. A survey about growth in PharmD programs, postgraduate professional and graduate programs was emailed to all US pharmacy deans. Survey data were aggregated to project national growth in PharmD graduates, residents/fellows, graduate students, faculty, graduate research faculty and postdoctoral fellows. Feasibility of implementing the growth schedules was studied using AACP Faculty Vacancy Survey data and consideration of the national economy, growth trends in other health professions and healthcare reform. The response rate (66%), respondents accurately predicting 2010 PharmD graduate numbers (within 0.5% of AACP projections) and residency growth rates suggested a representative sample. Five-year growth projections were: 21% (entry-level PharmD graduates), 58% (residents/fellows), 17% (graduate students), 23% (postdoctoral fellows), 13% (all faculty) and 19% (graduate/research faculty). Vacancy data showed 3-year downward trend in most disciplines, in retirements and in leaving academia for other positions.

Conclusions.

Aggressive growth in education and research is planned despite a continued weak national economy. The growth agendas are supported by faculty vacancy data trends which suggest better availability of qualified faculty in most disciplines. University-sponsored residencies and fellowships have the highest projected growth levels of all segments studied (58% over five years) supporting ACCP and ASHP commitments to more residency-level training in the US pharmacist workforce. More residencies and fellowships also contribute to the need for clinical faculty. Realization of the growth projected in this study may be influenced by the economy and other factors but having more pharmacists trained to higher levels presents opportunities for pharmacists in primary care and other clinical roles, in research and in the implementation of healthcare reform.

Introduction

The increased number of pharmacy programs, increases in the size of classes and new campuses in established pharmacy programs raise questions about finding sufficient, qualified faculty and retaining a reasonable balance between the supply of and demand for pharmacists. Retrospective data about the last decade are available and have been used to address these questions.^{1,2} But these analyses are retrospective while the educational landscape, the national economy and healthcare reform, all factors that potentially influence the pharmacist supply/demand balance and the ability to staff expansions, continue to change thereby calling into question any conclusions based on past trends. To gain a prospective insight on these issues, we undertook a national survey addressing the period of 2010 to 2015 with a focus on the growth of the pharmacy education and research enterprises.

The expansion of PharmD training programs, campuses and class size has received much attention.^{3,4,5} Other aspects of pharmacy educational growth such as the availability of qualified faculty require information about the growth of residency, fellowship and graduate programs. Growth of the research enterprise within schools/colleges of pharmacy requires prospective plans for adding graduate students, pharmacy and postdoctoral fellows and faculty who are able to support graduate education and research. This study attempts to address these considerations prospectively.

The need for growth in pharmacy education, which we broadly define to include PharmD faculty, students, residents, as well as graduate students, faculty and post-doctoral fellows has been documented. Beardsley, Matzke and Rospond et al reported on the 2005 Council of Faculties and Council of Deans within the American Association of Colleges of Pharmacy (AACCP), which identified demand for pharmacy faculty increasing by about 20% over the next 10 years.⁶ This article also cited a 27% increase in the number of individuals participating in the American Society of Health-System Pharmacy (ASHP) residency matching program between 2003 and 2005. Knapp estimated a need (not a forecast of demand) for pharmacists in academia to be 3,250 FTEs in 2020 as compared to 2,600 in 2001.⁷ It is important to recognize that the conclusions drawn in these research efforts preceded the current economic downturn, which is reshaping supply and demand across the nation.

Patry and Eiland report that faculty shortages in pharmacy tie to the fact that faculty who began careers during the capitation period of the 1970s will soon retire.⁸ In addition, they note that efforts to solve this shortage are mixed since individuals going into residency training are growing, but students pursuing graduate education are in decline. With respect to residency training, a 2006 American College of Clinical Pharmacy (ACCP) position statement on residency training cites a shared ASHP and ACCP goal (established in 2003) of 3,000 accredited residency positions available in 2007 as compared to the approximately 1700 positions available at that time.⁹ This interim goal was described as a step along the way to achieving the strategic vision of approximately 75% of the 10,000 annual pharmacy graduates estimated for 2020 who would complete a PG1 residency.⁹

