

## 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 2012-2013 academic year, there were 6,040 full-time pharmacy faculty at the nation's colleges and schools of pharmacy.

(Source: <http://www.aacp.org/about/Pages/Vitalstats.aspx> Accessed June 2013.)

One respondent noted that the position provides "an opportunity to affect the future of the profession, and enhance the lives of future practitioners."

### Characteristics

Sixty-nine individuals responded to the 2012 *APhA Career Pathway Evaluation Program* survey in this career area. Seventy-two percent of the respondents had an entry-level degree in pharmacy, with 24% having earned a PharmD degree. Twenty-nine percent of respondents had a residency or fellowship. Seventy-four percent reported an advanced degree (PhD). An additional 11% indicated certificate training of some kind.

Respondents' average age was 51 years old. More than half (63%) of respondents were male.

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Income data show that over half (56%) earn over \$110,000 per year, with 17% earning greater than \$150,000. These salary figures include consultative fees that are received. The average time worked per week was 50.5 hours.

The majority of respondents indicated that they were satisfied with their work, with 57% indicating “extremely satisfied” and 34% indicating “somewhat satisfied.” On a similar scale, respondents said that they felt their work was challenging, with 54% indicating “extremely challenging” and 40% indicating “somewhat challenging.”

One Ohio respondent summed up the thoughts of others regarding satisfaction for the position, stating the most appealing aspects of the job are: “The interaction with students [and] the ability to work on projects that you truly enjoy and are interested in.”

### **Insider’s Perspective**

#### **What aspects of the job are most appealing?**

Thirty-five 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 indicated that appealing aspects of the position included “presenting science information for pharmaceutical application.”

Working on clinical trials, academic freedom, and flexibility 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 included committee work and meetings, administrative work, grant writing, and a heavy workload.

Working within a large organization, such as a university, usually requires a considerable administrative workload in addition to teaching and research responsibilities.

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

One respondent wrote: “This aspect of pharmacy is only for those that love learning, love people, and want to work hard to make a difference for everyone.”

### **Critical Factor Ratings** **Interaction With Patients**

Interaction with patients and the public was identified on the low range, at 3.4. Most researchers indicated they have little if any interaction with the general public.

= 3.4



### **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.

= 1.3



### **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.

= 2.6



### **Continuity of Relationships**

Pharmaceutical sciences faculty responded in the low range with a 2.7 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.

= 2.7



### **Helping People**

Surprisingly, this factor was listed at a 4.1 mid-range level. There was a wide variety of responses because some research is more direct in patient care than others.

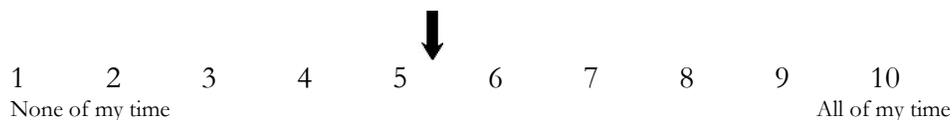
= 4.1



### Collaboration With Other Professionals

Collaboration with other professionals ranked just above the mid-point with a 5.3 rating, indicating that these academicians collaborate more often than others. Perhaps this can be explained by the statement of one respondent, “Clinical trials mean interacting with patients, physicians, pharmacists, and other researchers.”

= 5.3



### Educating Other Professionals

Academicians spend their time educating other professionals as part of their involvement in university, government, and industry projects. One respondent stated, “Working with colleagues in other disciplines and fields is rewarding.”

= 4.8



### Variety of Daily Activities

A rating of 7.1 reflects the academic research pharmacists’ role as a varied one. A respondent simply stated, “No two days are alike.”

= 7.1



### Multiple Task Handling

One of the higher ratings at 7.4, multitasking is a near-universal aspect of these academic positions. One respondent listed “teaching, student development and internal motivation, willingness to work hard, and handle many items at once.”

