

Academia: Pharmaceutical Sciences

Background

Academia is an attractive option for pharmacists who enjoy working with students while also having opportunities to engage in research. With the increase in the diversity of academic positions, it can no longer be said that an academician's career is confined to the laboratory or classroom. Three distinct profiles are included in this series: Clinical Practice; Economic, Social, and Administrative Sciences (ESAS); and Pharmaceutical Sciences. Each profile provides information on the similarities and differences in these three academic careers.

Pharmaceutical sciences faculty often work with other health care professionals in a consultative capacity or as a consultant for government and industry research endeavors. Therefore, these academicians have an indirect impact on patient care.

The "Academia" category may be loosely defined as belonging to a university faculty, usually that of a college of pharmacy. However, pharmacists in this area also hold academic positions in medical, veterinary, dental, and other health care-related educational institutions. Positions may range from the dean of a college of pharmacy to an entry-level teaching/research position. In addition, pharmaceutical sciences faculty have expertise in a variety of areas including but not limited to: anatomy, physical/chemical sciences, pharmacology, toxicology, cell and molecular biology, biochemistry, immunology, formulation, biological sciences, and pharmaceuticals.

Duties of pharmaceutical sciences faculty may include administrative activities, scientific research, teaching student pharmacists, supervising research and teaching graduate students, speaking and/or publishing in scientific venues, and teaching student pharmacists through experiential practice sites.

In the 2006–2007 academic year, there were 4,340 full-time pharmacy faculty at the nation's colleges and schools of pharmacy. (Source: http://www.aacp.org/Docs/MainNavigation/InstitutionalData/6676_2005-03.pdf. Accessed August 25, 2007.)

One respondent from Texas noted that the position "provides the opportunity to make meaningful changes in how pharmacists are educated."

Characteristics

Twenty-five individuals responded to the 2007 *APhA Career Pathway Evaluation Program* survey. Seventy-two percent of the respondents had an entry-level degree in pharmacy, with 32% having earned a PharmD degree. Forty-four percent of respondents had a residency or fellowship. Sixty-eight percent reported an advanced degree (PhD). An additional 16% indicated certificate training of some kind.

Respondents' average age was 46 years old. Slightly more than half (56%) of respondents

were male. Income data show over half (36%) earn between \$80,000–\$100,000, while 56% earn \$100,000 or more per year with 14% earning greater than \$170,000, the highest percentage in the survey related to academia. These salary figures include consultative fees that are received. The average time worked per week was 54.6 hours, among the highest of all job areas surveyed. Respondents represented 14 states.

The vast majority of respondents indicated that they were satisfied with their work, with 92% indicating “extremely satisfied.” On a similar scale, respondents said that they felt their work was challenging, with 88% indicating “extremely challenging” and 12% indicating “somewhat challenging.”

One Ohio respondent summed up the thoughts of others regarding satisfaction for the position, stating, “We are helping to develop the next generation of pharmacy practitioners.”

Insider’s Perspective

What aspects of the job are most appealing?

Twenty-eight percent of the respondents said the most appealing aspect of their work was “working with students.” The second highest ranked item was “research,” cited by 24% of the respondents. One respondent from California indicated that appealing aspects of the position included “doing research that contributes to society.”

Working on clinical trials, drug discovery, and other areas of research were cited in comments as positive aspects of the position.

What aspects of the job are least appealing?

Among the least appealing aspects for these faculty members was a 21% response for “administrative activities” and 12% for “political issues.”

Working within a large organization, such as a university, usually requires a considerable administrative workload in addition to teaching and research responsibilities. “Committee and paperwork,” was noted by one California respondent. Another respondent from New Jersey stated concern for the “over-scheduling of the calendar for committee meetings.”

What advice should students and practitioners consider when selecting the option of academia in the pharmaceutical sciences?

Finding a setting that keeps one’s interest was the most frequent factor cited by respondents. A respondent from Utah wrote that “you have to love what you do—research, teaching.”

Critical Factor Ratings

Interaction With Patients

Interaction with patients and the public was identified on the low range, at 3.0. Most researchers indicated they have little if any interaction with the general public.

