Anatomy of a Pharmacy School Startup: Part 2

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ABSTRACT. This is a history of the decisions made and steps taken to build a school of pharmacy. It is based on observations and notes kept in a diary as well as correspondence and reports that were generated in creating the school. This article is the second of five, and it focuses on the second year of planning and development. More specifically, this article covers construction of the School of Pharmacy building, development of policies and procedures, recruitment of students, development of an image for the school, design of the technology initiative, development of an academic blueprint, formulation of a student assessment framework and instruments, and drafting of faculty bylaws. *[Article copies available for a fee from The Haworth Document Delivery Service: 1-800-HAWORTH. E-mail address: <docdelivery@haworthpress.com> Website: <http://www.HaworthPress.com> © 2003 by The Haworth Press, Inc. All rights reserved.]*

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INTRODUCTION

In the first article in this series, I discussed a number of issues that affected the planning of a new school of pharmacy. No matter how comprehensive the planning or excellent the vision, things don't always work the way they were planned. Year 2 began with the faculty and staff in temporary quarters and ended with students, faculty, and staff completing the first academic year of the School of Pharmacy in our new 55,000 sq. ft. facility. It also saw the realization of a number of creative ideas and the sober reality that the plan, while effective, would require revision. In four years, the plan, in the form of a three-inch notebook, was never far from my reach. It was housed in a loose-leaf binder to permit frequent, and sometimes substantial, revisions. This second installment of the five-part series will focus on the first year of life for a new school of pharmacy and the creation of an image that endures seven years after its creation. It will also focus on the implementation of the strategic plan, which is related in a very intimate way to the image you attempt to create for your faculty, students, supporters and, eventually, your alumni.

OUR NEW HOME (JULY-AUGUST, 1996)

The building that would house the new School of Pharmacy was constructed during one of the snowiest winters that Winchester, Virginia, had known in many years. A total of 92 inches of snow fell in the area, much of it in 2 very heavy snowfalls. We visited the construction site weekly to assess progress, and in between we fretted over the weather and unforeseen delays. One delay in particular seemed almost insurmountable. The City of Winchester, as part of the approval process for the new facility, required the construction of a new water tower to ensure adequate pressure for the building and to avoid potential problems in the surrounding neighborhoods. Valley Health Systems, the parent organization to which Winchester Medical Center belonged, agreed to the requirement and immediately initiated two construction projects: a building on its campus to house the pharmacy school and a new water tower on higher ground approximately a mile from the site. Either construction project could have delayed occupancy of the building.

In the end, it was the slow rate at which the water tower filled that almost caused us to implement our contingency plan to start classes in

temporary quarters. Fortunately, we received approval from the city and the fire marshal to occupy the building at 2:00 p.m. on a Friday and began classes at 8:00 a.m. the next Monday. Several of the faculty worked from empty offices for much of the week until office furniture could be delivered, and I have the indelible image of a pharmacy student sitting on the floor of an empty library with his back to a column. It may not have been a perfect start, but it was a very important one.

POLICIES AND PROCEDURES

"Policies and procedures" was a phrase that we were averse to speaking in the initial phases of creating the School of Pharmacy. We assumed, correctly, that eventually the nimble lifestyle that we had enjoyed when the number of decision makers was small would change as we added faculty and staff and change dramatically when students entered the program. In the first year, our culture was defined by rapid decision making using information we were able to gather quickly. As the year progressed, the decision making became more deliberate and involved individuals from outside the School of Pharmacy. Campus standing committees reviewed the proposed curriculum and stamped their seal of approval on the proposed second-year curriculum (Appendix 1). The Vice President for Financial Affairs reviewed and approved the second-year budget. The Southern Association of Colleges and Schools and the American Council on Pharmaceutical Education visited the campus and, after careful review, endorsed our plans for the new program (Appendix 2).

The documentation needed for each of these groups became more complete and detailed. We crafted policies on recruitment, technology in the curriculum, and student and faculty evaluations. Components of the strategic plan began to emerge from individual documents and memoranda developed for various accreditation bodies and for the university administration. The development of the non-traditional Doctor of Pharmacy program began in Year 2, as did the dual-track Pharm.D./M.B.A. program. We created innovative policies on integrated teaching and conflict of interest and authored a professional practice plan (Appendix 3). We formally dedicated the School of Pharmacy and the Dunn Family Apothecary. Each of these areas was important because they began to frame the image people were developing of the School of Pharmacy. The

first area–and perhaps one of the most important–we worked on was to establish policies and procedures for recruitment and admissions.
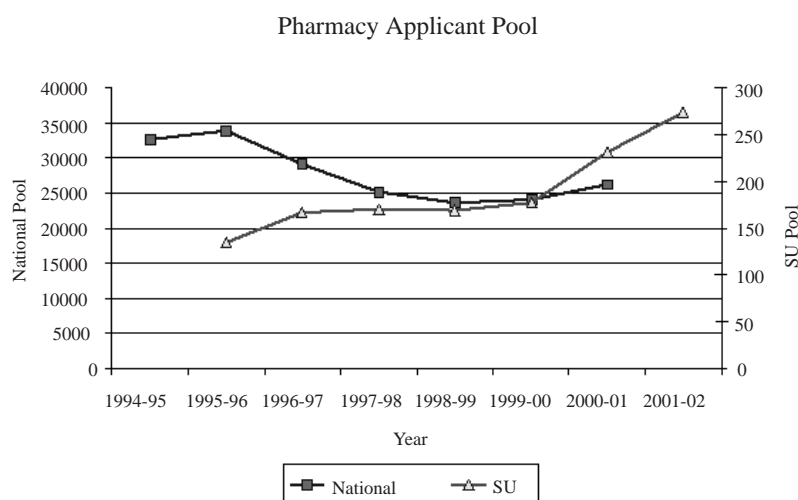
RECRUITMENT

The Assistant Dean for Student Affairs, Dr. David Skelton, worked tirelessly from early in 1996 to the following fall to craft a recruitment strategy that we felt would create an adequate applicant pool to net 70 qualified students. Our initial effort was to identify potential feeder schools within a three-state area (Virginia, Maryland, and Pennsylvania). We assumed (correctly) that the bulk of our applicants would come from students who were within five hours' driving time of Winchester. Winchester sits at the junction of two major interstates (I-81 and I-66) and is close to two others (I-95 and I-64). We identified and then plotted on a map the locations of all four-year colleges/universities and a few large community colleges. The total number was approximately 140 schools. When we requested the names of the prehealth or prepharmacy advisors from the Shenandoah University Admissions Office, we received names for approximately half of the schools. We then began an aggressive calling campaign to update the existing list of advisors and to identify the appropriate individuals at the remaining schools. We were eventually successful in locating an appropriate contact at each campus.

In January 1996, we mailed recruiting materials to the 140 schools on the list. Two weeks after the first mailing, we began calling the 43 schools that we had identified as meeting our criteria as a feeder school (e.g., enrollment, location, and contact name) to establish a date and time for a campus visit. Using mapping software, we created 13 recruitment areas [Pennsylvania (4), Maryland (4), and Virginia (5)] that were then assigned to 2-member faculty/staff teams. Teams could usually cover most of the areas in a day, although some required a full two days.

Shenandoah Valley	Northern Virginia	Roanoke/New River Valley
Central Virginia	Virginia Tidewater	Western Maryland
Central Maryland	Baltimore, Maryland	Eastern Maryland
Western Pennsylvania	North Central Pennsylvania	North East Pennsylvania
Eastern Pennsylvania		

The Assistant Dean assumed responsibility for approximately half of the prospective campuses, and the remaining sites were visited by the teams. During the 4-month period from August 1996-November 1996, we visited over 40 campuses, meeting for a minimum of 1 hour with each advisor and with any students who were interested in pharmacy as a career.

Pharmacy Applicant Pool

The chart above depicts the average number of applications that were received in each of the years since creation of the pharmacy school. It is plotted against the national trends in total applications and ratio of applications to available seats for all pharmacy schools during the startup period. While the numbers may be somewhat misleading because students tend to apply to more than one pharmacy school, the chart nonetheless does present the drop in the application pool that occurred during the four-year period of the school startup. The average number of viable applications received for that four-year period by the Bernard J. Dunn School of Pharmacy is depicted below. The number of viable applications hovered at a ratio of approximately 2:1 until the year after our first class graduated (2000), possibly reflecting the combined impact of the declining applicant pool nationally and the reluctance of students to apply until the school had been fully accredited.

School Year	Graduation Date	Applications	Enrolled	SU Ratio	National Ratio*
Fall 1996	May 2000	135	71	1.9:1	4.1:1
Fall 1997	May 2001	167	64	2.6:1	3.6:1
Fall 1998	May 2002	170	65	2.6:1	3.5:1
Fall 1999	May 2003	169	52	3.3:1	3.1:1
Fall 2000	May 2004	177	68	2.6:1	3.0:1
Fall 2001	May 2005	231	73	3.2:1	2.9:1
Fall 2002	May 2006	273	74	3.7:1	*.*

*Source: AACP Institutional Research Report Series: Profile of Pharmacy Students

In addition to identifying potential feeder schools and establishing a goal of three applications for every opening, we began formulating an aggressive recruitment strategy:

1. Verify the list of transfer counselors or advisors yearly before making the campus visit.
2. Visit productive feeder schools yearly. (Some schools in our immediate area had never been visited by someone from a pharmacy school.)
3. Visit relatively productive feeder schools every other year (e.g., visit personally with each prepharmacy student at least once while he or she is preparing for entry into your school, responding to questions and hand delivering materials).
4. Mail packets to unproductive schools yearly, but don't visit unless requested by the transfer counselor.
5. Once you are established (e.g., have students), arrange to have pharmacy students accompany you on campus visitations to their own prepharmacy campuses to meet prospective students.
6. Create a minimum of three packets for distribution to the advisors and one set of advising materials (e.g., PCAT materials) each year.
7. Create and maintain a recruitment poster for mounting in the hall outside the transfer counselor's office; replace the postage-paid response cards yearly and the poster every other year.
8. Think creatively about your message and how best to convey that message.

BRANDING THE IMAGE

During campus visits the first year, we took note of how other health professions schools, including pharmacy, promoted their image. We found a wide variety of materials, much of which, based upon conversations with students on the campus, was largely ineffective. The image conveyed by wall posters, brochures and postage-paid cards was typically one of "*if you are interested . . . call or write*." The message (and the image) was one of staleness. In our search for a more exciting and enticing message we found holographic art.

The hologram became symbolic of the image we were attempting to convey to prospective students. In one mailing to transfer counselors that accompanied the distribution of the hologram we included the following message:

> *The pharmacy profession is rapidly changing. To convey these changes we recently commissioned the creation of a piece of holographic art that I think graphically depicts these changes and conveys the message that the Bernard J. Dunn School of Pharmacy is preparing pharmacy practitioners for the new health care environment. The hologram consists of three dimensions. The first is mortar and pestle honoring the long history of pharmacy as a profession responsible for the preparation and safe distribution of drug products. The second dimension is the double helix that symbolizes the growing influence of biotechnological research on the pharmaceutical marketplace and the important role of pharmacists in drug product selection, careful monitoring of selected regimens to maximum effectiveness and counseling of patients to minimize unwanted side effects. The third dimension of the hologram is the laptop computer, which represents the importance of information systems in the management of patient and drug product information.*
>
> *The Bernard J. Dunn School of Pharmacy is one of the newest and most innovative pharmacy schools in the country. We have created a unique learning environment that emphasizes careful integration of information, active participation in drug therapy decisions and the effective utilization of the latest information management techniques to create and expand a dynamic personal knowledge base. We encourage you and any of your students who may be considering a career in pharmacy to contact us or to visit the campus.*

> *The hologram is best viewed from a distance of approximately 10 feet and with an indirect light source–similar to a college or university hallway. Please feel free to request additional posters and/or card stacks should you run out.*

In developing our marketing strategy, we realized that, to convey the image of a technology-driven pharmacy school, we needed an innovative visual statement. We found that holograms as a marketing medium are infrequently used but when used they have a fascinating impact on the viewer. Research has shown that, when viewed for the first time, holograms capture and hold the viewer's gaze for roughly twice as long as other marketing media. In addition, foil holograms are durable, can be created in a variety of sizes for maximum flexibility, and are relatively inexpensive.

The story of the hologram begins on a hot, sultry day in Florida. I was attending an American Legion baseball tournament and needed a break from the oppressive heat. I sought refuge in a local library and on a hunch began researching holograms. I had received one ten years earlier at a professional meeting and pasted it onto my business card case. It had retained the image and the fascination for the viewer all those years as it rode around in my pocket or in the bottom of my briefcase. I had always been amazed that I seldom found holograms used as an advertising medium. I found the technology had evolved extensively in ten years, and the hologram I had received had been replaced with lighter, simpler foil holograms that could be used in a variety of settings. With the image of a hologram as the symbol of a technology-driven pharmacy school floating around in my mind, I brought in our graphics artist, Allison Lahan, to discuss the concept. While she readily admitted that she had never worked in holographic art, she was fascinated by the idea.

A search of the World Wide Web yielded the names of several companies and suppliers in the mid-Atlantic area. I contacted one, Robert Sherwood, who was based in Charlottesville, about three hours from our campus. Robert was a local media consultant who represented a large Chicago-based holographic firm. After an exchange of e-mails, we arranged a meeting in Charlottesville to discuss our ideas and to narrow the focus to holograms that we could afford. Allison and I talked with Robert for over two hours at our first meeting and left the meeting with sketches in my diary and an idea of how to begin development of a hologram. Within 2 days, Allison had created 12 thumbnail sketches using the initial sketch from my diary. The sketches were then reviewed

by a focus group of faculty, staff, and students to narrow the choices to three. With the aid of Robert, we created a final draft image that embodied the message described above. Allison then created three separate images in Adobe Photoshop that were superimposed in the darkroom to create the master plate. The company then created two different sizes of foil holograms using the master plate. Development costs, exclusive of the artist's time, were $4,815 (hologram mastering = $4,750; tooling = $65). We initially purchased 3,000 of the larger foil for $2,430, and the next year we purchased 2,000 holograms in the smaller format.

The larger hologram was 5.75×5.75 inches square and was used on the posters we distributed to the feeder schools. We also distributed them to the students, who promptly stuck them to their laptop lids, and every time they opened the laptop, the hologram gleamed at whoever happened to be walking by. I observed our holograms on *display* at national professional meetings, at recruitment fairs and in the classroom. One pharmacy chain was so impressed with the image that they had it re-created as a flat image on tee shirts for distribution to our students at the fall back-to-school picnic.

The second holographic image was a smaller version that measured 1.25×1.25 inch square and was distributed to students at recruitment fairs and at professional meetings as part of the school logo swap. It was suitable several years later for decoration of personal digital assistant tops. Students seemed particularly attracted to the smaller version and would often come by the Dean's Office for sheets before going home on vacation. When asked why they needed the foils, they responded that they thought they were neat and wanted everyone back home to see how great their school was. We could not have found a better marketing medium for inexpensively conveying a very important message that matched our tag line: *The Future of Pharmacy is at Shenandoah Today.* We also incorporated the same theme into articles written about the new school and its occupants (Appendix 4).

TECHNOLOGY INITIATIVE

The technology initiative was a strategy for infusing technology into our academic program and for creating a *brand* for the new school of pharmacy. It consisted of five policies:

1. Use of technology and curricular emphasis
2. Guidelines for hiring faculty

3. Guidelines for promotion and contracts (e.g., incentives)
4. Laptop initiative
5. Laptop assessment.

A brand is only as good as the organization that sports it. Branding, to be effective, must be linked to a real product. In this case, it is the productive use of technology in the classroom and the Internet. In 1996-1997, we began putting an emphasis on the use of technology by faculty and students. One of the initial steps in implementing the strategy was the hiring of a Director of Information Systems. Dr. Thomas Ellington joined the faculty in August with responsibility for traditional drug information activities, the hiring of Drug Information Center staff, and the development of an emphasis on pharmacy informatics. Next, we strengthened the technology infrastructure beyond the initial creation of a 70-seat computer laboratory. The laboratory housed 55 Pentium® workstations, two high-speed laser printers, and a color printer. In addition, Ethernet (twisted wire pair) was installed in the computer laboratory, library, student lounge, and multimedia classroom to permit students to plug their laptop computers into one of 200 data ports. (Ultimately, the number of data ports reached over 600 before we switched to wireless technology.) The initial work was to permit student access to the Internet, the local area network (LAN), and printers in all classrooms. The goal was to permit student access to the network for routine downloading of electronic media, PowerPoint® slides, and materials from the School of Pharmacy Web site.

Laptops were not initially required by the School of Pharmacy because we felt that the faculty had insufficient time or resources to develop a sufficient amount of Web-based materials for student use. The first year, the faculty and staff were charged with the responsibility of developing Web-based materials for each course. The concept was to teach pharmacy students how to use the growing body of clinical literature to solve practice problems and to use the power of the Internet to efficiently create sophisticated instructional resources. *Pharmacy Informatics* is the body of knowledge and techniques concerning the organization and management of information in support of pharmacy research, education, and patient care. The teaching of pharmacy informatics began to be incorporated into the curriculum in Year 2. Dr. Richard Stull, Associate Dean for Academic Affairs, drafted a brief policy statement to guide the faculty and administrators in incorporating technology into the fabric of the School of Pharmacy. It provided guidance in the hiring of faculty and staff, promotion, curricular development, and evaluation. Faculty mem-

bers who joined the School of Pharmacy in 1996-1997 were selected, in part, for their willingness to use technology extensively in the pharmacy curriculum. Very few arrived, however, with the technical skills needed to achieve the goals that had been established for pharmacy students who would attend every lecture and rotation with a laptop. The technology strategy provided the faculty with a blueprint for the use of technology within the pharmacy curriculum.

