

**FINAL REPORT OF THE 2008-09 COUNCIL OF FACULTIES
TASK FORCE ON PHARMACEUTICAL SCIENCES AND RESEARCH EDUCATION**

TASK FORCE MEMBERS

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Overview:

Concern for the effect on the quality of teaching and research associated with the rapid expansion of schools and colleges of pharmacy prompted the 2007-2008 Chair of the Council of Faculties, Brian Crabtree, PharmD. to establish a Task Force on Pharmaceutical Science and Research Education. In 2007-2008 the Task Force made 14 recommendations to the Council (Appendix I). Julie Szilagyi, Ph.D. the 2008-2009 Chair of the Council of Faculties, appointed Stephen Cutler and Sandy Zito as Co-Chairs of the Task Force and charged the group with prioritizing the 2007-08 recommendations based upon need and feasibility. Steve Cutler and Sandy Zito met via teleconference to form a strategy on addressing prioritization of these recommendations. The first three recommendations were been marked for further consideration which led to 2 major charges to address: develop quantitative requirements for all pharmaceutical science courses and developing quantitative and qualitative measures related to the Standards on teaching. The Task Force was divided into two subcommittees (teams) to address each of the major charges.

Rationale:

Pharmacy is a science-based clinical practice profession. In order to provide a comprehensive education it is necessary to strike a balance between the science foundation and the application of that science to practice. To meet this challenge we must give the student the knowledge, skills and abilities to enable them to succeed in entry-level careers in all areas of the profession, i.e. community, institutional, industry, academic, governmental, and pharmacy association management. In addition, to assure advancement of the profession, students must be given the ability to grow in their careers. This requires that a comprehensive education begin with faculties who have a solid foundation in the science and practice of the profession of pharmacy. Such an approach brings together a faculty that is capable of conducting basic, applied and translational research and scholarship. Ultimately, this advances the profession by assuring students receive a

comprehensive pharmacy education through faculties who bring advanced science and practice into the classroom interaction.

Subcommittees:

Team #1 consisted of Bobbie Riggs, Chandrarhar Dwivedi, Nathan Shanker, Mark Stratton, and Seher Khan while Team #2 is made up of Patrick Callery, Russell Melchert, Ted Roche, and Martin Zdanowicz.

Team #1 was presented with the following charge:

The ACPE standards Appendix B should be used as a starting point for AACP to develop quantitative requirements for all of the pharmaceutical sciences. Once defined, AACP should petition ACPE to modify Appendix B with the number of hours required for specific basic science courses.

Using the data that Dr. Riggs mined for the Task Force in 2007-08, Team #1 should provide estimated averages for the number of credit hours in the basic science courses. The Team is asked to identify a range rather than a set number of credits. This might facilitate establishing contact hours for a given topic in those courses that are integrated.

This team utilized various sources of data to evaluate the Pharm.D. curriculum of a large number of schools and colleges, including websites (schools and colleges, AACP, NABP etc) and surveys of chairs of pharmaceutical sciences and AACP institutional research reports. What was discovered was that 59 out of the 90 schools (62%) surveyed had integrated curricular content and all but one of the schools established after 2002 have integrated curricular content. In addition, of the 56 schools with integrated content:

- 23/56 (41%) Integrate medicinal chemistry, pharmacology and therapeutics
- 27/56 (48%) Integrate just medicinal chemistry and pharmacology
- 1/56 (2%) Integrate medicinal chemistry, pharmacology and pharmaceuticals:

It was not possible to determine contact hours devoted to each of the didactic content from the data collected, primarily because of the considerable number of integrated curriculums. However, it was possible to estimate the distribution of the major content headings from Appendix B:

- Basic Biomedical Sciences = 21%
- Pharmaceutical Sciences = 29%
- Social and Administrative Sciences = 15%
- Clinical Sciences = 35%

Therefore at this time the Team can not make any recommendations as to the quantitative requirements for the individual pharmaceutical sciences. However the Team feels that the current levels form an adequate basis for the scientific foundation of the Pharm.D. curriculum but is concerned that any further decrease would effect the quality of the education.