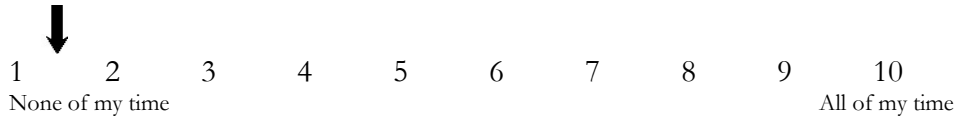
= 3.0
 $\sigma = 2.0$



Conducting Physical Assessments

Relatively little time is spent in conducting physical assessments. Given the type of research focus pharmaceutical sciences faculty have reinforces the low ranking for this factor. This was the lowest-rated factor for this profile.

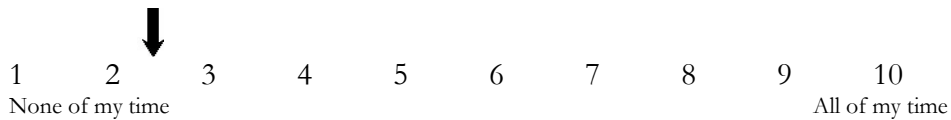
= 1.4
 $\sigma = 0.6$



Interpreting Laboratory Values

Again taking into account the roles that pharmaceutical sciences faculty have, there is little opportunity to interpret laboratory values for patients. However, laboratory values are used for other functions in the research being conducted.

= 2.4
 $\sigma = 1.5$



Continuity of Relationships

Pharmaceutical sciences faculty responded in the low range with a 3.6 ranking for continuity with patients or consumers, indicating that many are not involved in a long-term or continuing relationship with patients. Some respondents indicated that specific projects lend themselves to relationships, but when the project ends so do the relationships.

= 3.6
 $\sigma = 3.0$



Multiple Task Handling

One of the higher ratings at 8.9, multitasking is a near-universal aspect of these academic positions. One respondent from Virginia listed “teaching, student development and internal motivation, willingness to work hard, and handle many items at once.” This was the highest rating for this factor in the survey.

= 8.9
 $\sigma = 1.1$



Problem Solving

The response to this question indicates the need for these researchers to seek out new solutions for new problems, versus being able to rely on previously useful approaches.

= 7.2
 $\sigma = 2.1$



Focus of Expertise

Respondents indicated only a slight tendency toward having sharply defined areas of expertise versus a broader area of expertise. This may be caused by the wide breadth of research that is included in this field, collaborative projects, and teaching.

= 6.8
 $\sigma = 2.5$



Innovative Thinking

A high rating of 8.4 in this area reinforces the need for innovative solutions and thinking. One respondent from California stated, “The opportunity exists to contribute to the discovery and development of a new drug.”

= 8.4
 $\sigma = 1.3$



Management/Supervision of a Business

Many of the respondents indicated that they spend little to no time managing a business. Only 8% of respondents' time is spend on business-related activities.

= 2.7
 $\sigma = 2.1$



Pressure/Stress

An upper mid-range rating of 7.0 indicates that academicians have a slight tendency toward experiencing stress or pressure in their work. Some stress is associated with publishing articles in professional journals and obtaining funding for research. One Utah respondent indicated that the position is “stressful because of having to manage many people with not enough time allowed for everything.”

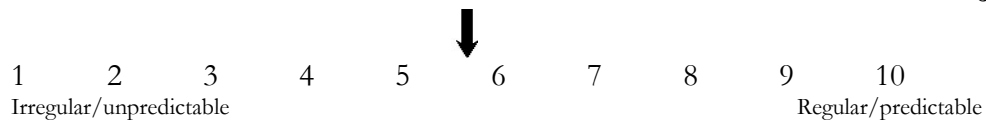
= 7.0
 $\sigma = 1.8$



Work Schedule

Academicians responding to this survey are around the mid-point of the range of unpredictable versus predictable work scheduling. One respondent stated, “There can be very long hours dependent on the research project.”

= 5.7
 $\sigma = 3.2$



Part-Time Opportunities

Academic settings infrequently offer part-time work opportunities. However, this varies by institution and the type of academic position.

= 2.5
 $\sigma = 2.1$



Job-Sharing Opportunities

Job-sharing is not a common practice in academic institutions, which is reinforced by the low rating for this factor.