In April 1997, in a memorandum to the President of Shenandoah University, I laid out the case for requiring pharmacy students to purchase a laptop (Appendix 5). That letter formed the basis for our policy on technology in the curriculum (Appendix 6). The pharmacy school was the first school/division on the Shenandoah University campus and one of the first pharmacy schools in the nation to require a laptop for *all* students. We literally had to develop a technology infrastructure before we could create a technology-based curriculum because Shenandoah University was limited. We had installed approximately 200 twisted wire pair Ethernet connections when the building was constructed, but in Year 2 we added approximately 400 outlets. In the classrooms, we created technology-enabled podiums that contained multiple channel sound controls, video and slide projection capability, and two computers that could be used to access and display two independent presentations over two LCD projectors. Each podium also contained a document camera that doubled as an overhead projector. Faculty who wished to sketch molecular structures or diagram relationships could do so on a large digital white board that was linked to the podium computer. Faculty could print or store white board pages for later retrieval by the students. What the classrooms did not contain were chalk boards. We felt the emphasis should be on using technology extensively, and it was felt that blackboards in large classrooms where much of the material was Web-based would be a wasted investment. The idea was to encourage faculty and students to use the resources of the network.

Prior to implementing the technology in the curriculum policy, we initiated a weekly program of brown bag seminars that focused on developing faculty skills with the various technologies. Eventually, the workshops shifted focus to the design and use of Web-based resources and to the incorporation of active learning techniques into the classroom. It is important to remember that in 1996-1997, when the policy was developed, very few of the existing educational systems had been developed or were available. Our strategy was created using off-the-shelf educational software, was hosted on our own servers at the School of Pharmacy, and was maintained by our own faculty and staff.

The policy went into effect in August of 1997 and was retroactively applied to the first pharmacy class. With the exception of the first pharmacy class, which leased laptops for three years, each class was required to lease a laptop for two years, exchange the laptop for a new one at the end of the second year, and return the leased laptop at the end of the fourth year. Students paid a flat $600/semester for a leased laptop, carrying case, software, replacement insurance, and maintenance. Adoption of a standard configuration with Ethernet compatibility permitted instructional designers and faculty crafting Web materials to focus on the creation of materials without worrying that the students would have problems loading and using the content. It also minimized and standardized system maintenance, thus lowering support costs to a minimum. Students were notified in June 1997, and the policy was implemented in August 1997 (Appendix 7).

The curriculum, as initially drafted and proposed to the American Council on Pharmaceutical Education, emphasized the use of technology in *every* course. While we specifically targeted the development of technology skills in three computer laboratories, each course was expected to use or develop skills with technology. Students, for example, were required to use Internet-based resources to research issues and to use PowerPoint® to present the results. In an average year, students would participate in 12 presentations using PowerPoint® from the technology-enabled podiums.

ACADEMIC BLUEPRINT

The Associate Dean for Academic Affairs, Dr. Richard Stull, arrived in September 1996. He went to work immediately on developing an overall academic blueprint for the School of Pharmacy. Much of this material was included in our updated precandidate proposal that was submitted to the American Council on Pharmaceutical Education January 31, 1997.

The goal of the academic blueprint was to document what we wanted to accomplish educationally, how we were going to accomplish it, and how we would judge whether we had achieved our academic goals. The blueprint began with over 250 competency statements derived from the CAPE Initiative published by AACP. The faculty examined each of the individual competency statements, added its own statements, and then grouped the statements into an overall conceptual framework. The groupings became known as The Shenandoah Twelve, which was a clustering of general competency statements for graduates from our program. The Shenandoah Twelve are:

  I.   Communication
  II. Using Scientific Explanation in the Practice of Pharmacy
  III. Problem Prevention and Solving
  IV. Dispensing of Pharmaceuticals
  V.   Providing Pharmaceutical Care to Individual Patients
  VI. Providing Pharmaceutical Care to Patient Populations
  VII. Social and Professional Interaction and Teamwork
  VIII. Personal, Ethical, and Legal Judgment
  IX. Personal and Professional Growth
  X.   Management Skills
  XI. Advancement of Pharmacy and Health Care
  XII. Promotion of Good Health and Public Welfare

The Shenandoah Twelve and the accompanying competencies provided a blueprint that was then used to map the curriculum. Each competency was assessed for placement in the curriculum, and faculty were asked to ensure that they were included in the educational content and the assessment. This inevitably provided better control over curricular decisions.

Dr. Stull's philosophy was that 300 individual competency statements would be an unwieldy guide for students and for faculty as well. It was better to provide a general framework (The Shenandoah Twelve) as a guiding principle and then link individual competencies to The Twelve. The mission statement echoed The Shenandoah Twelve but spoke to the mission of the entire school (Appendix 8). The assessment plan then flowed from The Shenandoah Twelve.

ASSESSMENT

In each course that was taught, faculty were asked to teach certain concepts within the framework of one or more *processes* (The Shenandoah Twelve) and in one or more *contexts* (see high-impact problems in pharmacy).

We used a multilevel format for evaluating the effectiveness of the academic program. Each of The Shenandoah Twelve competency statements was categorized into four basic levels, based on whether:

- Student skills were present upon admission to the School of Pharmacy (Level Zero)
- The knowledge base is complete or assistance is needed in applying information to a particular problem (Level One)

- A student is able to describe the appropriate knowledge base and when prompted will discuss applicability given a situation and cues or clues about the approach (Level Two)
- A student in a given situation without any cues or clues about the approach will habitually and immediately describe the database and apply the information in problem resolution (Level Three).

Examples of each level and the subsequent skill expectations are listed below.

Level Zero

There is an assumption that certain limited skills and knowledge should exist at admission. Facility with written (in a summary of a problem-solving process) and verbal (in an interview) English might be examples of necessary sub-skills of the communication process. Ability to take accurate notes might be a sub-skill of problem solving. Level Zero would depend on each individual competency, i.e., "communications" may be assessed but "Providing Pharmaceutical Care to Individual Patients" would not be.

Level One

At Level One, an individual will have difficulty in addressing a situation completely, since knowledge and skills will be incomplete. However, for skills and knowledge that have been taught, the doctoral student will:

- Recognize the appropriate factual knowledge but see it as right/wrong, black/white
- Rely heavily on learning (usually using a major textbook) to *create* a knowledge base that is incomplete, partially inaccurate, and unassessed
- With cues or clues about the approach, desirable outcomes, required skills and/or knowledge will be able to identify and describe a model process involved in the situation (usually the ideal model given in class)
- Although knowledge may have been taught contextually, exhibits a lack of awareness that the knowledge or application of a skill may change as a function of context
- May not know where to start without assistance. Given a model and directions about what knowledge and skills are to be applied

within it, the student will be able to apply the model; however, the result may be incomplete, naive, or even incorrect because of the limited attainment of skills and knowledge in various contexts
- May find difficulty reaching a solution.

Level Two

At Level Two, given a situation and cues or clues about the approach, desirable outcomes, required skills and/or knowledge, the doctoral student will:

- Describe the appropriate knowledge base
- Use an internalized knowledge base that is incomplete and relatively unidimensional
- Describe the processes/models involved in the situation
- Inconsistently recognize the aspects of the context that can affect the manner in which the situation is addressed but not necessarily know what the potential outcomes will be
- Apply processes/models and skills completely and systematically *when prompted*. Time will be taken in additional learning, and some false steps will be taken, so that the entire process is less efficient than it would have to be in a practice situation
- Use resources inconsistently: may use them to support personal opinions but overlook information that supports an opposing point of view
- In the face of difficulty and setbacks, may give up and require further support, information, and encouragement, but has the ability to completely address the situation given enough time and support
- May have difficulty in adapting to a new situation unless another strategy is suggested
- May find difficulty reaching a *best* solution and committing to it because of uncertainties; differences of opinion are noted and acknowledged as being valid possibilities
- Self-assess, recognizing some knowledge or decisions as being better than others according to *provided* criteria that may vary with the situation or context.

Level Three

At Level Three, given a situation without any cues or clues about the approach, the doctoral student will *habitually and immediately*:

- Describe, hierarchically, the appropriate knowledge base
- Use an internalized knowledge base that is current, deep, and broad
- Describe the processes involved in the situation
- Describe the role of context and hypothesize the aspects of the context that could affect the manner in which the situation is addressed and what the potential outcomes will be
- Apply processes/models and skills completely, efficiently, systematically, and precisely
- Use primary resources to supplement and support internalized knowledge
- Adapt to a new situation by trying more than one strategy
- After reaching a solution, be able to commit to it
- Self-assess, recognizing some knowledge or decisions as being better than others according to internalized criteria that may vary with the situation or context.

Assessment Matrix

Assessment Type	Assessed	Who	When	Use
Annual Progressions Exam	Shenandoah Twelve, knowledge base to date	Academic Affairs	May 5	Academic Standards Committee for Progression
Classroom Assessments	Knowledge base, Shenandoah Twelve	Faculty	Periodically	Course Grades
Myers Briggs Type Indicator	Personality style	Academic Affairs	Entrance	Formative, Mentors
Portfolio	Information management on common problems; personal growth	Mentors	Beginning of each semester	Formative
Admissions Interview	Verbal and written communication	Assistant Dean for Student Affairs	Pre-Admission	Admission
PCAT	Chemistry, math, English, biology	Psychological Corporation	February, November	Admission
Critical Thinking Dispositions Inventory	Critical thinking dispositions	Academic Affairs	Entrance	Formative
Senior Interview	Program	Academic Affairs	4th year	Program assessment
Employer Survey	Graduate-marketplace match	Academic Affairs	Annually	Program assessment
Alumni Survey	Program	Academic Affairs	Annually	Program assessment

ASSESSMENT INSTRUMENTS

The instruments used to assess faculty, student, and program effectiveness flowed from an early emphasis on accountability (Appendix 9). Faculty members were required to demonstrate that they had created learning materials that addressed the competencies that had been adopted. Students, in turn, were required to demonstrate that they had acquired a predetermined level of competency before advancing through the various levels of the content and the program. The task was to develop a comprehensive set of assessment tools and then refine them as the program matured. The overall thrust was to create a *program* of continuous quality improvement that began with good material and methods and then refined the strategy to make it even better.

We wanted to evaluate the faculty in the classroom and to determine if they were meeting the goals that they had established for themselves and that we had established for the program (Appendix 10). We recruited a large number of young, talented, but relatively inexperienced, faculty who needed continuous feedback to become effective teachers. We wanted to introduce assessment as part of a process that was designed not only to improve instruction, but to strengthen our overall program as well. We wrote guidelines for how to assess, what to assess, and how to provide students with feedback in the classroom. We wanted to make certain that the students were evaluated (Appendix 11).

Then we wanted to evaluate the program in general. We wanted to identify weak components of the program and develop a strategy for addressing those weaknesses, and if we had strengths, we wanted to emphasize them. We put together an annual progressions examination that tied directly back to individual competencies and courses of instruction. The annual Progressions Examination forced students to demonstrate competency in a body of material rather than individual discrete courses. Students were required to demonstrate this competency on both a comprehensive end-of-year database recall examination and a skills-based Standardized Patient Examination. This information was then provided annually to the Curriculum Committee to better enable the committee to assess the overall curriculum. In addition, we developed a series of surveys–exit interviews for the students, employer surveys, and alumni surveys–that provided a longitudinal look at the curriculum and its eventual impact on the practice of pharmacy.

REMEDIATION POLICY

Flowing from the assessment plan was a strategy of remediation (Appendix 12). We anticipated having some students who may experience academic difficulty, and we wanted to have in place a strategy for addressing their needs. At the end of each academic year, the Academic Standing Committee would meet individually with each student in academic difficulty and determine the best disposition for the student and the program. This was a unique approach to students in academic difficulty because, in many cases, students in difficulty at other schools of pharmacy would simply be told to repeat the year. We faced some opposition from faculty who had studied at institutions without a strategy for remediation of students who had failed a year or who had experienced academic difficulty as a result of extenuating circumstances. They were not familiar with competency-based education, in which students may fail one module of a course but master three or four other modules. Students who were incapable of mastering the material due to lack of preparation or poor work habits could still be asked to leave the program, but students whom the Academic Standing Committee thought capable of mastering the material with additional learning (e.g., instruction, mentorship, testing) should be provided the opportunity.

Under the Remediation Plan Policy, faculty were asked to develop a specific remediation plan for each course that they taught. The plan stipulated a diagnostic strategy that the student could use to determine his or her weaknesses and, based upon that assessment, listed additional instruction the student would need before retesting. The plan also committed the faculty to work with the individual student(s) to master the material. The plans were reviewed by the Academic Standing Committee and were in place before the semester began.

If a student was permitted to remediate, he or she would generally work on fulfilling the requirements of the plan during the summer and then retest before the commencement of classes the following fall. The Academic Standing Committee would then review the student's progress and make a decision on whether the student could return the following year and continue with his or her class. In general, the attrition rate for academic reasons was about 7% for the 4 years of study, compared to approximately 12% for other schools of pharmacy. One irony of the Remediation Plan was that other schools of pharmacy learned of our integrated modular approach to remediation and began referring their students to the School of Pharmacy for remediation. In these cases, the school of origin was responsible for the final grade, and Shenandoah

simply provided the online instruction and access to test banks for self-assessment. The individual students were charged a fee of $300 per credit semester hour, with the proceeds going into the Professional Practice Plan. Both the students at Shenandoah and students from other schools of pharmacy have been very complimentary of the Remediation Plan Policy and the concept of integrated, modular content that is competency-based. One indication of the success of the overall assessment strategy was that the American Council on Pharmaceutical Education (ACPE) never questioned our assessment plan. The assessment plan has been used as a model by other schools of pharmacy, including several new schools of pharmacy.

FACULTY GOVERNANCE

The faculty bylaws were drafted to provide the faculty with an organizational framework and a guide to the overall structure of the school as the first faculty envisioned it (Appendix 13). It was a point of departure and was expected to change with the maturation of the program. The bylaws were critical to forming a largely young, inexperienced faculty into a cohesive group.

Equally important to organizational cohesion and morale was the creation of a Conflict of Interest Policy and a Professional Practice Plan (Appendix 14). These two documents were created to address a persistent problem at many educational institutions: the problem of the *haves* and the *have nots*. It is inevitable that some faculty will be more successful at obtaining extramural funding, speaking engagements, or consultancies than others. Sometimes this division results from a lack of interest, but in many cases, some faculty focus on extramural support at the expense of less rewarding activities such as committee work, teaching, or support for professional practice. Over time, the growth in personal wealth or academic war chests can create organizational divisions and lessen the importance of the primary employer (School of Pharmacy) to the overall wealth of the individual. The goal of these policies was to manage extramural income in a constructive way that did not create divisions but also did not discourage faculty from seeking those funds.

From the Conflict of Interest Policy came the Professional Practice Plan. In some ways, the Professional Practice Plan was the more controversial. It required eight drafts before the faculty and the university administration could agree on the final language.

The Professional Practice Plan was designed to manage income from extramural activities. A faculty member was required to seek permission under the Conflict of Interest Policy prior to entering into any agreement with an outside funding agency (e.g., pharmaceutical company) that was *persistent*. Money from these types of agreements would be invested in the Professional Practice Plan, and the distribution of those funds would be governed by a committee of faculty. This included jointly produced works such as Web-based instructional materials. For example, all revenue generated through the remediation of students from other schools of pharmacy was placed in the plan and each year paid for the faculty and staff to meet for a two-day retreat prior to the beginning of the academic year. We have also placed funds resulting from clinical activities (e.g., billing for clinical consulting) into the plan.

Staff who participated in the development of materials or supported faculty who obtained the extramural funding were also eligible to benefit. The plan does not provide for either the university or the School of Pharmacy to benefit from most sources of income. Indirect cost recover was permitted on a case-by-case basis but was generally restricted to research activities where university laboratories and resources were critical to the success of the grant.

The Professional Practice Plan Advisory Committee advises the Associate Dean for Academic Affairs on the distribution of the money, and the Associate Dean manages the accounting and distribution of the funds. Money from the Professional Practice Plan may be used to enhance faculty skills (e.g., grant writing), fund small-scale pilot research projects, and fund travel.

STANDARDIZED PATIENT ASSESSMENT

Shenandoah University School of Pharmacy was one of the few pharmacy programs to use standardized patient assessment coupled with a rigorous annual progression examination to measure the development of clinical assessment and problem-solving skills among pharmacy students. The technique involves the selection of clinical case scenarios that closely match those that pharmacists encounter in the health care environment. The faculty developed the scenarios and then enlisted actors or, in some cases, actual patients to simulate the conditions being assessed. In the final week of the academic year, all students were scheduled for eight assessments in the Standardized Patient Assessment laboratory. This laboratory was designed to reflect a realistic patient

care environment, with one important difference: each examination room was equipped with a closed-circuit television and sound system, enabling faculty observers to videotape the encounter for the purposes of student evaluation and feedback. The goal of the annual progression examination is to ensure that students have not only assimilated information but have learned to integrate that academic knowledge with the assessment and problem-solving skills necessary for the delivery of quality patient care. The use of a standardized patient assessment permitted faculty to assess both knowledge *and* critical patient care skills such as empathy, communication, and problem solving in a realistic environment.

DUNN FAMILY APOTHECARY

When we designed the School of Pharmacy, we created a large space immediately inside the entrance to the school and off the lobby for a turn-of-the-century apothecary. We picked the period to coincide with the founding of the university (1875) and to be reflective of a very important period in the history of pharmacy. The period from 1875-1925 was the period that saw the pharmacy profession move from small apothecary "shops" to pharmacies. It was a period of significant growth in the size and elegance of pharmacies, when the fixtures became increasingly ornate and illuminated with lighted fixtures replete with stained glass. It was the period that birthed the soda fountain, and it preceded extensive government regulation that gradually changed the practice of pharmacy. I wanted a distinctive entrance to the school that would be an attractive and subtle reminder to students of how fast things change in pharmacy and health care. Students who sling laptops over their shoulders each day as they enter a technologically advanced learning environment should never forget that they are poised to become participants in a rapidly changing profession. One hundred years earlier, the apothecary would have been their learning environment.