= 7.4



### 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.

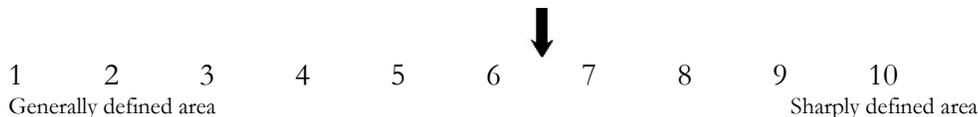
= 7.3



### 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.

= 6.5



### Innovative Thinking

A high rating of 8.2 in this area reinforces the need for innovative solutions and thinking. One respondent stated, “The opportunity exists to contribute to the discovery and development of a new drug.”

= 8.2



### Applying Scientific Knowledge

Pharmaceutical sciences faculty rely heavily on the application of scientific knowledge in their practice activities, whether in teaching or research.

= 8.4



### Applying Medical Knowledge

Relative to the application of scientific knowledge, research faculty apply less medical knowledge in their work. Many respondents indicated that their work is scientific versus medical in the early stages of their research and that the medical application comes once a product or project moves toward patient use.

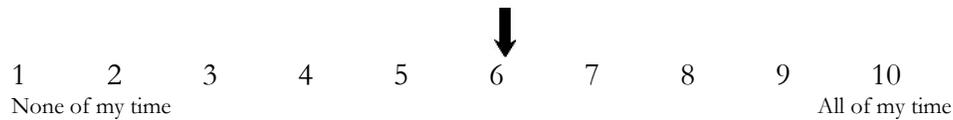
= 5.0



### Creating New Knowledge by Conducting Research

The slightly higher than mid-range ranking of 6.1 for creating new knowledge by conducting research is perhaps lower than expected. However, respondents indicated that only 25% of their time is devoted to research – this is less than in 2007 when 34% of respondent time was indicated as research. This decline could be due to a variety of factors including increased pressure to spend time in the classroom rather than in the lab.

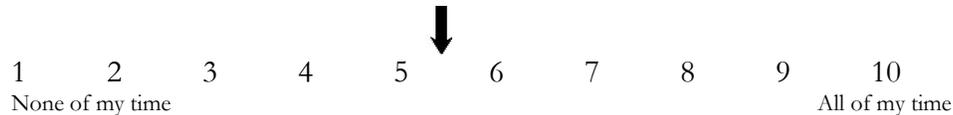
= 6.1



### Management/Supervision of Others

A mid-range response from participants shows that this group is responsible for the management and supervision of others. This is related to the number of graduate students that work with faculty in their labs and in clinical trials.

= 5.4



### Management/Supervision of a Business

Many of the respondents indicated that they spend little to no time managing a business. Only 9% of respondents' time is spend on business-related activities.

= 3.5



### Pressure/Stress

An upper mid-range rating of 7.2 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 respondent indicated that the position is “stressful because of having to manage many people with not enough time allowed for everything.”

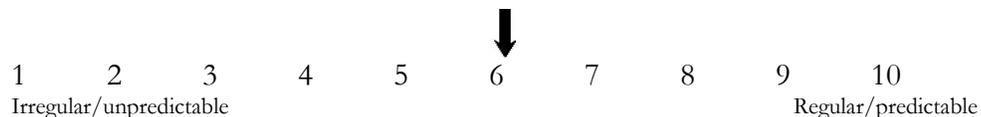
= 7.2



### 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.”

= 6.1



### Part-Time Opportunities

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



### Job-Sharing Opportunities

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



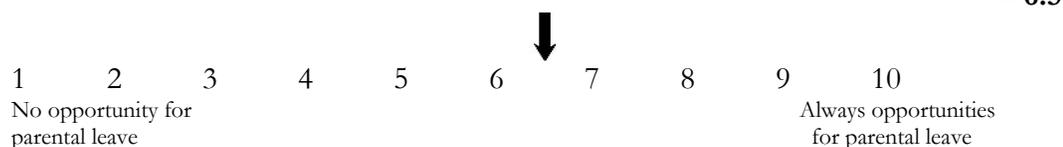
### Exit/Re-entry Opportunities

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



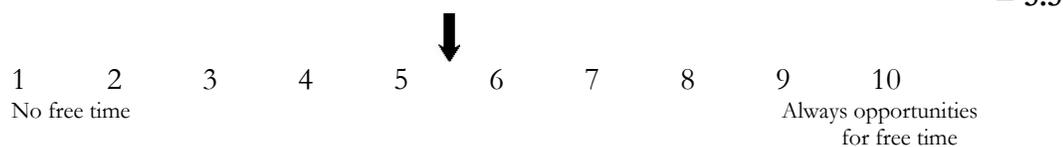
### Parental Leave Opportunities

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



### 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.”



### Job Security

Pharmaceutical sciences faculty enjoy a relatively high level of job security, at 7.4, ranking highly across all careers surveyed. Employment contracts, tenure, and academic-year appointments contribute to this stability. This is similar to other academic positions.