= 2.2
 $\sigma = 1.9$



Exit/Re-entry Opportunities

Exit/re-entry opportunities are low in this practice environment.

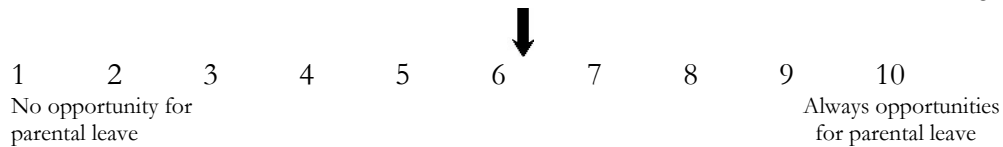
= 2.8
 $\sigma = 2.5$



Parental Leave Opportunities

Parental leave opportunities ranked higher than others in the area of work-related options. Most institutions provide the opportunity for parental leave.

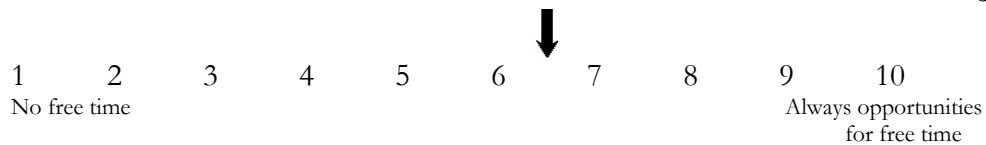
= 6.2
 $\sigma = 3.2$



Leisure/Family Time

Academicians reported varying experiences regarding time for leisure and family activities. Some said they have adequate time for these activities, while others claimed to have very little time. One respondent wrote, "Balancing work and family time is very tricky, but can be done."

= 6.5
 $\sigma = 2.2$



Job Security

Pharmaceutical sciences faculty enjoy a high level of job security, at 8.2, ranking highly across all careers surveyed. Employment contracts, tenure, and academic-year appointments contribute to this stability. This is similar to other academic positions.

= 8.2
 $\sigma = 1.6$



Opportunities for Advancement

To a high degree, academicians enjoy opportunity for advancement. Universities are large organizations with constantly changing and widely varying personnel needs, leading to openings and promotion opportunities, both within the pharmacy areas and administration within the university setting. Research scientists also have the opportunity to look at other science-related programs at the university. There is a hierarchy within academia that includes the following positions: lecturers, clinical instructors, post-doctoral fellows, assistant professors, associate professors, full professors, assistant deans, associate deans, and deans. This was the highest rating for this factor in the survey.

= 8.4
 $\sigma = 1.9$



Opportunities for Leadership Development

The 8.7 response indicates that respondents feel they have ample opportunities to develop their leadership potential. Such opportunities could be within the college of pharmacy itself, within the greater university setting, nationally within the specialty field (e.g., drug development), or within the professional association field (e.g., APhA).

= 8.7
 $\sigma = 1.2$



Community Prestige

Pharmaceutical sciences faculty are perceived, generally as employees of a university, as prestigious members of the community. Being employed by such a prestigious institution as a college or university brings a high level of respectability.

= 8.1
 $\sigma = 1.8$



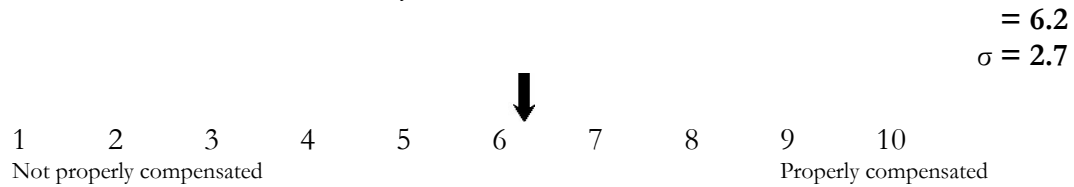
Professional Involvement

The second-highest ranking by the participants in this survey is their level of opportunity to participate in professional association meetings and similar events within the profession of pharmacy. Accordingly, it is not unusual to see an academically based pharmacist in a leadership position in a state or national professional association. Indeed, these pharmaceutical sciences faculty also are involved nationally with the pharmaceutical industry and the government.