When the ACPE accreditation team first reviewed the blueprints, they asked why we were devoting valuable space to a museum. I responded that, in the brief time I had been in Virginia, I had observed that the residents were very proud of their history. Winchester was the first permanent settlement west of the Blue Ridge and was surveyed by a 16-year-old surveyor by the name of George Washington. Visitors to the School of Pharmacy may not understand the technology, but they value the importance of history. The apothecary is a very tangible link

to that history. Even though we didn't have the fixtures, or even a bene-factor who could provide the funding for their acquisition, I felt very strongly that the space should remain, and the members of the team eventually agreed. On January 31, 1996, David Skelton and I had been on a recruitment trip to southwest Virginia and stopped in Staunton for dinner. A local pharmacist had recommended that we stop at a local res-taurant because it contained a number of period pharmacy antiques. A local developer had plans to create a train station restaurant and hotel. His plans were "derailed" when he was unable to obtain permits to run a scenic railroad over existing tracks. When we visited the restaurant, many of the fixtures were in boxes or stacked precariously against the walls. We were amazed to find that he actually had one complete phar-macy that he had purchased from an individual in Shepherdstown, West Virginia, less than 50 miles from Winchester. We left the restaurant, and within ten minutes I received a call on my cell phone from Ms. Mary Lou Stottlemyer indicating that a member of the Shenandoah Uni-versity Board of Trustees and his wife had agreed to fund the creation of the apothecary in the name of his father, Bernard J. Dunn.

With space in the new building, a complete turn-of-the-century apothecary (including ephemera), and a benefactor, it was perhaps the quickest realization of a dream that I had ever experienced. Dr. Bernard J. and Anne Marie Dunn became more than benefactors: they became friends and strong supporters of the evolving School of Pharmacy. They would support and aid the creation of the school frequently, in much the same way as they assisted with the creation of the apothecary. Their support was heartfelt, timely, and given with grace and elegance.

We spent much of the winter of 1996-1997 researching the origins of the pharmacy, overseeing the installation of the fixtures, and adding ar-tistic touches that made the apothecary a signature entrance into the School of Pharmacy. Planning for the formal dedication began in April, and the apothecary was formally dedicated in a very emotional cere-mony on June 12, 1997.

CONCLUSION

During the winter of 1996-97 dreams collided with reality and the dreams won out. It was very much a team effort that resulted in the cre-ation of a new school of pharmacy with a fresh approach to pharmacy education and a willingness on the part of those involved–students, fac-ulty, and staff–to experiment and sometimes to take risks. In the fall of

1995, I shared a passage from one of my favorite books by Harvey MacKay called *Swim With the Sharks Without Being Eaten Alive* with the pioneering faculty and staff. The passage became our informal mission statement and appeared on the walls of our cubicles as our mantra. Everyone was incredibly dedicated to a half-formed venture and was willing to work and dream to realize that vision.

<blockquote>
A good team is a collection of diverse
people who respect each other and
are committed to each other's successes.
</blockquote>

–Harvey MacKay

APPENDIX 1

Doctor of Pharmacy Curriculum

The doctor of pharmacy program will emphasize pharmaceutical care. It will be a competency based curriculum with pharmaceutical care as the base. The instructional program will be student centered and will include the following: critical thinking, problem solving, case studies, and small group instruction. The doctor of pharmacy program's purpose is to prepare entry-level pharmacy practitioners with competencies in the following areas:

1. Collect and interpret relevant patient data as a basis for therapeutic decision-making.
2. Prospectively review medication orders and the patient's database to evaluate efficacy, appropriateness, potential toxicity, and cost effectiveness of prescribed drug regimens.
3. Counsel patients, care givers, and other health professionals on the rational, safe, and effective use of medications.
4. Counsel patients and care givers on the rational, safe, and effective use of non prescription medications.
5. Develop therapeutic care plans.
6. Monitor a patient's therapeutic outcomes according to his/her therapeutic care plan and intervene as appropriate.

The curriculum of the doctor of pharmacy (Pharm.D.) degree program integrates classroom lectures, small group discussions, laboratory experiences and clinical (patient care) clerkships, experiences within its four year curriculum. Candidates for the Pharm.D. degree complete their professional study in four years.

First Professional Year (1996-1997)

Fall	Sem. Hrs.	Spring	Sem. Hrs.
Introduction to Pharmacy Practice (Lab)	3	Immunology/Biotechnology	2
Anatomy (Lab)	4	Physiology (Lab)	4
Pharmacy Law/Ethics (Cases)	3	Pharmaceutics (Lab)	5
Biochemistry (Lab)	5	Service Learning Project	3
Pharmaceutics (Calculations)	2	Pharmacotherapy - Principles	3
Semester Total	**17**		**17**

Second Professional Year (1997-1998)

Fall	Sem. Hrs.	Spring	Sem. Hrs.
Clinical Pharmacokinetics	3	Pharmacotherapy (Modules 1-5)	4
Drug Literature Evaluation (Lab)	3	Pharmaceutical Care in Practice	2
Pharmacology	3	Pharmaceutics (OTCs)	4
Pharmaceutics (Dispensing - Lab)	3	Pharmacology	3
Psychosocial Aspects of Disease	2	Patient Counseling/Communications	2
General Elective	3	Professional Elective	3
Semester Total	**17**		**18**

Third Professional Year (1998-1999)

Fall	Sem. Hrs.	Spring	Sem. Hrs.
Pharmacotherapy (Modules 6-10)	5	Pharmacotherapy (Modules 11-15)	5
Professional Practice Management	3	Professional Practice Man. Elective	3
Pharmacy Practice (Lab. values, home	3	Pharmacy Practice Seminar	1
testing, sterile products - Lab)		Clinical Research Methods	3
Biostatistics	3	Clinical Toxicology	3
Professional Elective	3	Case Studies	2
Standardized Patient Assessment	1	Standardized Patient Assessment	1
Semester Total	**18**		**18**

Fourth Professional Year (1999-2000)

Fall	Sem. Hrs.	Spring	Sem. Hrs.
Pharmacy Practice (40 hrs.)	4	Pharmacy Practice (40 hrs.)	4
Pharmacy Practice (40 hrs.)	4	Pharmacy Practice (40 hrs.)	4
Pharmacy Practice (40 hrs.)	4	Pharmacy Practice (40 hrs.)	4
Pharmacy Practice (40 hrs.)	4	Pharmacy Practice (40 hrs.)	4
Clinical Pharmacy Seminar	2	Pharmacy Practice - Practicum Proj.	2
Semester Total	**18**		**18**

First Professional Year

Courses in the first year of the professional program include pharmaceutical calculations, pharmacy law and ethics and an introduction to pharmacy practice. A major component of the introduction to pharmacy practice course will be familiarization with the library and information systems, including the computer laboratory. Students will also participate in career planning as a part of the introductory course. Students will complete eight semester hours of anatomy and physiology. In addition to traditional lectures and demonstrations, the students will utilize the latest in multimedia computer programs to enhance understanding of

human anatomy and physiological processes. Students will complete a seven hour sequence in pharmaceutics that emphasizes pharmaceutical calculations and the basic skills in pharmacy terminology, compounding techniques for dosage form development and sterile products formulation.

Students will begin the sequence in pharmacotherapy. This sequence, beginning with the pathologic aspects of disease in the first year, will span the entire didactic curriculum. The objective of this course sequence is to encourage the student to view pharmacotherapy from a body systems perspective. The structure of the courses will be to present the pathophysiology of diseases, the clinical presentation of patients, the chemical and pharmacological characteristics of agents and the therapeutic parameters to be used in monitoring patients. The sequence will be team taught and will utilize the talents of a variety of faculty. It will culminate with student participation in **standardized patient assessments** during the third professional year.

Students will participate in a three credit hour Service Learning Project designed to introduce the concepts of health and illness, death and dying, health care delivery mechanisms and patient care. The project will be coordinated by the Professional Practice Coordinator and will involve teams of 4-5 students. Each team will conceptualize, plan and implement a project in the northern Virginia area. The objective of the project is to introduce the concepts of wellness, illness and the role pharmaceutical care plays in the provision of health care.

Second Professional Year

The second year of the curriculum offers courses in pharmacology, pharmacokinetics (the study of the way the body absorbs, distributes and eliminates drugs and chemicals) and pharmaceutics (distribution of drug products). The pharmacotherapy sequence continues with the first of fifteen modules. Each module[1] will be accompanied by a small group case recitation. Physical assessment skills, communication skills (writing and speaking), problem-solving skills and information retrieval skills will be incorporated into each module. Student knowledge of drug information and skills managing drug information inquiries will be strengthened through participation in the Drug Literature Evaluation course. This course includes a computer laboratory where students will be exposed to the latest online clinical references, drug information databases and resources of the Internet. Students will participate in a seven

hour pharmaceutics sequence designed to build skills in the manufacture, packaging and distribution of drug products. In this course sequence and in the Patient Counseling/Communications course students will be exposed to concepts of patient monitoring and counseling. They will also receive the basic skills necessary to effectively monitor patient drug regimens within the concept of *pharmaceutical care*. The two hour course in Pharmaceutical Care in Practice will explore various models of pharmaceutical care, practice considerations in implementing the concept and practical examples drawn from pharmacy practice.

Students will be permitted to enroll in the first of three electives (nine hours total). A three hour general elective in the fall of the second year followed by two three hour professional electives over the next two semesters will permit the student to explore advanced concepts of patient care, pharmacy practice, specialized practice and enhanced skills development (sterile products, informatics, etc.). Students will also be allowed to engage in independent research projects with faculty members. General electives for the Pharm.D. may be chosen from upper-division level courses in the following program areas:

- Pharmaceutical Sciences
- Pharmacology and Toxicology
- Pharmacy Practice

Other courses to meet professional degree elective requirements need special approval from the Dean's Office. Examples of these include courses from the following departments:

- Accounting
- Anthropology
- Biochemistry
- Business Administration
- Chemistry
- Communications
- Computer Information System

- Biology
- Economics
- Health Related Profession
- Psychology
- Sociology
- Statistics

The second professional year will see an expansion of the student's experiential education to include eighty hours (40 hours community pharmacy; 40 hours institutional) of exposure to pharmacy in two practice areas. Students will receive a list of practice competencies drawn from skill areas emphasized in the first two years. These competencies are based upon the work of the Center for the Advancement of Pharma-

ceutical Education and are broadly reflective of the outcome measures expected of a pharmacy practitioner in these two settings. Students will have from the end of the second professional year to the beginning of the third professional year to complete the competencies (15 months). Credit will be assigned as part of the Pharmaceutics Course in the Spring of the second professional year.

Third Professional Year

The third professional year will see the completion of the pharmacotherapy sequence, and initiation of course work designed to strengthen the student's knowledge of clinical research. Students will be exposed to the basics of biomedical statistics and the design of clinical trials. Clinical toxicology will allow students to see the potential toxic consequences of drug therapy and accepted methods for managing toxicological emergencies. The management of resources is the focus of the Professional Practice Management course. This course will include concepts of financial management, pharmacoeconomics, cost containment strategies, personal financial management and personnel management. Students will be permitted to chose from one of five *selectives* in the Spring that will permit students an opportunity to specialize in one area of pharmacy management. The five areas are: community pharmacy, entrepreneurship, institutional/managed care pharmacy, drug industry and research.

The emphasis in clinical experience will shift from community and institutional settings to involvement in **Standardized Patient Assessments**.

The standardized patient concept is widely considered to be an excellent evaluative tool in determining student competency in medical education. It is being considered as an addition to the National Board of Medical Examiners (NBME) examination required for graduation from medical schools. In a recent survey of Colleges of Medicine in the U.S. and Canada, 70% indicated that standardized patients are utilized in some capacity at their institution.[2] Shenandoah University–School of Pharmacy will be only the third pharmacy school in the country to make extensive use of the concept in pharmacy education.

A standardized patient (SP) is a healthy individual trained to simulate an illness in a standardized way, or an actual patient trained to present his or her illness in a standardized way.[3] By definition, the SP presents a problem consistently without varying from student to student. This permits the SP to be applied to *both the teaching and the assessment* of pharmaceutical care. SPs can present a case involving professional or

clinical competencies and this case can be used to teach or assess the performance of these competencies.

Advantages of SPs are numerous. Examples over traditional educational methods include assessing skills other than one's ability to memorize facts; allowing the student to incorporate communication skills, pharmacologic knowledge, and critical thinking skills into each exercise; allowing students to generate original responses versus selecting responses from a given list; providing the opportunity for immediate and direct feedback from the instructor to the student; permitting the student to make mistakes with the SP before an actual patient encounter; ensuring exposure of the student to common disease states with opportunity for intervention; and improving interpersonal skills necessary for pharmacists who interact with patients and other health care professionals.

When SPs are used as a method of assessment, the SP is trained to present an encounter involving a clinical or professional competency in a reproducible way. The SP participates in an examination process in which students rotate around a circuit of stations, where each station requires the student to perform a variety of clinical tasks (optimizing pharmacotherapy through patient interview and medical record analysis, interviewing a patient for an accurate drug history, examining a prescription for errors, performing a pharmacokinetic analysis, etc.). Students in the third professional year will undergo two (2) standardized patient examinations each semester. Grading will be pass/fail. The examination will be conducted in the School of Pharmacy's Standardized Patient Examination Center and involve eight stations. The student will be observed during a 12 minute encounter and graded based upon his or her interaction. Essential to a successful encounter is the combination of clearly defined clinical tasks in a controlled, standardized testing environment using detailed performance criteria in the form of check-lists and rating forms.[4] At the end of the encounter, the student will record his or her assessment of the situation. This assessment, together with a videotape of the encounter and an assessment by the patient will form the basis for the evaluation and subsequent grade. Encounters will be developed from real life experiences, similar to case studies or written simulations, but they will have the added component of human interaction within a short time frame.

Fourth Professional Year

The fourth year of the curriculum is composed of 36 credit hours of clinical clerkships including a pharmacy practicum project (where students conduct individual pharmacy practice research not related to a thesis or dissertation), and a clinical pharmacy seminar where skills and

principles for effective communication in clinical setting are utilized. Students will participate in required rotations in adult internal medicine, ambulatory care, drug information, community pharmacy, community clinical and institutional/managed care. In addition, students will be expected to select two elective rotations.

The Pharm.D. program emphasizes the clinical and pharmaceutical sciences as they relate to the development of enhanced professional skills for the student. The professional curriculum has required courses in pathophysiology, therapeutics, and involves social and psychology aspects of patient care. During clinical rotations, students will observe physicians on rounds as they relate underlying pathophysiologic events to the diagnosis and treatment of disease. By participating in monitoring patient responses to therapy, students in the doctoral clerkship program will have the depth and breadth of practical experiences necessary for participation in the therapeutic decision making process in an independent practice setting. The broad socioeconomic makeup of the population that constitutes the patient base of the clerkship program will allow students to develop the special communication skills that are needed to meet social and psychological aspects of patient care.

Traditional methods of instruction will be augmented by participation in clinical-pathological conferences and rounds at the Winchester Medical Center and other sites to allow the Pharm.D. students to interact with physicians and patients in the traditional clinical training environment. The professional interaction will allow students to develop a greater in-depth understanding of pathophysiology and therapeutics enhancing their ability to advise and counsel patients and physicians. Pharm.D. students will be encouraged to attend educational and research seminars to further enhance professional development.

The student will develop skills in understanding and compensating for alterations in drug distribution, elimination and metabolism that are frequently associated with cardiac, kidney or hepatic disease. Through an understanding of the pathophysiologic events that produce these pharmacokinetic changes, the student will be able to modify dose regimens to produce desired therapeutic effects while reducing the risk of toxicity in compromised patients. These skills are learned by combining the knowledge presented in clinical pharmacokinetics and other courses and the practical experience gained from required and specialty rotations.

In its desire to offer a curriculum that will prepare its graduates for future practice, the School of Pharmacy will explore innovative educational and curricular changes as deemed appropriate by the dean and the faculty of the school. The experimental and innovative curricula will be adequately planned and coupled with an appropriate evaluation system

that is approved by the dean and the faculty. The dean of the School of Pharmacy will assure that the quality of education is not adversely affected by any experimental or innovative changes in the curriculum.

General Electives

General electives for the Pharm.D. may be chosen from upper-division level courses in the following program areas:

- Pharmaceutical Sciences
- Pharmacology and Toxicology
- Pharmacy Practice

Other courses to meet professional degree elective requirements need special approval from the Dean's Office. Examples of these include courses from the following departments:

- Accounting
- Anthropology
- Biochemistry

- Business Administration
- Chemistry
- Communications
- Computer Information System

- Biology
- Economics
- Health Related Professions
- Psychology
- Sociology
- Statistics

NOTES

1. Pharmacotherapy utilizes an organ system approach that requires students to apply principles from the basic and clinical sciences to actual patient situations. In addition to pathology and therapeutics, this course sequence will contain material on physical assessment, medicinal chemistry, non-prescription drug therapy and pharmacoeconomics. The course sequence will consist of fifteen modules that vary in length based upon the complexity of the material. The fifteen modules are: neurology, cardiovascular, dermatology, respiratory, nephrology, psychiatry, gastroenterology/nutrition, musculoskeletal, endocrine, hematology/oncology, infectious disease, immunology, pharmacogenetics, obstetrics/gynecology, special populations.

2. Stillman, P.L. et al., Results of a survey on the use of standardized patients to teach and evaluate clinical skills. *Acad. Med.* 68:288-292 (1990*)*.

3. Barrows, H.S., An overview of the uses of standardized patients for teaching and evaluating clinical skills. *Acad. Med.* 68:443-451 (1993).

4. Swanson, D.B. et al., Use of standardized patients for teaching and assessing clinical skills. *Eval. Health Prof.* 13:79-103 (1990*)*.

APPENDIX 2

December 1, 1997
Daniel A. Nona
The American Council on Pharmaceutical Education
311 West Superior Street
Chicago, IL 60610

Dear Dr. Nona:

I have enclosed, for your review, an updated self-study. The revised document contains changes and additions to the self-study that we submitted in February, 1997. I would like to highlight some of those changes for your consideration.