Dowling et al report that the demand and opportunities for clinical pharmaceutical scientists “have never been greater.”¹⁰ This opportunity for clinical research scientists is not only present in pharmacy education, but also in the pharmaceutical industry. Fagan writing in *Pharmacotherapy* in 2006 discussed this same problem noting that neither graduate education nor fellowship training were meeting the current or future needs for clinical pharmacy scientists.¹¹ Bauman and Evans

proposed a national effort to “reinvigorate research fellowship training for PharmD students” to prepare future clinical pharmacy scientists.¹²

Growth in health education programs is not limited to pharmacy. The Center to Champion Nursing in America cites 2006 data from the Health Research and Services Administration that stated “the US must graduate 90 percent more nurses from its nursing programs to meet the growing need.”¹³ The US Secretary of Education’s Commission on the Future of Higher Education discussed the preparation of the health workforce in a 2006 issue paper authored by Eleanor Schiff.¹⁴ She cites double digit increased demand for services between 2004 and 2014 across dentistry, pharmacy, nursing and medicine. In order to meet this expected demand, Schiff reports that the Association of American Medical Colleges (AAMC) recommends medical schools increasing enrollment by 15% and consider 30% by 2015 to meet future physician needs. She goes on to report that nursing must also expand capacity, but accomplishing this goal is complicated by a nursing faculty vacancy rate of 8.5% and that too few nursing students are pursuing Master’s or other graduate nursing degrees. A similar situation has emerged with dental faculty who have a 10% annual turnover rate and are approaching retirement over the next 10-15 years (average age is 52).

The growth in primary care health professionals is supported by new funding provided by the Affordable Care Act to expand this workforce. The website HealthCare.gov reports a shortage of approximately 21,000 primary care physicians in 2015 and associated government funding to train, develop and place more than 16,000 new primary care providers over the next five years.¹⁵ Funding is designated in part to train 500 new primary care physicians by 2015, 600 physician assistants, and 600 nurse practitioners. A larger physician shortage has been estimated at 124,000 doctors by 2025 by the AAMC.¹⁶ In addition, the Carnegie Foundation for the Advancement of Teaching released a 2010 study that looked broadly at medical education. Among the report’s seven policy recommendations is a collaborative effort within medicine to develop a medical workforce policy for the United States.¹⁷

The purpose of this study was to investigate expected growth in pharmacy education and research, specifically entry-level PharmD graduates, pharmacy faculty, pharmacy residents and fellows, graduate students and postdoctoral fellows in pharmacy programs and graduate faculty during the period 2010 to 2015. A second purpose was to integrate the resulting data with data from other sources to inform planning and decision making regarding pharmacy education and research.

Methods

A ten-question prospective survey focused on growth in pharmacy education and research was developed and tested for face validity by a six-person pharmacy faculty team serving on an AACP Taskforce. The survey items requested baseline data for 2010 and growth projections for 2012 and 2015. Growth in the following areas was investigated: the number of full time employed (FTE) faculty on the current campus; FTE faculty on a new or branch campus; entry-level Pharm.D. graduates on new or branch campuses; pharmacy residents and fellows; graduate students; postdoctoral (post Ph.D.) fellows and graduate faculty. A copy of the survey is presented as Table 1. The e-survey (SurveyMonkey, Palo Alto, CA) was sent to pharmacy deans through the AACP CEO Deans’ Listserv on May 10, 2010. A reminder e-mail was sent to the same listserv on June 3, 2010. The survey was closed June 29, 2010. Descriptive data analysis was accomplished in a commercial

spread sheet program (Excel, Microsoft Corporation, Redmond, WA). The initial dataset was analyzed for duplicate records and to eliminate responses from non-US programs.

Three measures were used to test whether the survey respondents were representative of all pharmacy programs. The first was the survey response rate. Second, survey data regarding 2010 graduates were extrapolated to all schools and compared to AACP estimates of the Class of 2010 graduates. Third, survey residency/fellow growth rates were compared to residency growth rates reported in a recent study regarding PGY1 residency growth.¹⁸ Extrapolations were performed by dividing the aggregate respondent data for that cohort by the ratio of the number of respondents to 118 (total possible respondents). For example, 76 respondents reported a 3,203 faculty members for 2010. Extrapolated total US pharmacy faculty would be 3,203 divided by 76/118 which equals 4,973.

Data regarding faculty vacancies for 2007, 2008 and 2009 were obtained from annual AACP Faculty Vacancy Surveys (Danielle Taylor, AACP, written communication, September 11, 2010).