Income

Respondents indicated that they are slightly above the mid-range of being properly versus not properly compensated for their professional services. It is not uncommon, however, for faculty members to be expected, even encouraged, to seek additional outside sources of income, through consulting projects, for example, which would supplement their faculty salary. Nevertheless, a number of faculty indicated that a low income was an issue for them.



Benefits (vacation, health, retirement)

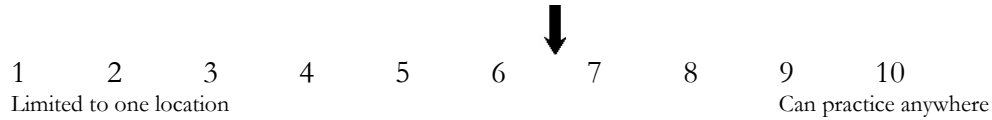
This ranking moves toward the upper end of the scale, indicating a higher level of benefits in the form of vacation time, health insurance, and retirement packages. This is not surprising, since faculty members are typically employees of large institutions, which normally offer such benefits to all their employees.



Geographic Location

With a moderate ranking on this factor, respondents have a generalized opportunity to practice many places in the country among the nation's 100 colleges and schools of pharmacy. However, not all colleges of pharmacy offer opportunities for high-end technology research; this may be the reason why this group ranks this factor the lowest of the three academic groups.

= 6.6
 $\sigma = 3.3$



Autonomy

An upper-end ranking of 8.5 indicates that faculty members are trusted professionals with a high level of independence and decision making. The underpinning of this autonomy, however, is an elevated sense of responsibility, self-discipline, and initiative. One respondent stated that academic pharmaceutical scientists “have the ability to set their own research agenda.”

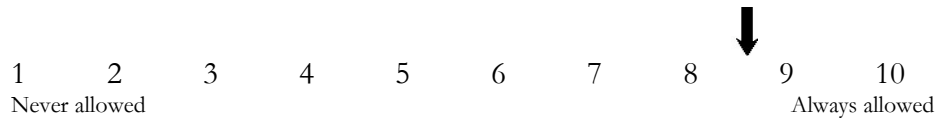
= 8.5
 $\sigma = 1.0$



Self-Worth

College and university settings encourage the advancement of personal value and the full development of the potential of student and teacher alike. Many of these respondents are sought by industry for their knowledge.

= 8.6
 $\sigma = 1.2$



Future Focus

Academicians are highly focused on the future of the profession and health care. Activities such as teaching and research are concerned with advancing knowledge and understanding the latest scientific information.

= 7.8
 $\sigma = 1.6$



Professional Prestige

The third-highest rating among respondents, at 9.2, indicates a high level of prestigious exposure within the pharmacy profession. Former students, as well as other pharmacists, appropriately hold faculty pharmacists in high esteem. This was the highest rating for this factor in the entire survey.

= 9.2
 $\sigma = 0.9$



Unique Practice Environment

Faculty members indicate a relatively middle to high level of uniqueness in their practice settings. Researchers can be involved with a research project that is set in a unique environment.

= 7.0
 $\sigma = 2.7$



Advanced Degree

Rated as the highest factor at 9.7, advanced/graduate degrees are listed as a necessity for this career path. Sixty-eight percent of respondents hold a PhD degree. This was the highest rating for this factor in the survey.

= 9.7
 $\sigma = 0.7$



Entrepreneurial Opportunity

Respondents indicated a mid-level rating for entrepreneurial opportunities in their practice settings. External consulting or research activity presents such opportunities.

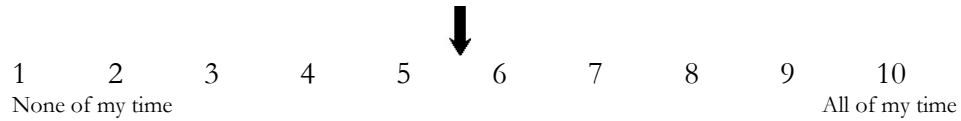
= 4.9
 $\sigma = 2.9$



Working With Teams

Respondents tend to have some team-related projects. In addition, they tend to team teach courses.

$$= 5.8$$
$$\sigma = 2.0$$



“On Call”

Respondents indicated a low “on call” need for the positions. A few respondents in clinical trial areas are required to be “on call” for a specific amount of time. In addition, specific research activities may require an “on call” status.