Organization   The organization of the school of pharmacy has become slightly more complex as we have added faculty and to meet our organizational goals. The organizational chart on page 2 highlights some of those changes. The school is now organized into two departments, as originally planned and two administrative deans (Associate Dean for Academic Affairs and Assistant Dean for Student Affairs). These four individuals, together with the Administrative Assistant to the Dean represent the Executive Committee. I have added Directors for four key areas.

The **Director of Experiential Education** (Otto Wachsman) is responsible for the development of our experiential program and supervision of the Service Learning Program. He coordinates student and preceptor activities and has been engaged in an aggressive program of site recruitment. In his role as President of the Virginia Pharmacists Association, Mr. Wachsman has traveled the state of Virginia and visited many potential sites. I have also visited many sites, including the Hunter-McGuire VAMC, Martinsburg VAMC and the University of Virginia Hospitals and Clinics to discuss affiliation and to seek support from the excellent teaching facilities. In addition, we have been successful in creating practice opportunities in several family practices in the Northern Virginia area. I am confident that many of these contacts and those that we will make through the Non-Traditional Doctor of Pharmacy program will result in the achievement of our target of 100 practice sites by December 31, 1998.

Tom Ellington joined the faculty in August and assumed responsibility for the Drug Information Center. He has become extensively involved in the teaching of material relating to Drug Information and Informatics. In anticipation of growth in both numbers of faculty and staff involved in this area, I created the **Director of Information Systems**. His responsibilities will include traditional drug information activities, the developing field of drug informatics and the supervision of staff hired to support the use of information resources by faculty, staff, traditional and non-traditional students.

Robert Stoneburner, Director of Pharmacy for Winchester Medical Center, will continue in his role as **Director of Clinical Affairs** for the school of pharmacy. Bob has ably assisted both Otto Wachsman and Rod Carter in the creation of a standard affiliation agreement that has served as a template for the affiliations that have been reached, thus far. He also served on the Advisory Panel on Non-Traditional Education that worked for seven months to develop the Non-Traditional Doctor of Pharmacy proposal that accompanies this report.

The newest Directorship is that of **Director of Non-Traditional Education**. This position will be filled in January by Evan Robinson who joins us from Auburn University. Evan will be responsible for the development of the Non-Traditional Program and, eventually, certificate programs. He will work closely with me and with both department chairs to craft what I think will be a truly innovative approach to distance education.

After extensive discussion with the existing members of the Executive Committee we have decided that the original members will represent the core group with the four Directors participating on a rotating basis. This would result in focused group discussions on a regular basis concerning each of these important areas, but would allow the Executive Committee to continue as a small working group.

Mission/Vision Statements

The faculty met over a two day period this summer in a faculty retreat to discuss our evolving academic culture, to revise our **Mission Statement** and to craft a preliminary vision statement. These statements have been the focus of an *ad hoc* faculty committee for three months and the final drafts are scheduled for presentation to the faculty on December 4th. Because of the necessity to submit this report I mention it here, and will forward the finished and adopted documents at the earliest possible opportunity.

Faculty Committees Our original number of faculty committees has increased from three (Admissions, Curriculum, Honors and Awards) to eight. The new committees are: **Faculty Affairs**, **Academic Affairs**, **Student Affairs, Academic Standards** and **Student-Faculty Liaison Committee**. The constitution and function of these committees are described in Appendix 2. The Faculty Bylaws have been amended to reflect these and several other minor changes. The changes were read at the last regularly scheduled Faculty-Staff meeting and are scheduled for a vote on December 4, 1997.

Budget The budget appears on pages 29-31 of the report. It has been revised based upon actual versus projected revenues and expenditures and updated to reflect a better realization of these and other areas. Several of the changes are deserving of note.

Revenues Lower than expected gifts, possibly reflecting the changes taking place in both the chain store and pharmaceutical industry, created a shortfall in anticipated revenues. This was exacerbated by a small amount of student attrition.

Expenses The single biggest unanticipated expense was for services. This included maintenance and security provided by Winchester Medical Center. As a provision of the lease, Winchester Medical Center assumed responsibility for these functions and the charge ($263,500) was added to the School of Pharmacy budget. The university provided some additional support as indicated on the revised budget and agreed to forgo the return of overhead for the Academic Year 1997-98. In addition, cuts in operating budgets and the library were made to offset some of the increase. One position (Informatics) was not filled, due to an absence of qualified candidates and the funding for this position was also used to cover the shortfall.

FY 1998-1999 I have proposed a budget for FY 1998-99 that accounts for the increased cost of maintenance and allows us to meet all other budgetary obligations. A key will be aggressive fund raising to meet the target of $250,000. A new Vice President for Development has been hired and he and his staff are working diligently to fulfill this goal.

Technology Initiative We continued the development of the technological infrastructure for the School of Pharmacy. The computer laboratory now houses 55 Pentium® workstations, two laser printers and a color inkjet printer. In addition, Ethernet (twisted wire pair) was installed in the computer laboratory, library, student lounge and multi-media classroom to permit students to plug their laptop computers into any one of 200 data ports. This initiative is in keeping with the commitment made to the students when laptop ownership was mandated that *access* would not be a problem. Pharmacy students can now access the Internet, the Local Area Network (LAN) and printers in all of the classrooms and service areas that they use. Students may print to laser printers in the student lounge, library, computer center and the multi-media (Room 109) classroom. In addition, students have access to the local area network at their seats, thus permitting them to download and utilize electronic outlines, Powerpoint® slide presentations and material from the School of Pharmacy World Wide Web page.

Budgetary Officers I have created budgets for the Associate and Assistant Deans and named them budgetary officers over those budget lines. In addition, the chairpersons of the two academic departments have been made responsible for their departmental budgets. I have worked closely with these four individuals to develop budgets that are sufficient to meet their anticipated needs and will continue to monitor their respective situations to insure they have adequate resources to meet their department's needs through the end of the fiscal year.

New Faculty

Academic Year 1997-98 was a successful recruitment year that resulted in the addition of three (3) faculty in the Department of Pharmacy Practice and two (2) in Department of Biopharmaceutical Sciences. In addition, we have offered and received commitments from two (2) additional faculty. A summary of the new faculty is listed below and has been included in the full report on pages 62-63.

New Faculty
Academic Year 1997-98

Pharmacy Practice

Cheryl Cropp, Pharm.D.	Ambulatory Care
Tom Ellington, Pharm.D.	Drug Information
Gretchen Johnson, Pharm.D.	Ambulatory Care
Joseph Grillo, Pharm.D.	Critical Care (*pending*)

Biopharmaceutical Sciences

Jeff Lewis, Ph.D.	Pharmaceutics
Thomas Prasthofer, Ph.D.	Biochemistry
Evan Robinson, Ph.D.	Pharmacy Administration (*pending*)

Dr. Grillo will begin in July 1998, while Dr. Robinson will assume the Directorship of the Non-Traditional Doctor of Pharmacy program on January 1, 1998. Changes from the last report include the hiring of an ambulatory care faculty member in place of a faculty member in community clinical and the acceleration of the hiring of the drug information faculty from January 1998 to August 1997. Due to a lack of qualified candidates in pharmacy informatics I made the decision to delay hiring for the position until July 1, 1998. We are optimistic that we will successfully hire eleven new faculty (including Dr. Grillo) in Academic Year 1998-99. *Curriculum Vitae* for the newly hired faculty appear directly behind the Executive Summary.

Physical Facilities

A major commitment has been made to the installation of the computer infrastructure necessary to support the delivery of a technologically advanced form of pharmacy education. This infrastructure, in addition to supporting traditional pharmacy education within the Health Professions Building, must be robust enough to also support the delivery of pharmacy education to students at remote practice sites and pharmacists enrolled in the non-traditional Doctor of Pharmacy program.

A significant step toward completion of this goal was the installation of the next phase of the Ethernet wiring plan. Students now have access to over 200 data ports throughout the Health Professions Building with a high concentration in areas most frequently used by pharmacy students. These include the large multimedia classroom (85 data ports), the computer laboratory (80 data ports), the multipurpose laboratory (37 data ports), the Health Professions Library (20 data ports) and the student lounge (6 data ports). We

also installed additional high capacity laser printers in these areas. Two laser printers were placed in the computer laboratory, along with two color inkjet printers. One laser printer was added to the one already in the library, one was placed in the student lounge, one in the back of the large multimedia classroom and two in the multipurpose laboratory.

The FY 1998-99 budget contains money for computer hardware and software to begin the phased replacement of some older workstations (approximately 1/3 will be replaced or upgraded yearly). In addition, the remainder of the multimedia classroom (100 seats) will be wired for Ethernet access. A second World Wide Web server is planned to meet the needs of the non-traditional Doctor of Pharmacy program and to support remote access to a clinical encounter database by both traditional and non-traditional students.

We have received authorization from President Davis to develop a proposal for completion of some or all of the shell space within the Health Professions Building. This would permit us to develop at least one additional multi-media classroom, complete with computer hookups, several smaller breakout and conference rooms and three-four additional faculty offices. It is also anticipated that some of the shell space will be held in reserve for faculty research laboratories. The proposal should be developed in the Spring with possible implementation in Fall 1998 or early Winter, 1999. The projected budget has been adjusted to reflect the addition of $150,000 in additional rent.

Finally, in anticipation of the non-traditional program beginning in June, 1998, we are planning for the completion of the teleconference center to a level of sophistication necessary to interact with the Virginia ATM network. The teleconference center will also be used, along with the newly equipped Drug Information Center conference room for small (20 students) meetings.

Experiential Sites With the addition of Mr. Otto Wachsman, we have embarked on an aggressive effort to recruit experiential sites. The goal is to develop affiliations with 100 practice sites. Significant progress has been made in developing both **site selection criteria** (pp. 76 - 77) and affiliation agreements. Agreements have been signed with the Winchester Medical Center (and the other components of Valley Health Systems) and Hunter-McGuire VA in Richmond, VA. Agreements are pending with the University of Virginia Health System and Amherst Family Practice. Agreements with the Front Royal Family Practice and the Berryville Clinic are under development. The process of identifying sites and reaching agreement will continue through May 1999 when students depart for their first rotations. It is expected that implementation of the non-traditional Doctor of Pharmacy program will add significantly to the number of sites willing to take traditional and non-traditional students through experiential rotations.

Curriculum (3rd Yr.) The third professional year curriculum is developed and accompanies this report (Appendix 8). A significant portion of the faculty's efforts have been focused on development of the Integrated Care and Science sequence that begins in the Spring of 1998 and spans the entire third year of the curriculum. Module development teams have worked to develop the systematic methods of instruction that will be utilized in each content area, identify appropriate instructional teams and develop evaluative and testing mechanisms to be used throughout the course. When the course begins it is anticipated that all five (5) basic science faculty and six (6) practice faculty will be involved in some phase of the instruction. The Integrated Care and Science sequence has truly been designed as an **integrated, multi-disciplinary** course that emphasizes problem-solving, team building, communication skills and information management skills. It will clarify for the students and faculty what we mean by the **Shenandoah Twelve**.

One minor change has been made in sequencing and content of the Statistics and Clinical Research Methods sequence. Statistics was moved from the fall semester to the spring to spread out utilization of the computer laboratory (we currently have two of the eventual three-three hour labs in the fall). A more significant reason for the move, however, was to permit staff and faculty to upgrade and fine tune student laptops just prior to the beginning of the experiential phase of the program. It was felt that, particularly with the first class, some adjustments and additional instruction would be needed prior to students moving out into the practice sites. To balance the curriculum Clinical Research Methods was moved back to the fall semester. The result is that both semesters remain at 18 semester hours.

Progressions The first professional year students participated in the first **Progressions Examination** utilizing actors in the **Standardized Patient Examination Laboratory**. The results have been encouraging. Students appeared prepared for the examination and knowledgeable about the expected outcomes. Three (3) students were asked, on the basis of both the progressions examination and performance on norm-referenced testing, to undergo remediation. Their remediation continued over the summer culminating in a re-examination in August. All three were permitted to continue with their class in the Fall.

Admissions Shenandoah University School of Pharmacy received 163 viable applications in Academic Year 1997 for admission into the fall 1997 class. Seventy-five were admitted and seventy-one enrolled into the second Doctor of Pharmacy class. While the numbers were slightly lower than anticipated, they nonetheless represent a strong group of students.

Dr. David Skelton, working closely with the faculty and staff of the School of Pharmacy, has developed a recruitment strategy that includes visits to over forty two- and four-year schools that have been

identified as **feeder schools**. Over half of those schools have been visited by teams of faculty with the expectation that all will have been visited by mid-December. A recruitment package is hand delivered to each pre-pharmacy advisor at the school and names of prospective students are solicited. If time permits, the faculty/staff teams meet with prospective students to discuss pharmacy education and the profession of pharmacy. Prospective applicants' names are given to Dr. Skelton for inclusion in a **contact database** and, if possible, students from the first two classes are given the prospective student's name/e-mail address to establish a dialogue.

Another aspect of our recruitment strategy has been to install a registration function on the School of Pharmacy World Wide Web **homepage**. Information submitted as part of the inquiry form is automatically moved into the contact database where staff members generate weekly mailings to prospective students. E-mail requests for information and entries into the inquiry form are averaging over 30 contacts a day.

Technology Initiative Shenandoah University School of Pharmacy has moved into the forefront in the use of information technology within the curriculum. Virtually every course requires students to use computers and associated databases in the completion of the course. One of the most visible indications of this initiative is that every student has been required to make a formal presentation supported by Powerpoint® slides developed by the student. Students have competed aggressively to develop the most sophisticated slides, with impressive sound effects, dissolve and animation.

Use of computers and information technology on this scale would be virtually impossible without uniform and widespread access to the Internet, Ethernet and proprietary databases (i.e., Clinisphere®, IPA, etc.). To ensure that access would not be a problem, the faculty of the School of Pharmacy, supported by the university administration, adopted a policy requiring all pharmacy students to utilize a laptop computer as part of their pharmacy education. After extensive research we selected International Business Machines (IBM) as the vendor of the laptop. A complete description of the Technology Initiative (a.k.a. laptop proposal) can be found in Appendix 13. A formal evaluation of the initiative is planned in the spring, but informally both students and faculty appear extremely pleased with the initiative and the resulting impact it has made on the quality of pharmacy education.

Non-Traditional
Doctor of Pharmacy The original plan submitted to ACPE called for the development and implementation of a non-traditional Doctor of Pharmacy program. An Advisory Panel was charged in January, 1997 with the review of plans for the non-traditional Doctor of Pharmacy program. They recommended that the school conduct a mail survey of pharmacists in a four state (Maryland, Pennsylvania, West Virginia and Virginia) area that had earlier indicated an interest in non-traditional education. They also recommended that the survey results

and the tentative plan for the program be the subject of a practitioner focus group. Both recommendations were followed and the information incorporated into the final proposal.

Following review of the proposal by the School of Pharmacy Executive Committee and the full faculty, the proposal was submitted to the President for his review. I met with Dr. Davis, President, Dr. Joel Stegall, VP for Academic Programs and Mr. Richard Shickle, VP for Finance to discuss implementation of the program. It was agreed that outside funding would be sought for the anticipated $200,000 startup costs. Thanks to the individual generosity of two individuals, $250,000 was donated to the School of Pharmacy to support the initiation of the non-traditional program. It was agreed that $200,000 would be used to fund the startup with the remaining $50,000 used as a reserve to cover unanticipated costs.

The budget and program description are attached immediately following this Executive Summary. A few notes concerning the program and its importance to the School of Pharmacy are warranted.

The program is modest in scope. Pharmacists will be recruited and admitted into the program in *cohorts* of 30-48. Each cohort is further divided into *teams* of six pharmacists. Teams are local (within sixty miles of a teleconferencing site) while cohorts are regional or national. The instruction is a mix of real time instruction and asynchronous (delayed) instruction utilizing e-mail, videotape, and computer conferencing. Students are also required to spend time in individual study, often involving access to web-based resources.

The program is designed to be completed by cohort in two years. We feel strongly that utilization of a cohort arrangement will help to contain costs by making it cost effective to use teleconferencing as a supplement to onsite visits by faculty and will enhance retention of participants. Extensive use of computer technology as a delivery mechanism will also lay the ground work for the information technology infrastructure needed by traditional students when they use many of these same sites in the completion of their experiential education.

The Administrative-Finance Committee of the Shenandoah Board of Trustees met December 3rd to review the proposal and adopted it without dissent. In anticipation of their approval I arranged for Evan Robinson to interview with the faculty and staff on two occasions for the position of Director of Non-Traditional Education. He accepted the position, pending the vote of the Administrative-Finance Committee and has since signed a contract that is now in transit to my office. In addition to Dr. Robinson, the initial staff will include a graphics/web page designer, a computer support person and an administrative assistant. In FY 1998-99 I budgeted for the addition of an information specialist and the first of several faculty to supplement the existing faculty who will serve as resource persons for each Non-Traditional team. Resource teams will consist of a com-

puter support person, information specialist and a faculty mentor who will be assigned to a team for a two year period. They will assist the teams in accessing and utilizing campus resources and troubleshoot problems that develop with the delivery mechanism. In addition, a local team coordinator will be hired on a consultancy basis to supervise testing, to assist with local site preparations (e.g., teleconferencing) and to arrange experiential opportunities for team members.

The approach we have taken to developing our non-traditional Doctor of Pharmacy program is thoughtful and gives fair consideration to the concerns of both the Advisory panel and the pharmacist focus group. We feel that it addresses many of the concerns that pharmacists raise for non-participation in other non-traditional programs and breaks new ground in the use of information technology. We are very excited about initiating the program in June 1998!

I have covered many new and exciting aspects of our still evolving educational program. We have made significant progress since your visit and look forward to an accelerated pace of change with the addition of new faculty next Summer. I will be more than happy to respond to any questions you or members of the council may have concerning the report or our program.

Have happy holiday and the best to your staff.