Results

At the close of the survey on June 30, 2010, 85 responses had been received. The AACP CEO Deans' Listserv has 118 recipients exclusive of AACP staff and programs outside the US. Four pairs of duplicate records were eliminated. Two responses came from the same source but had different data. We judged this pair to reflect a new or branch campus and retained both records. Three responses from outside the US were eliminated from analysis. The final number of records analyzed was 78 and the final response rate was 78/118 (66.1%). We identified six records that listed over 300 entry-level PharmD graduates for 2010, 2012 and 2015. Based on AACP data, no school had over 300 graduates in 2010 so we eliminated these responses from analysis about PharmD graduates but retained their remaining data for other analyses.

Regarding the representative nature of the respondents, a total of 11,653 pharmacy graduates in 2010 were reported when survey responses were extrapolated to all schools. This figure compares to AACP 2010 estimates of 11,593 graduates, a difference of 0.51%.¹⁹ Projected five-year residency/fellow growth from survey data (57.6%) was compared to actual and projected data regarding college-based residency growth in a 2009 study.¹⁸ The 2009 study reported an average annual residency college-based growth rate of 9.6% for 2007-2010, which would result in a 58.1% growth over five years. Although the earlier study did not include growth for fellowships, we judged the reported growth rates to be similar. These two factors in addition to the high response rate (66.1%) suggest that the survey respondents were representative of all US pharmacy schools.

Table 1 shows a summary of the responses related to entry-level PharmD graduates. The entry-level PharmD graduates are expected to increase 21% from 2010 to 2015 with 14,095 projected graduates in 2015 based on extrapolation from respondent data. Thirty-seven schools reported no plans for PharmD growth over the five-year period.

Table 2 shows a summary of the responses related to FTE faculty growth. The FTE faculty are expected to increase 13% from 4,973 in 2010 to 5,719 in 2015 based on extrapolation from respondent data. Over the same period, graduate faculty are projected to grow 19% from 1,608 in

2010 to 1,969 in 2015. The percentage of faculty considered graduate/research faculty will increase slightly from 32.3% to 34.4%.

Table 3 below shows a summary of the responses related to residents and fellows. Residents and fellows are expected to increase 58% from 576 in 2010 to 920 in 2015 based on extrapolation from respondent data.

Table 4 shows a summary of the responses related to graduate program growth. Overall, graduate students are expected to increase 17% from 3,295 in 2010 to 3,852 in 2015 based on extrapolation from respondent data. Postdoctoral fellows are expected to increase 23% from 851 in 2010 to 1,059 in 2015 (extrapolated). Twenty-three programs reported no graduate students over the 2010-2015 period. The largest graduate program reported 200 graduate students and no plans for growth to 2015. The average number of graduate students per program in 2010 was 28.

Table 5, which portrays time trend data about faculty vacancies, shows downward trending in faculty vacancies from 2007 to 2009 despite increased numbers of schools. Table 6, which portrays reasons for vacancies, shows downward trending in all areas except vacancies created by leaving for industry positions. The 13 vacancies in this category were similar to 11 vacancies in 2008 and substantially less than 24 vacancies in 2007.

Discussion

The survey responses suggest that pharmacy schools anticipate growth in all areas over the next five years. This aggressive growth agenda is presented despite continuing weakness in the national economy. Some aspects of the weak economic, for example, fewer jobs in pharmacy practice and the pharmaceutical industry, could result in better availability of faculty thereby supporting the growth agenda described. Below we examine the individual cohorts studied.

Entry-level Doctor of Pharmacy Graduates. This continued growth is likely in response to earlier predictions of pharmacist shortages. The projected 21% increase in PharmD graduates from 2010 to 2015 would raise the number of graduates to approximately 14,095. Approximately half of the responding programs will be expanding in the next five years. This occurs in what currently appears to be a tightening market for PharmD graduates. Based on the findings of the Aggregate Demand Index Project's National Pharmacist Demand, there has been a downward shift in demand for pharmacists over the last three years.²⁰ The demand for community pharmacy practitioners has fallen below the level of balance between supply and demand.²¹ While remaining above the balance point, the demand for institutional based practitioners was significantly depressed in June 2010. These data appear to support the observation that the job market for pharmacists is as tight as it has been in more than 30 years.