Team #2 was charged:

The team was asked to look at the ACPE Institutional ratios of students/teachers for teaching (13:1) and research (10:1). The Team was asked to keep Standards Number 24 and 25 in mind as they deliberated on their charge to develop quality enhancement of faculty who teach in the . basic biomedical, pharmaceutical and social and administrative sciences

Standard No. 24: Faculty and Staff-Quantitative Factors

The college or school must have a sufficient number of qualified full-time faculty and staff to effectively deliver and evaluate the professional degree program, while providing adequate time for faculty development, research and other scholarly activities, service, and pharmacy practice.

Standard No. 25: Faculty and Staff-Qualitative Factors

The college or school must have qualified faculty and staff who, individually and collectively, are committed to its mission and goals and respect their colleagues and students. Faculty must possess the required professional and academic expertise, have contemporary knowledge and abilities in current educational philosophy and techniques, and be committed to the advancement of the profession and the pursuit of research and other scholarly activities. Faculty whose responsibilities include the practice of pharmacy must satisfy all professional licensure requirements that apply to their practice. The college or school must foster the development of its faculty and staff, commensurate with their responsibilities in the program.

Guideline 25.1

Full-time faculty should hold an earned doctoral degree appropriate to their responsibilities in the program. Faculty in the sciences should have doctoral education and, to foster scholarship and research, post-doctoral research training or equivalent experience. Pharmacy practice faculty should possess additional professional training (residency, fellowship and/or equivalent experience) and either have or be working towards credentials (for example, specialty certification) relevant to their practice and teaching responsibilities. Faculty should show evidence of scholarship and publication.

In pursuit of their charge Team 2 looked at the growth of schools in conjunction with the growth of qualified faculty to teach both in the scientific and professional parts of the Pharm. D. curriculum. They discovered 2 important facts:

- The growth in science faculty appears to have kept up with the growth of new schools.
- The number of Pharm.D.'s is now equal to the number Ph.D.'s in all schools and colleges.

The team supports guideline 25.1 of the ACPE standard 25 and wants to emphasize the following quote from guideline 25.4: "Faculty, regardless of their discipline, must have or develop a conceptual understanding of current and proposed future pharmacy practice in a variety of

settings. To assure understanding of the foundations of the curriculum and foster collaborative teaching and research, faculty should have a general awareness of the scholarship and research of their colleagues in the other academic disciplines". It therefore follows that schools and colleges should establish faculty development programs aimed at bringing all faculty together to better understand their role in the education of our students. The team recommends AACCP develop programming aimed at accomplishing this goal.

Appendix I

Recommendations from 2007-08 Committee to the 2008-09 Committee

- 1) The ACPE standards Appendix B should be used as a starting point for AACCP to develop quantitative requirements for all of the pharmaceutical sciences. Once defined, AACCP should petition ACPE to modify Appendix B with the number of hours required for specific basic science courses.
- 2) Each school must ensure the number of courses offered in the basic sciences is not reduced from its current level.
- 3) Courses in the basic sciences must be taught by suitably educated PhD faculty.
- 4) Schools are encouraged to develop a knowledge-based examination that all students must pass in order to progress from year to year *or* progress from the didactic part of the curriculum to the experiential portion. An alternative course of action would be to have a minimum GPA that students must achieve in the didactic portion of the curriculum before progressing to the experiential section.
- 5) PharmD programs should have a mixture of both scientific and clinical reasoning, pharmaceutical science knowledge acquisition, and clinical science instruction.
- 6) There should be greater pedagogical emphasis on activities that challenge students to apply what they learn rather than straight traditional or rote lecture.
- 7) Exposure to the research performed by faculty members either through attendance at a specially organized Research Awareness Program, seminars or through participation in a specific mentored research project.
- 8) Availability of a research elective (Independent Study, Research Problems, etc.).
- 9) Attendance at research seminars presented by distinguished faculty and invitees to the college or campus.
- 10) Structured Summer Research Programs with stipends.
- 11) Colleges and schools of pharmacy should explore elective course development to introduce students to research in pharmaceutical and clinical sciences.
- 12) Colleges and schools of pharmacy should explore ways to encourage students to participate in elective research courses and experiences.
- 13) Colleges and schools of pharmacy should explore incentive mechanisms to encourage faculty to participate as mentors in research oriented elective courses.
- 14) Deans of colleges and schools of pharmacy should explore ways to fund students in summer research projects, or provide travel grants for students to attend a regional or national research meeting to present their research results.