Sincerely,

Alan McKay, Ph.D.
Professor and Dean
School of Pharmacy
amckay@su.ed

FN: execsum.wpd
FD: 12/4/97
CC: J. Davis
       J. Stegal
       R. Shickle
       Executive Committee
       SOP Faculty
ENC: Report

APPENDIX 3

Course Description: Twenty-nine hours of sequenced and integrated courses that presents students with the pathophysiology of common diseases of each major organ system of the body, basic mechanisms, chemistry and kinetics of drugs which affect those diseases and the therapeutic management of patients. The application laboratory will focus on providing an arena for students to use principles and theory in a case-study format.

Common problems seen by the pharmacist and which will be addressed in this course sequence includes:

Organ System	Example Disorder(s)
1. Respiratory	Outpatient URI
	Reactive airway
2. Renal	Renal failure
3. Infectious Diseases	Otitis
	Viral infection
	HIV
4. Cardiovascular	Arrhythmia
	CHF
	CAD/MI
	Hypertension
5. Blood/Reticuloendothelium	Hyperlipidemia
	Coagulation disorder
	Anemia
	Cancer; Breast, Prostate, Leukemia
6. GI/Nutrition	Peptic ulcer disease; Nutritional disorder; GERD
7. Neurosensory	Parkinsonism
	Pain
	Epilepsy
8. Musculoskeletal and Integument	Arthritis
	Common skin disease
9. Psychiatry	Depression
	Schizophrenia
	Alzheimer's disease
10. Endocrine, reproduction, and pharmacogenetics	Diabetes
	Growth/reproductive
	Cystic Fibrosis
11. Special Populations	Multidisease problem

During the topics addressed students will participate in an applications laboratory for assuring application of the information in a practice context. The format for each component of the course follows:

Pathophysiology:

Presentation of the pathology (morphology) of the affected organ system; the physiological response to the insult; signs and symptoms of the disorder; and categorization of the disorder with regard to the practice of pharmacy, i.e., important disorder (additional self-study required by the student), essential disorder (disorder will be addressed within the course sequence), and critical disorder (disorder will be covered in the sequence and the disorder will be selected for case discussion).

Pharmacology/Medicinal Chemistry:

Basic science support for the understanding of the therapeutic agents presented in this sequence. Mechanisms by which the drugs affect the organ system will be addressed as well as the concepts of structural activity relationships.

Clinical Pharmacokinetics:

Serum levels of primary therapeutic agents addressed within the sequence that affect a particular disorder. Questions of when therapeutic serum levels occur, under what circumstances they may be altered, and quantitative factors impacting those levels.

Therapeutics:

Decision making with regard to drug selection, dosing, monitoring, and patient education will be addressed in this component of the course.

Application Laboratory (Cases):

Students will be placed into small groups (~6/group) to solve problems as they arise from a case relevant to the critical disorders addressed within the course sequence.

Course #	SCH	Description	Semester
PHAR xxx	2	**Pharmacotherapy I–Respiratory**	P2 Spring
		Pathophysiology and clinical presentation of common diseases of the Respiratory system; chemistry, pharmacology and kinetics of common therapeutic agents used to treat Respiratory diseases; therapeutic management of patients.	
PHAR xxx	2	**Pharmacotherapy II–Renal**	P2 Spring
		Pathophysiology and clinical presentation of common diseases of the Renal system; chemistry, pharmacology and kinetics of common therapeutic agents used to treat Renal diseases; therapeutic management of patients.	
PHAR xxx	3	**Pharmacotherapy III–Infectious Diseases and Chemotherapy**	P2 Spring
		Pathophysiology and clinical presentation of common infectious diseases; chemistry, pharmacology and kinetics of common therapeutic agents used to treat infectious diseases; therapeutic management of patients.	
PHAR xxx	3	**Pharmacotherapy IV–Cardiovascular**	P2 Spring
		Pathophysiology and clinical presentation of common diseases of the Cardiovascular system; chemistry, pharmacology and kinetics of common therapeutic agents used to treat Cardiovascular diseases; therapeutic management of patients.	
PHAR xxx	1	**Applications Laboratory in Integrated Pharmacotherapy**	P2 Spring
		Applying pharmacotherapy principles in a case study format.	
Semester Total:	**11**		

PHAR xxx	3	**Pharmacotherapy V–Blood and Reticuloendothelium**	P3 Fall
		Pathophysiology and clinical presentation of common diseases of the blood and Reticuloendothelial systems and cancers; chemistry, pharmacology and kinetics of common therapeutic agents used to treat blood and Reticuloendothelial diseases and cancer; therapeutic management of patients.	
PHAR xxx	2	**Pharmacotherapy VI–Gastrointestinal and Nutrition**	P3 Fall
		Principles of nutrition; Pathophysiology and clinical presentation of common nutritional diseases and common diseases of the Gastrointestinal system; chemistry, pharmacology and kinetics of common therapeutic agents used to treat nutritional and Gastrointestinal diseases; therapeutic management of patients.	
PHAR xxx	2	**Pharmacotherapy VII–Neurosensory**	P3 Fall
		Pathophysiology and clinical presentation of common diseases of the Neurological system and sensory organs; chemistry, pharmacology and kinetics of common therapeutic agents used to treat Neurological and sensory organ diseases; therapeutic management of patients.	
PHAR xxx	1	**Applications Laboratory in Integrated Pharmacotherapy**	P3 Fall
		Applying pharmacotherapy principles in a case study format.	
Semester Total:	**8**		

PHAR xxx **2** **Pharmacotherapy VIII–Musculoskeletal and Integumentary**   P3 Spring
Pathophysiology and clinical presentation of common diseases of the
Musculoskeletal and Integumentary systems; chemistry,
pharmacology and kinetics of common therapeutic agents used to treat
Musculoskeletal and Integumentary diseases; therapeutic management
of patients.

PHAR xxx **2** **Pharmacotherapy VIII –Psychiatric**   P3 Spring
Pathophysiology and clinical presentation of common psychiatric
diseases; chemistry, pharmacology and kinetics of common
therapeutic agents used to treat psychiatric diseases; therapeutic
management of patients.

PHAR xxx **3** **Pharmacotherapy IX– Endocrine/Reproduction**   P3 Spring
Pathophysiology and clinical presentation of common diseases of the
Endocrine system; chemistry, pharmacology and kinetics of common
therapeutic agents used to treat Endocrine diseases; therapeutic
management of patients. Consideration will also be given to
genetically-based disorders.

PHAR xxx **2** **Pharmacotherapy XI– Special Populations**   P3 Spring
Unique therapeutic problems and clinical management of pregnant,
nursing, pediatric and geriatric patients.

PHAR xxx **1** **Applications Laboratory in Integrated Pharmacotherapy**   P3 Spring
Applying pharmacotherapy principles in a case study format.

Semester **10**
Total:

Pathophysiology	Pharmacology	Medicinal Chem.	Pharmacokinetics	Therapeutics
Pharmacotherapy I: Respiratory				
General overview; Asthma; COPD	Autonomic Nervous System	SARs of ANS	Theophylline	Asthma; COPD; Smoking cessation
Pharmacotherapy II: Renal				
Review of renal physiology; Renal Failure; Drug-induced renal failure;	Diuretics		Model for renal compromise; dialysis	Phosphate binders; EPO; Electrolyte balance
Pharmacotherapy III: Infectious Diseases				
Etiology; Epidemiology; Signs/ Symptoms; Review of Microgenic pathology	Antibiotics; Anti-infectives; Anti-HIV agents	SARs of anti-infectives	Aminoglycosides; Vancomycin	Individualization of therapy
Pharmacotherapy IV: Cardiovascular				
Hypertension; Cardiac failure; Arrhythmias	Anti-hypertensives (ACEI, CaBlk, etc.); Glycosides	SARs of agents	Digitalization; Antiarrhythmics	Patient maintenance, monitoring and education

APPENDIX 4

Shenandoah University
School of Pharmacy
Class of 2000

The First Class, the logo emblazoned on tee shirts worn by the first pharmacy class is a commentary on both the pioneer spirit and the quality of character of the first group of students to enter the new Shenandoah University School of Pharmacy.

Like pharmacy students everywhere, **The First Class** must rise early for their first lecture at 8 a.m. Some students who commute to Winchester must rise even earlier. The ones who live in Haymarket or Fredericksburg or Frederick, Maryland must contend with 1-2 hours in transit before they can buckle down to learn all they can about the profession of pharmacy. Lectures in biochemistry, anatomy, pharmacy practice, pharmacy calculations and pharmacy law occupy the typical morning while three hour laboratories take up most of the afternoon. They then return home to spend 3-4 additional hours digesting the information and preparing for the next day.

What is different about **The First Class** is reflected in the approach to pharmacy education taken by the Shenandoah University School of Pharmacy faculty. The faculty encourage the students to critically examine the information being presented to them and actively participate in discussions about their significance. One laboratory, for example, focuses on the use of computers, information databases and the Internet to resolve health care problems. Students are given a general concept and expected to use their ingenuity and observational skills to find a *cyber*solution. Students and faculty are acutely aware of the rapid changes that are affecting the health care environment and the importance of problem-solving and information management skills in any health related profession. At Shenandoah School of Pharmacy, students quickly move beyond an awareness of the importance of rapid access to information, to mastery of the information management tools needed to cope with the avalanche of information that is introduced into the health care arena every day. The integration of these skills into the role of a caring health professional exemplify the educational outcomes sought by the faculty and students.

Demographically, the students are similar to other schools of pharmacy. Thirty-three of the 71 members possess a Baccalaureate degree and one a Master's degree. The class consists of 38 Virginians, with the remainder of the class coming from thirteen other states. The average age of **The First Class** is 24 and the average grade point for the 67 hours of required prerequisites is 3.1 (on a 4.0 scale). The maturity of **The First Class** is complemented by their willingness to explore and experiment. This combination, more than any single quality, has established the class identity. They are indeed **First Class.**

FN: 1stclass.mem
FD: 11/5/96
abm

APPENDIX 5
4/17/97

Memorandum

TO: **James Davis, Ph.D.**
President

FROM: **Alan McKay, Ph.D.**
Professor and Dean
School of Pharmacy

SUBJECT: **Infusion of computer technology into the pharmacy curriculum**

CC: **R. Stull**
R. Shickle
J. Stegall
Q. Absar
file

Proposal

I would like to propose that the School of Pharmacy students be required to purchase and use laptop computers in support of their education beginning with the 1997 academic year. Further, I would like to propose that Shenandoah University support this effort to the greatest extent possible to encourage expanded use of information technology within our curriculum.

Background

The growing body of research on the infusion of information technology into educational curriculum is clear, students must feel comfortable with the tools of the **Information Age**. Especially in rapidly changing fields such as health care, individuals need to learn at higher rates of effectiveness and efficiency to cope with the rapidly growing bodies of relevant information. Within the School of Pharmacy we are committed to meeting these challenges of the information age.

The School of Pharmacy vision statement reflects a strong commitment to the infusion of information management technology into our curriculum. We anticipated very early in our programmatic planning that the use of information technology would be the defining quality of our educational program. The new health professions building was designed to accommodate this goal. We anticipated that the most effective and effi-

cient strategy was to shift some of the responsibility for information infrastructure from the school to the students. This encourages the student to become personally accountable for the maintenance of the technology (something that they will do in practice) and it allows the school to concentrate scarce resources on maintenance of information databases and on faculty development (institutional functions). For example, students could purchase a popular drug reference subscription such as *Facts and Comparisons*© for $125 per year or we could mount and maintain the computer version for $450. The students benefit from a centrally maintained data resource that is accessible from any location over the INTERNET. We are currently installing four (4) network databases and will add to this number in coming years. All of these will be accessible to students both within the building and from remote locations utilizing their laptop computers.

Our planning for both the traditional and non-traditional pathways contains provisions for students to increase their use of information technology each year while they are in the program, culminating in extensive use of these resources during their fourth (experiential year).

Information technology is also the mainstay of our non-traditional education strategy. The information infrastructure that we are currently constructing within our traditional pathway will be the means by which we deliver and maintain our distance education strategy.

We do not view this emphasis on technology as a substitute for sound educational content. We do, however, embrace the concept that information technology can and should be integrated into the lives of our faculty and students to enhance their efforts to learn. The infrastructure we are designing should provide for easy access to information for teaching, learning and, most importantly, for communicating with one another. This freedom can only be achieved through a uniform requirement that both traditional and non-traditional learners purchase and use laptop computers.

Laptops provide students with an affordable and portable computer platform for accessing the School of Pharmacy Information System whenever and wherever they want. We have installed and will continue to expand data access within the health professions building. Similarly, we will utilize INTERNET access for those students and faculty who are located at remote sites. We anticipate that significant improvements

in transmission rates will vastly improve access from virtually all our practice sites.

Cost Projections

The **standard laptop configuration** we have developed is listed below. If students possess a laptop that can be upgraded, then they may wish to enhance their existing platform. For those students who wish to purchase a laptop, either through Shenandoah University or a private vendor, they can do so as long as the laptop matches the standard laptop configuration.

Configuration	
Pentium 133 MHZ Laptop	**PCMCIA2 Data/FAX modem**
24 mbyte RAM	**PCMCIA Ethernet Adapter**
1.0 gbyte HD	**MS Office**
3 1/2 Floppy Drive	**Netscape 3.0**
8X CD-ROM	**Windows 95 or 97**
Communications/FAXsoftware	

We solicited and received three (3) independent bids for the standard laptop configuration.

IBM Thinkpad	**$2,625**
Dell Latitude	**$3,560**
Compaq Armada	**$3,656**

Added to these base prices for the configuration would be the cost of financing the laptops over two (2) or three (3) years and maintenance/insurance. The local vendor would be responsible for configuring the laptops, *burning* them in for 24 hours and delivery.

I would recommend that Shenandoah University assume responsibility for the units and also act as a fiscal intermediary. In this capacity we would make the first payment of approximately $77,000 with the students (either directly or through student loans) paying into a fund that would be used to make each quarterly payment. At the end of two (2)

years the students in the class of 2001 would turn in their old units and receive a new laptop at approximately the same price. This is done because laptop technology is the most rapidly obsolete type of computer platform. It would be more expensive to continue maintaining a platform that is one or two generations old. The cost would remain about the same or could possibly be lower for a more powerful computer. Students would be given the opportunity to purchase the old laptop for *fair market value*. While it is difficult to predict what that value would be in the summer of 1999, it has generally been about $600-800 for the IBM Thinkpad.

Students in the class of 2000 would receive their laptops for a three (3) year lease period rather than the customary two years. This option is one that we have examined closely and feel is the best solution to having one class that would not be in sync with our normal policy. They would retain the same technology for one additional year, but the alternative would be for us to *pay down* their cost to a comparable level with the other classes and I don't think we are in a position to subsidize the laptop purchases of any class. The estimated fair market value (residual value) on the laptops after two years will be approximately $800, while the fair market value of the three year lease would be approximately $400. Students would be permitted to purchase their units from the vendor at the fair market value and, if they desired, would not have to lease a unit (in the case of the two year leases) for the remaining two years of their academic program. Non-traditional students would be permitted to use any computer configuration as long as it provides the same theoretical functionality. It is estimated that approximately 40% of the non-traditionals are owners of personal computers. We are confident that some of those may elect to upgrade via the leasing program. Traditional and non-traditional students will be permitted to lease on either a two- or three-year basis but they must make their election at the beginning of the lease period.

Hypothetical Purchase

A pharmacy student would arrive for orientation having already completed all the paperwork to receive a laptop. The computer would have been configured at the vendor's warehouse and contain all the software and enhancements called for in the contract. Both the two-year and the three-year lessees would receive the same computer.

We would orient the students to the computer during a day-long orientation and insure that they are comfortable with the system. We would also issue network accounts and passwords at the same time. Students would be free to access the Pharmacy School Information System from data jacks within the building or from their residence. Access from the residence would be through a local Internet Provider (IP). Students wishing to use their computers from their residence would make the necessary arrangements with the IP individually.

Cost to the individual student would be as follows:[1]
[1]IBM Quotation (4/15/97)

Class of 2000 (36 month lease)

Base Price	$ 2,625.00
Software	$ 100.00
Replacement Insurance	$ 144.00
Total Student Cost	$ 3,002.46
Biannual Payment	$ 500.41 (monthly payment–$83.40)

Class of 2001 (24 month lease with one roll over)

Base Price	$ 2,625.00
Software	$ 100.00
Replacement Insurance	$ 96.00
Total Student Cost	$ 2,663.48
Biannual Payment	$ 665.87 (monthly payment–$ 110.97)

Repayment Schedule:

	Class 2000	Class 2001
Oct.1, 1997	$500.47	$665.87
Apr. 1, 1998	$500.47	$665.87
Oct. 1, 1998	$500.47	$665.87
Apr. 1, 1999	$500.47	$665.87
Oct. 1, 1999	$500.47	$665.87 **(roll over)**
Apr. 1, 2000	$500.47	$665.87
May 2000	**Graduation**	
Oct. 1, 2000	**	$665.87
Apr. 1, 2001	**	$665.87
May 2001	**	**Graduation**

Shenandoah University would have to place the order by the end of May, 1997 to receive a rebate of $100/unit. The rebate would be retained in a contingency fund to support unanticipated costs of implementing the program and to purchase two additional units ($5,250) as backups. It is anticipated that approximately 130 traditional students will purchase laptops in the first year (FY 1997-98). Approximately 125 traditional and non-traditional students will purchase laptops in FY 1998-99).

I would like to meet at your convenience to discuss this proposal and determine an implementation strategy.

FN: laptop.pro
FD: 4/17/97
ENC: Attronica Computers Bid (3/18/97)
         J. O'Brien Memo and Finance Extimate (4/15/97)
abm

APPENDIX 6

Strategy for Enhancing Technology Skills in the Curriculum

The vision of the Shenandoah University School of Pharmacy is one in which information management is threaded within the professional program. Information management will be one of the impacting characteristics for the future delivery of pharmaceutical care. This vision highlights the importance of new electronic technologies for pharmacy and provides the basis for departmental and institutional support of pharmacy faculty members who use such technologies and integrate them into their work.

The following guidelines address means of evaluating the research, teaching, and service of faculty members who study, develop, and use electronic technologies in their work.