Pharmacy Faculty. FTE faculty positions are expected to increase 13% from 2010 to 2015. This level of growth would seem very optimistic considering that the estimates submitted by respondents do not include faculty losses through retirements; therefore, the actual number of faculty needed exceeds the survey estimates. However, the AACP Faculty Vacancy Survey data show that earlier reports of increasing faculty shortages⁶ are not borne out by newer data showing downward trends in vacancies over the past three years. The trend is observed across all disciplines including pharmacy practice which has been a cause of much concern in recent years. Even faculty retirement, an

important factor in earlier reports, showed a downward trend. We suggest that economic factors including reduced value of retirement accounts and fewer positions in other settings such as industry and health care may be contributing to these trends. If these trends hold, the ability to find qualified faculty to meet growth goals, is likely more favorable than would have been forecast less than five years ago but still many not satisfy the demands of the growth agenda.

Resident/Fellows.

It is anticipated that the demand for residency- trained pharmacists will continue to grow well into the foreseeable future. This survey identified 69.2% of respondents that would add residents and/or fellows over the next 5-year period. This projected growth increase from a mean of 4.9 to 7.8 pharmacists per school in post-graduate training represents a 60% increase over the 5-year period or approximately 9.8% per year.

In 2006 the strategic plan of the ACCP presented a recommendation that a “formal postgraduate residency training become mandatory before one can enter practice”.⁹ The College recommended this plan be implemented by the year 2010. In addition, ASHP has developed their own statement on residency training and that all new graduates providing direct patient care should complete a post-graduate-year-one residency.²² It is recognized that health care systems provide the bulk of residencies; colleges of pharmacy either fund or have direct affiliation with 22.8% of all ASHP-accredited first year residency programs. The 9.8% per year identified in this survey is very similar to the 9.6% college-based and 8.3% overall annual growth rate identified by Knapp and colleagues following a survey of residency programs obtained from the ASHP Online Residency Directory (June 2007-June 2008).¹⁸ To meet the aforementioned mandates of ACCP and ASHP, these investigators estimated growth rate of 17% per year or doubling of the current rate would be required to meet the projected demand for residencies. Currently there are at least five applicants per available ASHP accredited post-graduate-year-one residency position and 61.8 % (1114/1801) matched with a program.²³ It appears that even if the projected growth rate was sustained or even increased, there is sufficient demand by pharmacy graduates for these training positions. The combination of societal needs for pharmacists providing patient care and to fill clinical faculty positions in colleges of pharmacy may still be inadequate under these projections.

It should be noted that not all the projected 60% growth provided by colleges of pharmacies are residencies as this number also included fellowship programs. Fellowship programs, post-graduate-year-two residencies and PhD programs in experimental therapeutics provide a major contribution to faculty hired to tenure-leading positions. Although not formally tracked, some have suggested that the number of individuals entering fellowship training has decrease significantly over the past few years.¹² Considerable debate has been generated regarding which track provides the best future for training the greatest number of clinical pharmaceutical scientists.^{10,12} Regardless, this survey identified in 2009, a total 212 clinical sciences/practice vacancies in colleges of pharmacies. This equates to nearly two open positions per pharmacy school. The need for highly trained faculty is identified by these unfilled positions and if allowed to remain unfilled with the current economic status of states, colleges and universities, some of these positions could be eliminated.

Graduate Programs

The number of students completing graduate degrees is expected to increase 17% from 2010 to 2015 which is slightly less than PharmD graduates. Post doctoral fellows are expected to increase 23% by

2015. Over the same period, graduate faculty are projected to grow 19% or roughly 1.5 times the expected growth for faculty in the professional pharmacy program. Although the study did not differentiate between Master's and PhD level programs, the number of students in pharmacy-based graduate programs is large and growing suggesting that universities are committing resources and finding that this area of education can contribute to their success. Due to the broad scope of the survey, further research will be required to address the limitations of data in this area.