$$= 2.6$$
$$\sigma = 2.6$$



Work on Holidays

Academicians tend not to work on holidays at their place of employment. However, if a research project requires laboratory data collection, hours may need to be completed during a holiday.

$$= 3.4$$
$$\sigma = 2.8$$



Work on Weekends

This is similar to the above statement, although more work is required on a weekend versus a holiday. Nonetheless, this factor is rated at the lower end of the scale.

$$= 4.4$$
$$\sigma = 2.9$$



Mean Scores for Critical Factors

1. Interaction With Patients	3.0
2. Conducting Physical Assessments	1.4
3. Interpreting Laboratory Values	2.4
4. Continuity of Relationships	3.6
5. Helping People	4.1
6. Collaboration With Other Professionals	5.6
7. Educating Other Professionals	6.0
8. Variety of Daily Activities	7.9
9. Multiple Task Handling	8.9
10. Problem Solving	7.2
11. Focus of Expertise	6.8
12. Innovative Thinking	8.4
13. Applying Scientific Knowledge	8.6
14. Applying Medical Knowledge	7.2
15. Creating New Knowledge by Conducting Research	6.0
16. Management/Supervision of Others	5.1
17. Management/Supervision of a Business	2.7
18. Pressure/Stress	7.0
19. Work Schedule	5.7
20. Part-Time Opportunities	2.5
21. Job-Sharing Opportunities	2.2
22. Exit/Re-entry Opportunities	2.8
23. Parental Leave Opportunities	6.2
24. Leisure/Family Time	6.5
25. Job Security	8.2
26. Opportunities for Advancement	8.4
27. Opportunities for Leadership Development	8.7
28. Community Prestige	8.1
29. Professional Involvement	9.3
30. Income	6.2
31. Benefits (vacation, health, retirement)	8.8
32. Geographic Location	6.6
33. Autonomy	8.5
34. Self-Worth	8.6
35. Future Focus	7.8
36. Professional Prestige	9.2
37. Unique Practice Environment	7.0
38. Advanced Degree	9.7
39. Entrepreneurial Opportunity	4.9
40. Additional Training	8.6
41. Interacting With Colleagues	7.8
42. Travel	4.0
43. Writing	6.7
44. Working With Teams	5.8
45. "On Call"	2.6
46. Work on Holidays	3.4
47. Work on Weekends	4.4
48. Presentations	6.0

References

Schommer JC, Brown LM, Sogol EM. *Career Pathway Evaluation Program 2007 Pharmacist Profile Survey*. June 2007.

American Association of Colleges of Pharmacy. Academic Pharmacy's Vital Statistics. April 2007. www.aacp.org

Professional Organizations

Accreditation Council for Pharmacy Education (ACPE)
20 North Clark Street, Suite 2500, Chicago, IL 60602
Tel: 312-664-3575 Fax: 312-664-4652
www.acpe-accredit.org

American Association of Colleges of Pharmacy (AACP)
1426 Prince Street, Alexandria, VA 22314
Tel: 703-739-2330 Fax: 703-836-8982
www.aacp.org

American Association of Pharmaceutical Scientists (AAPS)
2107 Wilson Blvd., Suite 700, Arlington, VA 22201
Tel: 703-243-2800 Fax: 703-243-9650
www.aaps.org

American College of Clinical Pharmacy (ACCP)
3101 Broadway, Suite 650, Kansas City, MO 64111
Tel: 816-531-2177 Fax: 816-531-4990
www.accp.com

American Foundation for Pharmaceutical Education (AFPE)
One Church Street, Suite 202, Rockville, MD 20850
Tel: 301-738-2160 Fax: 301-738-2161
www.afpenet.org

American Pharmacists Association (APhA)
1100 15th Street NW, Suite 400, Washington, DC 20005
Tel: 800-237-APhA Fax: 202-783-2351
www.pharmacist.com

American Society of Health-System Pharmacists (ASHP)
7272 Wisconsin Avenue, Bethesda, MD 20814
Tel: 301-657-3000
www.ashp.org

NOTE: For further pharmacy organization information, please visit the American Association of Colleges of Pharmacy Web site at www.aacp.org and click on the "Related Pharmacy Organizations" link.