Because the role of computer technologies in the practice of pharmacy and its education is evolving, departments wishing to hire and retain faculty members centrally concerned with the application of these emerging technologies to the humanities need to consider the tasks, support, and evaluative procedures involved. And faculty members

who pursue computer-related work as part of their formal assignments should be prepared to make explicit the results, theoretical basis, and intellectual rigor of their work, as well as its relevance to the discipline. The following guidelines, which deal with both the hiring and promotion processes, are designed to help departments and faculty members build productive working relations, effective evaluation procedures, and means of disseminating the results of computer-related work.

Guidelines for Search Committees and Job Candidates

When departments seek candidates with computer expertise or when candidates wish to have such work considered an important part of their positions, there should be an initial understanding of the recognition given to computer-related work and of what electronic facilities are available or planned.

Departments should ensure that computer-related work can be evaluated within their promotion and faculty development procedures. In particular, candidates need to know how the department evaluates research and publication in computers; what importance is attached to the development of new software and what criteria are used to evaluate such software; what credit is given for the integration of electronic technologies into courses; what recognition is given to professional activities relating to computing, and what criteria are used to evaluate faculty members who provide computing support to colleagues, staff, and students.

As candidates discuss the teaching, research, and service responsibilities of an academic position, it is important that they ask questions, such as the following, about the role of electronic technologies in the department and the university: Are technical support staff members available to the department's faculty members and students? Does the department plan to undertake initiatives in the use of electronic technologies? What access do faculty members and students have to computer facilities and resources?

Guidelines for Reappointment and Promotion Reviews

Computer-related work, like other forms of curricular innovation, scholarship, and service, should be evaluated as an integral part of a faculty member's dossier, as specified in an institution's guidelines for re-

appointment, promotion, and tenure. Faculty members are responsible for making a case for the value of their projects, articulating the intellectual assumptions underlying their work, and documenting their time and effort. In particular, faculty members expecting recognition for computer-related work should ensure that their projects remain compatible with departmental needs, as well as with criteria for reappointment and promotion. Periodic reviews provide an opportunity to assess the match between a faculty member's scholarly and pedagogical development and the department's needs and expectations.

Because appropriate roles for computer technology in pharmacy and healthcare and its education are still emerging, faculty members should be prepared to explain: what theory informs their work; why their work is useful to the discipline; the evidence of rigor and intellectual content in their work.

Documentation of projects might include internal or external funding, awards and professional recognition, and reviews and citations of work either in print or in electronic journals.

For subsequent evaluation of professional service, faculty members should maintain a record of the duties involved in activities such as organizing and managing a lab facility, increasing the meaningful use of electronic media in instruction, training student aides or faculty colleagues, and moderating an electronic discussion group.

Pedagogy and research involving technology often entail collaborative or interdisciplinary work. Departments need to find appropriate ways to evaluate the faculty member's role in such work. This process may include finding evaluators with expertise in both specific disciplines and computer technology; these experts are best qualified to evaluate and translate accomplishments in a rapidly changing field. Sources that may help departments choose appropriate evaluators include the editorial boards of computer-related journals, the committees focusing on electronic technologies in appropriate scholarly and professional organizations, the courseware review sections of modern science and practice journals.

Guidelines for Professional Curriculum Emphasis

In order to develop graduates with appropriate skills in information management the professional curriculum must provide for introduction

of theory, discussion of technique, and sufficient time for the student in all levels of the program to practice skills. The following specifics are indicative of how information management skills might be developed within the program at Shenandoah.

1. Pre-pharmacy requirement of computer literacy. Completion of this requirement can be fulfilled by a variety of coursework, but must be a course that requires utilization of the computer in its delivery.
2. Internet laboratory in 1st semester. Sixteen weeks of laboratory sessions introduced the students to the resource. Assignments included searching the WEB, downloading files from the Internet, scanning documents/graphics, and producing a PowerPoint presentation.
3. All coursework is available on the WEB. Each course of the professional curriculum has a WEB page where the syllabus, course schedule, individual lecture notes, slides, and other materials are available to students at Shenandoah, both on and off campus.
4. Faculty are encouraged to make course assignments that require technology (e.g., searching, word processing, PowerPoint slides, etc.).
5. Folders for each of the high impact disorders are placed within each student's individual space on the network for input of materials throughout the program.
6. Annual progress examination requires computer skills for completion. Some aspects of the examination will be on the computer. Students may access patient profile information and complete part of the exam on the computer.
7. Database (Micromedex, Medline, Lexicomp) access via the network. These databases are available to students, both on and off campus.
8. All experiential preceptors at all locations have access to the School network and all materials. This strategy incorporates the emphasis within the School mission of community/rural care.
9. Notebook computers will be provided (as part of their technology fees) to each student on entry into the program.

APPENDIX 7

Dear:

Congratulations on your acceptance into Shenandoah University School of Pharmacy. You are preparing to join a health care profession that is undergoing rapid change. Much of the change concerns the use computers to manage information about drugs, patients and the two in combination. To better prepare you for this aspect of your career the faculty of the School of Pharmacy have adopted a policy requiring all pharmacy students to acquire a laptop computer powerful enough to utilize the software and informational databases that we have created. After careful deliberation and examination of various options we have elected to utilize a lease-purchase program from International Business Machines (IBM).

The program is widely used throughout the country by schools that require laptops as part of the curriculum. The lease-purchase agreement will provide you with a 133 MHZ Pentium computer with sufficient random access memory and hard disk storage capacity to match your needs for the period of your study. A complete configuration is provided on the attached sheet.

The lease-purchase arrangement relieves you of the task of locating and purchasing a computer with the exact capabilities required to access and utilize the vast informational resources that we are creating here in the School of Pharmacy. With the laptop you will be able to download detailed lecture notes, test questions, scanned images and slides that will be used in your instruction. You will have an electronic mail and Internet account which will permit you to communicate with faculty, family and other pharmacists whether you are in the school or later from remote practice sites.

We have invested heavily in our computer infrastructure to permit you to expand and improve the quality of your educational experience. The limiting factor is always **access**. Without the laptop you would be forced, during peak periods of the day, to wait for one of the fifty computer laboratory workstations to be available. With the laptop, you will be able to connect to the computer system from numerous points both within and outside the school. Access should not be a problem.

We have made a similar commitment to integrate computer and information management skills into every course here at the school of pharmacy. This is a unique aspect of the educational program you are about to begin. Computers are not taught as a single **course**; it is an integral component of every course you receive. You will be encouraged to use your laptops in each classroom and we have provided for multiple access jacks throughout the building to facilitate your use. I feel strongly, that when you graduate from Shenandoah University, your ability to function in an increasingly information-rich health care environment will be far superior to other recent pharmacy graduates and practitioners.

Sincerely,

Alan McKay, Ph.D.
Professor and Dean

Shenandoah University School of Pharmacy
Technology Initiative
Lease - Purchase

<u>Configuration</u>

Pentium 133 MHZ Laptop	**PCMCIA 33.6 kbps Data/FAX modem**
24 mbyte RAM	**PCMCIA Ethernet Adapter**
1.08 gbyte HD	**MS Office**
3 ½ Floppy Drive	**Netscape Navigator 3.0**
8× CD-ROM	**Windows 95**
Communications/FAXsoftware	

All Shenandoah University School of Pharmacy students will be required to lease/purchase a laptop computer beginning with the Fall Semester, 1997. The graduating class of 2000 will utilize the same laptop for three years. The graduating class of 2001 and all others will receive a laptop for two years and will trade the original laptop in for a new computer for the remaining two years of their educational program. The monthly technology fee will remain at the same level for the period of the lease.

The base price for this configuration is **$2,295.00.** The monthly **technology fee** charged to students receiving laptops will be **$100**. This fee covers the base price for the unit, financing, software,[1] maintenance and replacement insurance. The Shenandoah University Financial Aid Office has made the necessary modifications to your loan eligibility. They may be contacted directly should you have questions concerning either financial aid or student loans. The local vendor would be responsible for configuring the laptops, *burning* them in for 24 hours and delivery. Repairs will be made by an IBM facility in Memphis, Tennessee on an overnight basis. Students may send units to the facility from wherever they may be when the problem arises via Federal Express.

Students will be given the opportunity to purchase the old laptop for *fair market valu*e at the end of their final lease period (either two or three years). While it is difficult to predict what that value would be in the summer of 1999 or 2000, it has generally been about $600-800 for the IBM Thinkpad.

FN: laptop.wpd
FD: 7/8/97
abm

1. Computers will be equipped with Microsoft Office Suite, Netscape Navigator, Microsoft DOS and Windows 97 and communications FAX software.

APPENDIX 8

MISSION STATEMENT

The School of Pharmacy is an instrument of Shenandoah University for the State of Virginia to prepare pharmacists with the knowledge and skills to provide comprehensive pharmaceutical care. Thus our primary mission is:

- to provide a comprehensive educational program for the education and training of entry-level practitioners and the continued development of practicing professionals through a non-traditional Doctor of Pharmacy degree program and comprehensive continuing education programs;
- to provide service through leadership in addressing the health care needs of an increasingly diverse patient population; and to
- constantly strive to add to the knowledge base of the profession of pharmacy.

The culture–the way we live and act–in the Shenandoah University School of Pharmacy is created by those values which we have, teach and live:

- Our top priority is the creation of an environment, opportunities and stimuli for faculty, students and practitioners of the profession to learn, maintain and expand upon the knowledge and skills necessary to meet the health care needs of the patients they serve.
- Our curriculum is centered on our students who themselves assume primary responsibility for their own educational outcomes; faculty and staff serve as mentors and facilitators in a shared partnership with the students.
- Our interpersonal relationships are collaborative–defined as mutual learning and shared creation, we value teamwork and those that are good team members.
- Our commitment to the citizens of Virginia fosters community involvement and enhances our commitment to serve their primary and community health care needs. The School constantly strives for creative solutions to the health care needs of the citizens of Virginia through the use of innovative, multidisciplinary models of health care delivery.
- Our collective commitment to prepare students for both today's and tomorrow's practice encourages us to employ state-of-the-art technologies in all aspects of our professional programs. Students, reflecting this commitment, will contribute to solving health care problems through innovation, communication, and dedication to improving the community as a whole.

The results of embracing and living the Shenandoah University School of Pharmacy values are:

- Quality, innovative pharmaceutical education;
- Preparation of professionals with an unwavering ethical foundation;
- A positive, rewarding, and stimulating work environment;
- A noticeable and positive impact on the communities in which we work, study, and live.

APPENDIX 9

Shenandoah University
School of Pharmacy
Instructor/Course Evaluation

The purpose of this survey is to evaluate your perceptions of this instructor/class within the pharmacy program. Summarized data will be provided to the instructor as well as written comments, without name. Summarized data is also provided to the chairperson of the department from which the course is offered.

I. INSTRUCTOR

Please indicate your level of agreement with the statements, using the scale:

SA   Strongly Agree
A   Agree
D   Disagree
SD   Strongly Disagree
NA   Not Applicable

The instructor in this course:

A. Course Content

	(*Circle one*)				
1. Communicated course objectives.	SA	A	D	SD	NA
2. Course objectives agreed with those actually taught.	SA	A	D	SD	NA
3. Organized presentations.	SA	A	D	SD	NA
4. Summarized major points.	SA	A	D	SD	NA
5. Discussed current developments.	SA	A	D	SD	NA
6. Demonstrated knowledge of subject.	SA	A	D	SD	NA

B. Presentation/Style

7. Is a dynamic and energetic teacher.	SA	A	D	SD	NA
8. Utilized audio/visual resources effectively.	SA	A	D	SD	NA
9. Served as a good professional role model.	SA	A	D	SD	NA

C. Learning

10. Stimulated learning.	SA	A	D	SD	NA
11. Encouraged active discussion.	SA	A	D	SD	NA
12. Was concerned for my learning.	SA	A	D	SD	NA

D. Student Contact

13. Encouraged mutual respect.	SA	A	D	SD	NA
14. Treated students as individuals.	SA	A	D	SD	NA
15. Remained accessible to students.	SA	A	D	SD	NA
16. Encouraged student responsibility.	SA	A	D	SD	NA

E. Examinations/Grades

17. Examinations/graded materials tested course content as emphasized by instructor.	SA	A	D	SD	NA

18. Methods of evaluating student work was fair and appropriate.	SA	A	D	SD	NA
19. Feedback on examinations/graded material was valuable.	SA	A	D	SD	NA
20. Assigned grades fairly.	SA	A	D	SD	NA

(Circle one)

Overall, I rate this instructor as: A+   A   B+   B   C+   C   D+   D   F

II. COURSE

> *Please indicate your level of agreement with the statements, using the scale:*
>
> **SA**   **Strongly Agree**
> **A**   **Agree**
> **D**   **Disagree**
> **SD**   **Strongly Disagree**
> **NA**   **Not Applicable**

The course:

(Circle one)

1. Resources were adequate (e.g., audio/visual, space).	SA	A	D	SD	NA
2. Text was appropriate.	SA	A	D	SD	NA
3. Related library holdings were adequate.	SA	A	D	SD	NA
4. Position within the curriculum was optimal.	SA	A	D	SD	NA
5. Difficulty was more than I expected.	SA	A	D	SD	NA

III. STUDENT EXPECTATIONS OF THE COURSE

(Circle one)

6. I learned something which I consider valuable.	SA	A	D	SD	NA
7. I found the course intellectually challenging and stimulating.	SA	A	D	SD	NA
8. I learned and understand the subject matter of this course.	SA	A	D	SD	NA
9. Course allowed me to master competencies which were identified for this course.	SA	A	D	SD	NA

10. Grade that you expect in this course: **A**   **B**   **C**   **D**   **F**

PRACTICE FACULTY

> *Please indicate your level of agreement with the statements, using the scale:*
>
> **SA**   **Strongly Agree**
> **A**   **Agree**
> **D**   **Disagree**
> **SD**   **Strongly Disagree**
> **NA**   **Not Applicable**

The instructor in this course:

(Circle one)

1. Demonstrated procedures and techniques.	SA	A	D	SD	NA
2. Communicated responsibilities.	SA	A	D	SD	NA
3. Explained practice problems clearly.	SA	A	D	SD	NA
4. Explained his/her approaches/techniques for clinical problem solving.	SA	A	D	SD	NA
5. Guided problem-solving skill development.	SA	A	D	SD	NA
6. Provided periodic formal appraisal of my work.	SA	A	D	SD	NA

7.	Served as a good role model for practice.	SA	A	D	SD	NA
8.	Was flexible to the opportunities of the site and my educational needs.	SA	A	D	SD	NA

APPENDIX 10

SCHOOL OF PHARMACY FACULTY EVALUATION PLAN

The design of a comprehensive assessment system is guided by the following principles:

1. If the system is to be *comprehensive*, everyone must participate. No part of an academic unit functions in isolation.
2. Unfortunately, evaluation is frequently viewed with suspicion as it were punitive measure. Therefore, the design of our assessment must be guided by the precept of evaluation as a constructive process. *The system must be included as a component of an overall faculty development plan.*
3. Two essential elements of an assessment system are *time* and *resources*. Time must be allowed to evaluate the information obtained, to take "corrective" action and for results to be observable. If additional resources are needed, they should be made available.
4. Evaluation of a faculty member's teaching or administrative responsibilities cannot be accomplished in a single episode of instruction or performance. Rather, to effectively and fairly judge a faculty member's performance a record of achievement must be established. Thus, faculty performance will require several evaluations, perhaps in different classes or settings. Peers as well as students should offer input with regard to teaching. Collected data should be comprehensively maintained by the School.
5. All components of an assessment system and its functioning should be closely monitored and be subject to periodic review. The system should be dynamic. The Faculty Affairs Committee should routinely monitor the proposed system once it is operational.

INSTRUCTOR EVALUATION

Recommendations pertaining to "What or who should be evaluated?"

1. Both instructors in the classroom and clinical settings should be assessed.
2. The instrument for instructor evaluation which has been piloted (attached) be adopted.

3. The same instrument should be used by both students and peers.
4. A faculty member may request the Faculty Affairs Committee to evaluate their teaching or other activities at any time.
5. One of the most important requirements of the instructional component is that the results be analyzed and returned to faculty as soon as possible. Results should be made available to the faculty as soon as possible following the evaluation.

Recommendations pertaining to "How the evaluation will be administered?"

1. Courses taught by one faculty member

   (A) Evaluations will be conducted at least once per year per course taught, more frequent evaluations are recommended.
   (B) The evaluation will be administered in class during the last 4 weeks of the semester by the representatives of the Faculty Affairs Committee.
   (C) Results, with instructions for interpreting the results, will be mailed directly to the individual faculty member and to the appropriate departmental chairperson by the above individual.

2. Team taught courses

   Faculty presenting 5 or more lectures in "team-taught" courses would be evaluated at the conclusion of their primary teaching series within the course in the same way as those members who teach in single instructor courses.

3. Laboratory/Rotation/Elective Courses

   It is envisioned that faculty should be evaluated in a variety of teaching environments.

   Instruction within an elective course should be evaluated as instruction within required courses.

Recommendations pertaining to "Use"

1. The primary purpose of assessing instruction is to provide individual faculty members with student input pertaining to teaching effectiveness. To achieve this purpose, it is essential that the assessment

plan provide for, time to take "corrective" action if areas of ineffectiveness are identified and for the results to be observable.

- Additionally, assistance in corrective areas of ineffectiveness should be made available. Workshops for faculty development in education should be designed, implemented, and funded by the School Faculty Development Program.

2. Data from all facets of the evaluation process will be kept and maintained by the Associate Dean for Academic Affairs who will make information available to the Faculty Affairs Committee on request.