= 7.4



### Opportunities for Advancement

To a high degree, academicians in the pharmaceutical sciences 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.

= 7.2



### Opportunities for Leadership Development

The 7.3 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).

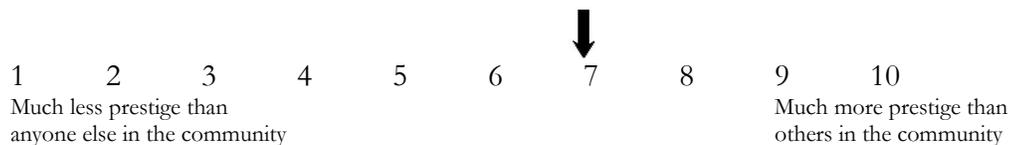
= 7.3



### 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.

= 6.9



### Professional Involvement

Highly ranked 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

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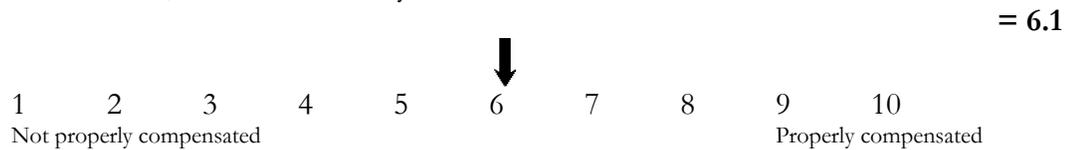
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government.



### 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 120+ 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.



### Working Remotely

A moderate score of 4.8 reflects that working remotely is an option for some activities but not likely possible for 100% of the job. Some requirements such as grading papers or conducting literature research could be done from a home office. Faculty are typically expected to have office hours and lecture for teaching requirements.







### Mean Scores for Critical Factors

1. Interaction with people	3.4
2. Performing physical assessments	1.3
3. Interpreting laboratory values	2.6
4. Continuity of relationships	2.7
5. Extent to which effect is direct	4.1
6. Collaboration with other professionals	5.3
7. Educating other professionals	4.8
8. Variety of daily activities	7.1
9. Multiple task handling	7.4
10. Problem solving	7.3
11. Focus of expertise	6.5
12. Innovative thinking	8.2
13. Applying scientific knowledge	8.4
14. Applying medical knowledge	5.0
15. Creating new knowledge by conducting research	6.1
16. Managing others	5.4
17. Managing business operations	3.5
18. Pressure/Stress	7.2
19. Work schedule	6.1
20. Part time opportunities	2.9
21. Job sharing	1.9
22. Exit and re-entry	3.9
23. Parental leave	6.5
24. Free time for leisure/family activities	5.5
25. Job security	7.4
26. Opportunities for advancement	7.2
27. Opportunities for leadership development	7.3
28. Community prestige	6.9
29. Professional involvement	8.2
30. Income	6.1
31. Benefits (vacation, health, retirement)	7.6
32. Geographic location	5.6
33. Working Remotely	4.8
34. Autonomy	7.5
35. Self-Worth	7.9
36. Future focus	7.9
37. Professional prestige	7.6
38. Unique practice environment	6.8
39. Advanced degree	9.2
40. Entrepreneurial opportunity	4.5
41. Additional training	7.5
42. Interacting with co-workers	7.8
43. Travel	3.3
44. Writing	6.0
45. Working with teams	6.2

**References**

Schommer JC, *APhA Career Pathway Evaluation Program for Pharmacy Professionals 2012 Pharmacist Profile Survey*. February 2013.

American Association of Colleges of Pharmacy. Academic Pharmacy's Vital Statistics. June 2012. [www.aacp.org](http://www.aacp.org)

**Professional Organizations**

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