Primary Care and Healthcare Reform. The number of Americans lacking adequate access to primary health care is staggering. Manolakis and Skelton, writing in a 2009 AACP Issue Brief on the "Pharmacists' Contributions to Primary Care in the US—Collaborating to Address Unmet Patient Care Needs", cite reports that project a shortage of primary care providers at 44,000 by 2025 and second, that over 56 million Americans lack adequate access to primary health care due to shortages in primary care physicians.²⁴ Vanderveen writing in a Wall Street Journal editorial in July 2010 addresses the same concern; however, he is looking at the issue post-healthcare reform and asks how our healthcare system will provide care "for the estimated 30 million more patients who will be insured under the health law passed earlier this year."²⁵

The most recent dialogue and debate within the profession of pharmacy specific to pharmacist supply have centered on the shortage of pharmacists to fill traditional pharmacist roles. While this has been a relevant anchor for this debate in the recent past, perhaps we need to adjust our view for a changed landscape. Recognizing the lack of primary health care providers, the changes to our health care system, and the potential role pharmacists can play increasing access to primary care and addressing the patient care need of appropriate medication management, perhaps it is time to look at the supply of PharmD students, pharmacy residents, graduate students and fellows, and their associated faculty supply through a different lens. Taking this new perspective into consideration, it may be the case that while the economic downturn has shifted our nation's pharmacist supply away from a shortage, we may be very well positioned from a training standpoint and through our recent PharmD graduates, residents and fellows, to contribute immediately and substantively on inter-professional health care teams focused on solving our national primary care challenges and implementing the expanded coverage envisioned by healthcare reform legislation.

Limitations. The survey respondents represented about two thirds of all pharmacy programs. Although we cannot assure that this sample is representative of all programs, the fact that reported 2010 entry-level PharmD graduates matched closely to AACP projections based on enrollments and that projected residency growth rates were similar to those from another survey directed suggested that the respondent sample is representative of all schools. The survey did not distinguish between pharmacy residencies and fellowships; therefore, the growth rate of each of these programs cannot be determined from survey data. Likewise, in graduate programs, the study did not distinguish between Master's and PhD degrees or identify degrees by discipline. Although this lack of specificity was chosen as a means to increase response rate by keeping the survey shorter, further research will be needed to more precisely address growth in each type of program.

Conclusions

Aggressive growth in both education and research is planned despite a continued weak national economy. The educational and research growth agendas are supported by faculty vacancy data trends which suggest better availability of qualified faculty in all disciplines. University-sponsored

pharmacy residencies and fellowships have the highest projected growth levels of all segments studied (58% over five years) supporting ACCP and ASHP commitments to more residency-level training in the US pharmacist workforce. More residencies and fellowships in turn contribute to the need for clinical faculty. Realization of the growth projected in this study may be influenced by the economy and anticipated growth in medicine and nursing programs but having more pharmacists trained to higher levels presents opportunities for pharmacists in primary care and other clinical roles, research and in the implementation of healthcare reform.

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Table 1. Survey Questions.

For each question, choose **ALL** that apply.

1. Between now and 2015, we plan to increase our **pharmacy faculty**.
 - a. Yes, we plan to increase pharmacy faculty at our current campus.
 - b. Yes, we plan to add pharmacy faculty at new campuses or branch campuses.
 - c. No, we do NOT plan to increase our pharmacy faculty.

2. Estimate of pharmacy faculty:
 - a. In 2010, we have _____ FTE faculty.
 - b. In 2012, we will have approximately _____ FTE faculty.
 - c. In 2015, we will have approximately _____ FTE faculty.

3. Between now and 2015, we plan to increase our **entry-level PharmD graduates**.
 - a. Yes, we plan to increase entry-level PharmD graduates at our current campus.
 - b. Yes, we plan to increase entry-level PharmD graduates at new campuses or branch campuses.
 - c. No, we do NOT plan to increase our entry-level PharmD graduates.

4. Estimate of total entry-level PharmD graduates:
 - a. In 2010, we have _____ entry-level PharmD graduates.
 - b. In 2012, we will have approximately _____ entry-level PharmD graduates.
 - c. In 2015, we will have approximately _____ entry-level PharmD graduates.

5. Between now and 2015, we plan to increase our **resident/fellow numbers**. (Fellows refer to PharmD research fellows.)
 - a. Yes, we plan to increase College-sponsored residents/fellows in the next 5 years.
 - b. No, we do NOT plan to increase College-sponsored residents/fellows in the next 5 years.

6. Estimate of total residents/fellows: (Fellows refers to PharmD research fellows.)
 - a. In 2010, we have _____ residents/fellows.
 - b. In 2012, we will have _____ approximately residents/fellows.
 - c. In 2015, we will have _____ approximately residents/fellows.