FACULTY AFFAIRS COMMITTEE

1. The Faculty Affairs Committee shall be composed of three faculty members from each academic department in the School of Pharmacy. Neither the Dean of the School of Pharmacy nor the academic department chairs are eligible for election to the committee.
2. When this committee is functioning as the peer review committee, the membership shall also include two professional pharmacy students selected by the Pharmacy Student Senate, each having 0.5 vote.
3. One faculty member from each of the departments shall, at the initial committee formation, serve for three years, and one member will have a two-year appointment. Thereafter, all members shall be elected for a two-year period. The student representatives shall serve for one year.
4. The Faculty Affairs Committee shall serve as the standing peer faculty evaluation body, and shall conduct all individual faculty activity evaluations requested by the Dean for purposes of recommending academic promotion, for the awarding of long-term contracts, or for the continuance of contracts. This Committee shall also represent the total faculty of the School in all matters pertaining to the purposes and powers of the faculty as defined in University and/or School of Pharmacy Bylaws and policies. This Committee, as an advocate of faculty welfare, may thus consider all matters of relevant business referred to it by the faculty, as well as by the Dean or other faculty officers. In more specific terms, this committee shall develop policy and make recommendations pertaining to:
   - Procedures and instruments to be used in the evaluation of individual faculty activity by students and faculty peers for the evaluation of petitions for promotion and awarding of contracts.

- Procedures of grievance concerning academic promotion, and the awarding of long-term contracts.
- Any other matter it chooses to consider pertaining to faculty welfare.

5. The Faculty Affairs Committee shall also be responsible for the maintenance of the School of Pharmacy Bylaws, and will also advise the Executive Committee of the School on recommended changes, additions or deletions to the School of Pharmacy Faculty and Staff Policy and Procedures Manual.

6. The Faculty Affairs Committee shall elect its own officers at its initial meeting of the new year and report its minutes, policy and recommendations to the Executive Committee through the Dean.

7. The Faculty Affairs Committee shall serve as the standing committee of the faculty to foster, promote and assess teaching enhancement, advising the Associate/Assistant Dean for Academic Affairs on these matters. Specific activities include, but are not limited to:
   - Plan workshops, speakers, retreats or other structured activities designed to enhance the teaching skills of the general faculty.
   - Foster activities or individuals that will increase the School's endowment, particularly in support of teaching enhancement and recognition.
   - When requested in writing by an individual faculty member, conduct a peer evaluation of the teaching effectiveness of that faculty member. The results may, at the faculty member's discretion, be reported to the faculty member's department chairperson to be included as part of the chairperson's formal evaluation.
   - Conduct a peer review of teaching effectiveness of each faculty member who has requested promotion and/or a long-term contract. The results of this review shall be included in written form in the promotion and/or contract report of the Committee. A copy shall also be delivered in writing to the candidate who may, at his/her discretion, deliver a copy to the department chairperson.

8. To accomplish the work in the several areas of responsibilities, this Committee may be divided into subcommittees under the direction of subcommittee chairs, except any subcommittee assigned the duties of peer review of teaching effectiveness shall have a two third's majority of the members (4 members) holding rank status at least equivalent to the individual faculty member being reviewed.

APPENDIX 11

**Shenandoah University School of Pharmacy
Student Outcomes Policies**

<u>Academic Standards:</u>

1. All aspects of the Doctor of Pharmacy program are subject to assessment, and rank or administrative level do not exempt individuals from the assessment process.
2. All curricular goals must be assessed several times during the program both formatively and summatively.[1] This is most easily achieved when each course team constructs a test plan that matches each course objective with two or more assessments.
3. In-class assessment will be the responsibility of each course team and should focus on:

   * reaction: to context, instruction, content, resources, processes, and
   * learning: knowledge, skills, values, habits.

4. To the greatest possible extent there should be externality–teaching and summative assessment (e.g., annual progress examination) should be separated so that the teacher and student can become true partners in learning.
5. Inadequate performance of both students and instructors must lead to remediation. In the case of students, instructors should assume responsibility for defining the goals of remediation. In the case of faculty, the Associate Dean for Academic Affairs will assume responsibility for collaborating with faculty to define remediation goals through faculty development.
6. In order to complete the program, students must satisfactorily achieve all program milestones (i.e., course grades and annual progress examination). Specifically, course grades of "F" and failing grades on each annual progress examination must be successfully repeated (successful completion of a course is a grade of "D" or higher, each component part of the annual examination must be at or above the scores listed in item 5 of "Policies") in order for students to progress successfully.
7. **<u>Ultimately, the responsibility for learning must be the learner's.</u>**
8. Assessments should have a constructive purpose, beneficial to the individual being assessed as well as the individual(s) calling for the assessment.
9. The individual being assessed has the right to be informed of:

- initially, what performance is expected
- linkages between performance and instruction
- the purposes of the evaluation
- what aspects of performance will be evaluated
- by whom the evaluations will be performed
- the criteria used
- to whom the assessment will be reported
- the results of the assessment.

10. Students and instructors have a right to reliable assessment proce-
    dures that have undergone validation.
11. Formative teaching assessment is integral to students' achievement
    of learning outcomes[2] by ensuring:

- an appropriate scope and degree of difficulty of the curriculum
- attainability of objectives
- appropriate learning materials and resources (i.e., content, level
  of difficulty, organization, effectiveness, and accuracy)
- appropriate instructor expertise
- consistency between curricular goals, course content, objectives,
  instructional methodology, and assessment
- the relevancy of material relative to pharmacy education
- accessibility, sensitivity, helpfulness, interest, and responsive-
  ness of the instructor.

Policies:

1. Student progress will be determined by the **Academic Standards
   Committee** of the School taking into consideration course grades
   and the results of a comprehensive progress test, which occurs in
   May of each year, taken by all students.
2. All assessments, be they in-class, mid-term examinations, final
   course examinations, or the progress test, must provide the follow-
   ing information to the student in a timely fashion:

   a. a list or description of mistakes that were made (this may simply
      consist of the returned paper with a list of correct responses
   b. the score or average level of competency for the class
   c. the score or level of competency expected
   d. the score or level of competency obtained
   e. in addition it is recommended that the following information be
      provided on a regular basis:

     i. strengths that were demonstrated
    ii. areas for improvement that were indicated.

3. Course grades will be assigned by the faculty team responsible for each course.
4. Students' grades should not be posted publicly.
5. Progress test scores will be reported for each of *Shenandoah's Twelve* primary competencies. Possible competency scores range from 0 to 4 (competency level of a graduate). The scores will be reported as a number with one decimal place, as calculated from the weighted average of all items in the progress test that assessed that item. Weighting will be decided by the relative difficulty of the items. The level of expected competency increases with year of study completed. To progress, students must achieve average scores for each competency as show in the following Table:

PROGRESS	SCORE REQUIRED
P1 → P2	≥ 0.6
P2 → P3	≥ 1.7
P3 → P4	≥ 2.8
Graduation	≥ 3.6

6. The distribution of grades in any course or progress test will not be predetermined by any system.
7. To progress a student will:

- earn a minimum grade of "D" in each course of the professional curriculum.
- earn a passing score in all competencies in the progress test.
- maintain a minimum 2.00 grade point average cumulatively for all courses in the professional curriculum (*Cumulative GPAs are calculated by dividing the total grade points earned by the total number of semester credit hours completed. To determine academic standing, grade point averages are rounded to the first decimal place (or nearest 0.1 point)).*
- complete any academic deficiencies (i.e., repeat all failed courses) and/or required remedial courses and/or materials in the time and manner prescribed by the Academic Standards Committee of the School of Pharmacy.

8. To graduate, all students will have:

- earned a minimum grade of "D" in each course of the professional curriculum
- maintained a minimum 2.00 grade point average cumulatively for all courses in the professional curriculum (*Cumulative GPAs are calculated by dividing the total grade points earned by the total number of semester credit hours completed. To determine academic standing, grade point averages are rounded to the first decimal place (or nearest 0.1 point)).*
- demonstrated at least level 3.6 ability in each of *Shenandoah's Twelve* major competencies.

9. The Assistant Dean for Student Affairs shall review each student for satisfactory progress through the curriculum, considering grades and the annual progress examination. The Associate Dean for Academic Affairs will be responsible for developing and administering the annual progress examination and reporting the results to the Assistant Dean for Student Affairs. The Assistant Dean will then report to the Academic Standards Committee of the School of Pharmacy all student academic information. The Academic Standards Committee will decide on student progress and report to the faculty body the disposition of each student on a semester basis, either for continuance or dismissal.

10. Individual course coordinators and the Associate Dean for Academic Affairs will be accountable for maintaining records of assessments until two years post-graduation.

11. Failure to achieve the level of performance required for that particular year of study in any of *Shenandoah's Twelve* competencies will result in mandatory remediation in those competencies.

12. Those for whom it has been necessary to undergo remediation, must pass a second competency examination.

13. Students who fail to complete the program requirements as described above ***usually will not proceed to the next year***.

Students who fail to maintain satisfactory academic progress (specifically addressed in #7 above) in the professional program are automatically placed on **academic probation**. Students on academic probation are required to meet with the Academic Standards Committee of the School of Pharmacy prior to enrolling for the subsequent academic semester. Students on academic probation may be required to participate

in academic counseling and/or to enroll in a remedial program of study outlined by the Academic Standards Committee, or they may be **academically dismissed** from the program according to the policies described in subsequent sections.

Actions taken in these matters are not to be viewed as punitive, but as an attempt to design a curriculum of study that meets the individual needs of the student and in recognition that it is unrealistic for a student to continue in a course of study where there is little probability of success.

Academic Standards Committee:

The Academic Standards Committee is a subcommittee of the School of Pharmacy Student Affairs Committee and is comprised of the Assistant Dean for Student Affairs who serves as permanent secretary of the Subcommittee, Associate/Assistant Dean for Academic Affairs, and two faculty members, one from each academic department. The Subcommittee chair is appointed by the Student Affairs Committee chair. The Committee reviews student performance, as recommended by the Assistant Dean for Student Affairs, on a routine basis. The Committee meets with individual students who are on academic probation at least 3 times during the academic year, prior to the fall and spring semesters and at the conclusion of the academic year.

The Committee:

- gives academic guidance to individual students for their progression and prescribes remedial mechanisms for students on academic probation
- reports to the Dean and Faculty on the disposition of students in the program
  - continuation
  - academic dismissal.

Academic Probation:

Academic Probation is the initial official action for a student failing to make satisfactory academic progress. A student may be placed on academic probation for:

1. failure to earn a "D" or better in any course
2. failure to maintain a cumulative grade point average of 2.00
3. failure to score an appropriate level on the annual progress examination.

Depending on the nature of the academic deficiencies and the overall academic record, a student placed on academic probation may or may not be permitted to continue in the regular sequence of the professional curriculum. The Academic Standards Committee of the School of Pharmacy will review and report to the faculty the disposition of a student placed on academic probation.

Successful completion of all remedial work as prescribed by the Academic Standards Committee in the designated time will remove the student from academic probation. If a student fails to make satisfactory progress during the period of academic probation, and/or fails to correct academic deficiencies within the prescribed time, that student will be subject to suspension and may be **academically dismissed** from the School of Pharmacy.

Academic Dismissal:

Academic Dismissal from the School of Pharmacy may occur if a student:

1. fails to make satisfactory progress during a period of academic probation
2. has academic deficiencies that preclude continuation in the prescribed program of study, and may not reasonably be expected to complete the requirements for the degree
3. fails to make scores at an appropriate level on the Annual Progress Examination during academic probation.

Students dismissed from the School of Pharmacy may seek reentry by applying for readmission during the normal admissions cycle.

Missed Examinations or Assignments:

1. Missed examinations or assignments are any missed assessments (components of the course that the student may be graded on) that constitute a portion of the final grade for a course or for the year.

2. Valid reasons for missing examinations may include personal illness, illness or death of a close family member, or unavoidable mishaps such as an automobile accident on the way to the examination. Work is not a valid excuse. A letter from a physician or member of the clergy, or other appropriate professional familiar with the circumstances, may be required to substantiate the reason, at the discretion of the faculty course coordinator.

3. When students miss an examination or assignment, it is the student's responsibility to notify the instructor (in the case of courses) or the School (in the case of the progress test) according to the time limitations indicated in the course syllabus.

4. When a final examination or the Annual Progress Examination has been missed, the **student will receive a zero if the course coordinator is not notified in time and arrangements made**.

5. Where a reason, considered valid by the instructor, is not presented, the student will be given a zero for the missed examination.

Re-Grading:

1. Difficulties with assessment items on examinations should be communicated in writing to the examiner <u>before</u> the examination is graded.

2. Students may request in writing to have an assessment regraded at the instructor's discretion. Regrading may result in a lowering, raising, or no change of the score.

Course Assessment:

1. Each course team will develop a set of course objectives that include relevant knowledge, skills, values and habits within the discipline(s) associated with the course.

2. Based on this set of course objectives, the team will develop a parallel list of behaviors that demonstrate that the student possesses the knowledge, skills, values and habits, and that could be elicited by some examination format.

3. Each course team is expected to assess general class response and understanding at least once during the course, although frequent, short (that take no more than 5 minutes of class time, perhaps once a week) assessments are preferred.

4. To pass the course, students must earn a "D" or better. Examinations will provide feedback regarding strengths and weaknesses in the curricular competencies and suggestions for remediation and ad-

ditional learning. Examinations shall be returned to the students in a timely fashion in order to maximize learning from the assessment. Clerkship assessments will resemble course assessments. As long as students pass clerkships, they will be allowed to proceed, but feedback from each clerkship assessment will be expected to be used to correct misperceptions and drive further learning.

Annual Progress Examination:

Students will take an annual comprehensive progress examination that assesses all the core competencies of the curriculum (*Shenandoah's Twelve*).

The progress exam will consist of many items of varying levels of difficulty, drawn from prior course materials, case scenarios, patient simulations or skill demonstration. The most difficult assessment items will consist of problems that the student must address completely without any assistance. The second most difficult assessment items will provide students with problems and opportunities to use resources to supplement areas of incomplete knowledge or competence. The least difficult problems will consist of multiple choice questions that cover key areas of content.

Students are expected to achieve an appropriate level of competency in each of *Shenandoah's Twelve* abilities. If they do not fulfill all competency requirements, they will be asked either to:

- repeat courses, or;
- undertake independent learning, or other remedial work.

If a satisfactory level of competence is not achieved by the end of the year, the student will not progress.

Appeals:

At the end of each academic semester, the Assistant Dean for Student Affairs reviews the academic performance of all students enrolled in the School of Pharmacy, and evaluates each student's qualifications to progress in the professional program. The Assistant Dean notifies each student placed on academic probation; and furthermore, makes notification of current academic deficiencies to the student and the Academic Standards Committee. Each student that is notified of academic diffi-

culties will meet with the Academic Standards Committee for direction on remediation or dismissal from the School.

Any student in the School has the opportunity to appeal any decision made by the Academic Standards Committee. Written confirmation of a student's intent to appeal must be received by the Dean of the School of Pharmacy within seven days of the student's receipt of notification of the decision.

Course Waivers:

Students wishing to waive a course must submit a letter requesting a waiver to the Assistant Dean for Student Affairs, at least one month prior to the beginning of the semester in which the course in question is being offered, who will forward the request to the appropriate course faculty who would then make a recommendation to the Academic Standards Committee to make a final determination. Waivers will be determined on a case by case review of each student.

NOTES

1. Formative assessment (i.e., assessment for learning that results in feedback about strengths and areas for improvement) should be the norm, and summative assessments (i.e., assessments that are used for credentialling, deciding progress, etc.) should mimic the style of the formative ones.

2. The faculty at Shenandoah University School of Pharmacy developed outcome competencies (characteristics), referred to globally as *Shenandoah Twelve,* for graduates with input from the Center for the Advancement of Pharmaceutical Education (CAPE).

APPENDIX 12

Shenandoah University School of Pharmacy Policy on Remediation
and Reassessment

I. Reassessment

The School of Pharmacy faculty is committed to facilitating the professional development of students. Professional development and progression through the curriculum is a partnership between students and faculty. As a means of facilitating learning to pre-specified competency levels, the faculty believes that, on occasion, students deserve a second chance to demonstrate competence in a major course assessment. Therefore, Doctor of Pharmacy students have a one-time opportunity within each course to re-take one exam or re-do a major course assessment. This policy does not apply to quizzes, homework, and other minor assessment exercises as determined by the course coordinator. Each course coordinator will outline the course policy for re-grading in the course syllabus.
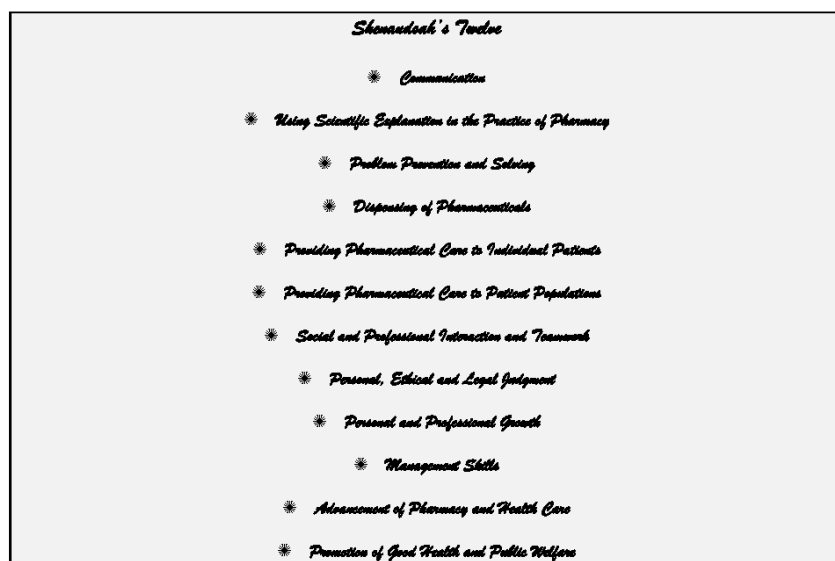
Policy

This policy applies to all Doctor of Pharmacy courses except all clerkship and problem-solving laboratories. Doctor of Pharmacy students who earn less than 70% on a major course assessment (e.g., exam, care plan, lab practical), as determined by the course coordinator, will have a one-time opportunity within each course for a second chance to pass the assessment exercise. A student who receives a grade of less than 70% for a course assessment will be allowed a single re-examination under one of the following circumstances:

1. Student has achieved a grade of 70% or better on all but one test during the term and the one grade is above 50%
2. Student's grade is within 2 standard deviations from the class average on the particular assessment questioned, but yet below competency.