7. Between now and 2015, we plan to increase the size of our **graduate program(s)**. (Postdoctoral fellows refer to post-PhD fellows and graduate program faculty refer to faculty supporting graduate—as opposed to PharmD or other professional—programs.)
 - a. Yes, we plan to increase the number of graduate students.
 - b. Yes, we plan to increase the number of postdoctoral fellows.
 - c. Yes, we plan to increase graduate program faculty.
 - d. No, we do NOT plan any increases in the graduate program size.

8. Estimate of total graduate students:
 - a. In 2010, we have _____ graduate students.
 - b. In 2012, we will have approximately _____ approximately graduate students.
 - c. In 2015, we will have approximately _____ approximately graduate students.

9. Estimate of total postdoctoral fellows: (Postdoctoral fellows refer to post-PhD fellows.)
 - a. In 2010, we have _____ postdoctoral fellows.
 - b. In 2012, we will have _____ approximately postdoctoral fellows.
 - c. In 2015, we will have _____ approximately postdoctoral fellows.

10. Estimate of graduate program faculty: (Graduate program faculty refer to faculty participating in graduate programs.)
 - a. In 2010, we have _____ research-focused faculty.
 - b. In 2012, we will have _____ approximately research-focused faculty.
 - c. In 2015, we will have _____ approximately research-focused faculty.

Table 2. Anticipated Growth of PharmD Graduates, 2010, 2012, 2015

Category	Will Add Entry –Level PharmD Graduates on the Current Campus (%)	Will Add Entry-Level PharmD Graduates at New or Branch Campuses (%)	Will NOT be Adding Entry-Level PharmD Graduates (%)	Average Entry-Level PharmD Graduates per Program in 2010	Average Entry-Level PharmD Graduates per Program in 2012	Average Entry-Level PharmD Graduates per Program in 2015
Entry-Level Graduates	38.9	8.3	51.4	99	112	119

Table 3. Anticipated Growth of FTE Faculty: 2010, 2012, 2015

Category	Will Add FTE Faculty on the Current Campus (%)	Will Add FTE Faculty on New or Branch Campuses (%)	Will NOT be Adding Faculty (%)	Average FTE Faculty per Program in 2010	Average FTE Faculty per Program in 2012	Average FTE Faculty per Program in 2015
FTE Faculty	75.6	17.9	14.1	41.1	45.9	48.5

Table 4. Anticipated Growth in Residents and Fellows: 2010, 2012, 2015

Category	Will Add Residents and/or Fellows (%)	Will NOT be Adding Residents or Fellows (%)	Average Entry-Level Residents and/or Fellows per Program in 2010	Average Entry-Level Residents and/or Fellows per Program in 2012	Average Entry-Level Residents and/or Fellows per Program in 2015
Residents and Fellows	69.2	23.1	4.9	6.3	7.8

Table 5. Anticipated Growth in Graduate Students, Postdoctoral Fellows and Graduate Faculty: 2010, 2012, 2015

Category	Will Add to This Category in the Next 5 Years (%)	Average Number in this Category per Program in 2010	Average Number in this Category per Program in 2012	Average Number in this Category per Program in 2015
Graduate Students	39.3	27.9	29.8	32.6
Postdoctoral Fellows	20.2	7.2	8.1	9.0
Graduate Faculty	21.4	13.6	15.6	16.7

Table 6. Pharmacy Faculty Vacancies*: Total and by Discipline, 2007 and 2009

Variables	2007	2008	2009
Schools Reporting	94 of 97	93 of 97	101 of 114
Total Vacant Positions	595	425	396
Administration	42	25	19
Pharmaceutical Sciences	173	112	124
Clinical Sciences/Practice	306	265	212
Social Administrative			
Sciences	47	39	32
Research	27	23	9

*Data source: AACP Faculty Vacancy Surveys (Danielle Taylor, AACP, written communication, September 11, 2010)

Table 7. Reasons for Pharmacy Faculty Vacancies*: 2007 to 2009

Reason for Vacancy	2007	2008	2009
New Position Created	239	179	147
Left for a Pharmacy Practice Position	25	41	33
Moved to Another School	69	42	43
Left for an Industry Position	24	11	13

*Data source: AACP Faculty Vacancy Surveys (Danielle Taylor, AACP, written communication, September 11, 2010)

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