The second assessment must be completed within the time frame determined by the course coordinator; the second assessment grade cannot exceed 70% or minimal competency.

II. Remediation

The Shenandoah University School of Pharmacy curriculum is based on competencies within twelve distinct areas of expertise, *The Shenandoah Twelve*. It is the philosophy of the faculty that students may require more than one opportunity in order to demonstrate competence within any given course of the curriculum.

> **Shenandoah's Twelve**
>
> ❋   Communication
>
> ❋   Using Scientific Explanation in the Practice of Pharmacy
>
> ❋   Problem Prevention and Solving
>
> ❋   Dispensing of Pharmaceuticals
>
> ❋   Providing Pharmaceutical Care to Individual Patients
>
> ❋   Providing Pharmaceutical Care to Patient Populations
>
> ❋   Social and Professional Interaction and Teamwork
>
> ❋   Personal, Ethical and Legal Judgment
>
> ❋   Personal and Professional Growth
>
> ❋   Management Skills
>
> ❋   Advancement of Pharmacy and Health Care
>
> ❋   Promotion of Good Health and Public Welfare

Students earning a grade of F in any course within the curriculum may be given the opportunity to perform summer remedial work and re-assessment in order to replace the F grade with a D grade. The opportunity to remediate will be at the discretion of the Academic Standards Committee.

In order to remediate a curricular course it is essential that:

- Faculty develops student assessments that allow for identification of student deficiencies that will guide remediation efforts in the event they are required, that is remediation must be individualized.
- Students remediate on concepts in which they have been identified as "not-competent" and not over materials in which they have

    demonstrated competency. These competencies should be related
    to *The Shenandoah Twelve*.
- The program of remediation include instructional techniques that are uniquely different than those developed for the course that is being remediated.
- Although alternative pedagogy will be used, the remedial program be structured and specifically delineated to students at the time of remediation.
- General remediation plans for each course be documented within the course syllabus.

APPENDIX 13

Shenandoah University
School of Pharmacy

BYLAWS OF THE FACULTY

ARTICLE I: FUNCTION, FACULTY MEMBERSHIP, ORGANIZATIONAL OFFICERS AND GOVERNANCE

SECTION A. FUNCTIONS OF THE FACULTY

The Faculty of the School of Pharmacy shall be responsible for the governance of its affairs including, but not restricted to, student policies, curricular matters, faculty promotion and contract policies, and such operational policies as may be specified by the Bylaws.

SECTION B. MEMBERSHIP

All persons holding a 50 percent time or greater contractual appointment with Shenandoah University School of Pharmacy at the rank of Instructor or above shall be voting members of the Faculty of the School of Pharmacy.

SECTION C. DEAN OF THE SCHOOL OF PHARMACY

The Dean of the School of Pharmacy, as the presiding officer of the faculty, is the primary faculty organizational officer responsible for all fac-

ulty and student activities and academic business directed to the successful completion of the role and mission of the School of Pharmacy.

The Dean of the School of Pharmacy is appointed by and serves at the discretion of the University President, and Vice President for Academic Affairs.

SECTION D. FACULTY OFFICERS OF THE SCHOOL OF PHARMACY

The Dean of the School of Pharmacy shall be assisted by other faculty members who have been appointed to administer specific responsibilities delegated to them by the Dean. Such additional faculty officers shall be: (1) The Associate/Assistant deans for Academic Affairs and Student Affairs; (2) academic department chairpersons; and (3) other program administrators who may be appointed as department vice chairpersons, chiefs of clinical services, directors or coordinators.

Faculty officers are appointed by and serve at the discretion of the Dean.

SECTION E. MEETINGS OF THE FACULTY

Meetings of the faculty shall be convened at least once during each fall and spring semester. Additional meetings of the faculty may be convened at the discretion of the Dean, and shall also be called upon receipt, by the Dean, of a signed petition from five or more members of the faculty. Notice of such meetings must be announced no later than five working days after receipt of the petition.

The Dean shall preside over all meetings of the School of Pharmacy faculty organization, or in his/her absence, by another member of the faculty officer designated by the Dean.

Robert's Rules of Order, Newly Revised, shall be the parliamentary authority for all meetings, except as otherwise specified in the Bylaws.

All actions of the faculty establishing policy recommendations and/or changes in the Bylaws shall require an affirmative vote by a two-thirds majority of the eligible voting members of the faculty. All other actions

of the faculty shall require an affirmative vote by a majority of the members voting.

SECTION F. EXECUTIVE COMMITTEE OF THE SCHOOL OF PHARMACY

The Dean, associate/assistant deans, and academic department chairs shall constitute the EXECUTIVE COMMITTEE of the School. The chairperson of this committee shall be the Dean.

1. The Executive Committee shall serve to advise the Dean, and under his/her direction, shall coordinate and cause to be implemented all faculty, student, and staff activities required to fill the role and mission of the School. The Committee shall be guided in its several administrative and governance functions by policy and recommendations proposed by faculty committees and ratified by a two-thirds majority vote of the faculty membership. To this end, the Executive Committee shall recommend to the Dean:

   a. The appointment of the committee chair and faculty members nominated to serve on both standing and ad hoc faculty committees, except where membership is determined by faculty vote.
   b. The charges to each standing and ad hoc committee.
   c. The disposition of all minutes, recommendations and policy made by standing or ad hoc committees.
   d. Budget allocations and adjustments.
   e. Strategic planning activities, goals, and initiatives of the School.
   f. Changes, additions and deletions to the School of Pharmacy Faculty and Staff Policies and Procedures Manual.
   g. Other matters as may be brought to the committee by the faculty and officers of the school.

2. Minutes of the Executive Committee shall be kept, archived and copies provided to all members of the faculty. Faculty comments, suggestions or objections to decisions made by the Executive Committee and stated in these minutes shall be made in writing and directed to the Dean.

SECTION G. AMENDMENTS

Amendments to the Bylaws shall be presented in writing to each member of the faculty at least fifteen working days prior to the meeting at which such amendments shall be voted. Amendments to the Bylaws shall require a two-thirds majority vote of the faculty membership to be adopted.

ARTICLE II: ORGANIZATION UNITS

SECTION A. ACADEMIC DEPARTMENTS

1. The faculty of the School of Pharmacy shall be organized into academic departments according to professional or scientific area and teaching discipline. Two of these departments shall be known as: (1) The Department of Pharmaceutical Sciences, and (2) The Department of Pharmacy Practice. Additional departments, which may be created to meet future needs of the School, shall be formed and governed in accordance with these Bylaws for the two departments here named.

    a. The Department of Pharmaceutical Sciences shall be composed of all faculty holding an academic appointment in pharmacology, toxicology, pharmaceutical or medicinal chemistry, pharmaceutics, anatomy, biochemistry, microbiology, or similar and related basic science disciplines.
    b. The Department of Pharmacy Practice shall be composed of all faculty holding an academic appointment in clinical pharmacy, hospital pharmacy, community pharmacy, pharmacy administration, pharmacy practice, or similar and related practice disciplines.

2. Each department shall formulate and follow a departmental role and mission statement and goals which are in support of the role, mission and goals of the School. This mission and role of the department shall also adequately and appropriately support the special and unique faculty needs of that department, and shall also effectively contribute to the development and delivery of the professional curriculum, to policy pertaining to faculty governance, and academic standards.

3. Each department shall be allocated a separate operational budget, and each shall be administered by a member of the departmental faculty appointed to such responsibility by the Dean. These administrators shall be the academic department faculty chairperson, and each will be responsible for providing leadership and governance to all faculty and staff appointed to that department.

    a. Other, more specific responsibilities of the academic department chairperson shall include, but not be restricted to:

        1. The recruitment, and recommendation for academic appointment, of departmental faculty as directed by the Dean. It is expected that departmental faculty search committees be used appropriately in this process.
        2. The assignment of teaching responsibilities to optimally deliver the professional and graduate curriculum assigned to that department by the Dean.
        3. Work with the Associate Dean for Academic Affairs to provide opportunity for and assist each member of the faculty in achieving optimal professional development in teaching, research or scholarly activity, and professional service.
        4. Conduct bi-annual and special evaluations of departmental faculty and staff as required by University or School policy, and make recommendations pertaining to salary adjustments and personnel actions to the Dean.
        5. Conduct the departmental review of applicants for promotion and/or contract, according to the policies and procedures established in the Bylaws. Formulate recommendations for academic promotion and the awarding of, or continuance of contract to the School of Pharmacy Faculty Affairs Committee who shall stand as the Faculty Evaluation Committee in the School.
        6. Manage and direct the acquisition and disposition of the departmental budget as directed by the Dean, and in accordance with University and School policies.

4. A departmental chairperson may be assisted in his/her responsibilities by other faculty members appointed to serve as vice departmental chairpersons, as chiefs of clinical services, program directors or

coordinators or in other specific administrative functions. Such appointments, like that of the chairpersons, is through approval by and action of the Dean.

5. Departmental chairperson are appointed by the Dean, ordinarily with the affirmative recommendation and support of the departmental faculty. In making this recommendation, the departmental faculty as a whole shall serve as a search committee, and will recommend a choice of candidates only upon an affirmative vote of a simple majority of the voting faculty members in the department. The search committee, as a whole, may be assisted in this process by a subcommittee of its members appointed by the Dean to screen and review candidates for the position.

6. Departmental chairpersons in the School of Pharmacy shall serve at the discretion of the Dean, unless otherwise directed by University policy.

SECTION B. FACULTY COMMITTEES

1. Standing faculty committees shall be appointed to represent the total School faculty organization in the governance of their affairs, and to protect and promulgate faculty interests pertaining to the mission, role and functions of the School. These committees shall develop policy and provide recommendations for the governance of the following specific areas of academic business:

   a. Student qualifications and standards for admission into the professional and graduate education programs, and for progression in either curriculum.
   b. The requirements and standards for graduation from the professional and graduate education programs.
   c. The requirements and standards for faculty professional development, including academic promotion.

2. Faculty membership on standing School of Pharmacy committees shall be determined by the requirements of committees as described in these Bylaws, and shall equally represent each department (Article III). When membership is determined by faculty nomination and vote, such elections will be conducted by the Dean's office. Committee memberships shall be appointed by the Dean from nominations submitted by the Executive Committee.

In either case, individual faculty members shall serve on only one standing committee in the School at any one time, except, if a department does not have sufficient qualified members to serve, or where a faculty member may be elected to serve on the Faculty Affairs Committee while still serving on another committee. Individual committee memberships shall also be limited to a period not to exceed two consecutive academic years, except as provided for initial committee appointments. The two-year limitation also does not apply to designated administrative representatives. A retiring member of any one committee may again be appointed, nominated or elected to that same committee after a lapse of one academic year.

If an elected or appointed departmental faculty representative to a standing School committee leaves the faculty organization permanently, or temporarily for a period to exceed six or more months, the Dean shall cause to have an alternate representative to that committee elected or appointed no later than ten working days following the occurrence of the committee vacancy. An alternate representative shall serve only for the time remaining on the original term of the faculty representative replaced, but will be eligible for re-election or re-appointment to that same committee as a regular representative immediately following the completion of the alternate's term of committee membership.

3. Faculty membership on standing School committees shall be appointed initially to allow a replacement of only 50% of its elected or appointed membership in an academic year. To accomplish this, each standing committee to be newly organized under these Bylaws shall be appointed with one-half of the faculty membership serving for a period of three years, and one-half for the regular two-year period. Those members appointed for three years initially will be replaced after that period by an equal number of representatives appointed for the normal two-year period.

4. A standing academic year shall be from May 1 through April 30 of the next year, with the exception of the Student Affairs Committee that will serve through the end of the school year (~May 15), in order to complete the student admissions cycle. Each year will begin

with the seating of new members, the election of new committee officers, and the determination of a specific agenda for the next year. These organization functions shall be accomplished by each committee by May 1 (or as close to this date as possible) of each year. Each committee will then begin its work, fully organized, during the first thirty days of the next academic year beginning approximately August 1.

a. New committee appointments are to be determined, as specified, no later than April 15, and be seated on the respective committees by May 1.
b. In addition to seating new members and approving the new agenda, each committee will, unless otherwise directed by these Bylaws, elect a vice chairperson. The committee chairperson shall direct the activities of the committee and preside over its meetings, with the assistance of the vice chairperson.
c. Committee officers shall serve for a period of one academic year beginning with the organizational meeting in which they were appointed or elected and extending through the next organizational meeting the following year.
d. The initial formation of each committee shall be under the direction of the appointed chairperson, who shall cause the first membership to be elected or appointed, and the first organizational meeting to be scheduled and called no later than May 10 of each new academic year.

5. Standing committees shall keep and approve all minutes of meetings and business. The secretary shall be responsible for the timely preparation of the minutes and their archiving. When accepted and approved by committee membership, minutes shall be distributed to the Executive Committee through the designated liaison. When such minutes include a specific recommendation or policy for faculty consideration, the Executive Committee shall communicate their acceptance and action to the standing committee recommendations within fifteen working days after receipt. If a new recommendation or policy is accepted as submitted by the standing committee, the Executive Committee shall cause that such will be presented to all members of this faculty organization for approval and ratification by a two-thirds majority vote.

ARTICLE III: STANDING FACULTY COMMITTEES

SECTION A. FACULTY AFFAIRS COMMITTEE

1. The Faculty Affairs Committee shall be composed of three faculty members from each academic department in the School of Pharmacy. Neither the Dean of the School of Pharmacy nor the academic department chairs are eligible for election to the committee.
2. When this committee is functioning as the peer review committee, the membership shall also include two professional pharmacy students selected by the Pharmacy Student Senate, each having 0.5 vote.
3. One faculty member from each of the departments shall, at the initial committee formation, serve for three years, and one member will have a two-year appointment. Thereafter, all members shall be elected for a two-year period. The student representatives shall serve for one year.
4. The Faculty Affairs Committee shall serve as the standing peer faculty evaluation body, and shall conduct all individual faculty activity evaluations requested by the Dean for purposes of recommending academic promotion, for the awarding of long-term contracts, or for the continuance of contracts. This Committee shall also represent the total faculty of the School in all matters pertaining to the purposes and powers of the faculty as defined in University and/or School of Pharmacy Bylaws and policies. This Committee, as an advocate of faculty welfare, may thus consider all matters of relevant business referred to it by the faculty, as well as by the Dean or other faculty officers. In more specific terms, this committee shall develop policy and make recommendations pertaining to:

   • Procedures and instruments to be used in the evaluation of individual faculty activity by students and faculty peers for the evaluation of petitions for promotion and awarding of contracts.
   • Procedures of grievance concerning academic promotion, and the awarding of long-term contracts.
   • Any other matter it chooses to consider pertaining to faculty welfare.

5. The Faculty Affairs Committee shall also be responsible for the maintenance of the School of Pharmacy Bylaws, and will also advise the Executive Committee of the School on recommended

changes, additions or deletions to the School of Pharmacy Faculty and Staff Policy and Procedures Manual.

6. The Faculty Affairs Committee shall elect its own officers at its initial meeting of the new year and report its minutes, policy and recommendations to the Executive Committee through the Dean.

7. The Faculty Affairs Committee shall serve as the standing committee of the faculty to foster, promote and assess teaching enhancement, advising the Associate/Assistant Dean for Academic Affairs on these matters. Specific activities include, but are not limited to:

   • Plan workshops, speakers, retreats or other structured activities designed to enhance the teaching skills of the general faculty.
   • Foster activities or individuals that will increase the School's endowment, particularly in support of teaching enhancement and recognition.
   • When requested in writing by an individual faculty member, conduct a peer evaluation of the teaching effectiveness of that faculty member. The results may, at the faculty member's discretion, be reported to the faculty member's department chairperson to be included as part of the chairperson's formal evaluation.
   • Conduct a peer review of teaching effectiveness of each faculty member who has requested promotion and/or a long-term contract. The results of this review shall be included in written form in the promotion and/or contract report of the Committee. A copy shall also be delivered in writing to the candidate who may, at his/her discretion, deliver a copy to the department chairperson.

8. To accomplish the work in the several areas of responsibilities, this Committee may be divided into subcommittees under the direction of subcommittee chairs, except any subcommittee assigned the duties of peer review of teaching effectiveness shall have a two third's majority of the members (4 members) holding rank status at least equivalent to the individual faculty member being reviewed.

SECTION B. ACADEMIC AFFAIRS COMMITTEE

1. The membership of the Academic Affairs Committee shall be composed of:

- The Associate/Assistant Dean for Academic Affairs of the School (Ex Officio with a vote), who shall serve as the permanent secretary to the Committee.
- The Associate/Assistant Dean for Student Affairs of the School (Ex Officio without a vote).
- Two members of the faculty from each academic department who are appointed to this committee by the Dean. The representation between departments shall be equal.
- Two professional pharmacy students nominated by the Pharmacy Student Senate.

2. The Academic Affairs Committee shall be responsible for conducting a continuing appraisal and evaluation of the current professional pharmacy program of study, and for the development of recommendations of curricular revision, additions and other alterations to assure optimal student learning and outcomes. To accomplish this essential goal and purpose, this committee shall have both the responsibility and right to:

- Develop and maintain a description of expected student learning and outcomes in terms of the total curriculum and each discrete course within the curriculum. The document shall be written in terms of competencies and published annually in the *Student Handbook*.
- Review the content of individual and collective courses as to the completeness and contemporary nature of the content, and contribution to the breadth, depth and value to the total curriculum, according to the expected competencies of students completing each course.
- Develop and sponsor programs to encourage and reward faculty for innovative teaching, educational research, and for the development of innovative new course offerings or mechanisms to enhance student learning.
- Develop policy and make recommendations to the Executive Committee as required in all matters relating to assessing student progress in achieving the educational outcomes as identified by the faculty of the School of Pharmacy. Such activities shall include, but may be limited to:
- At the beginning of the spring semester each year, conduct assessments of each student's progress towards accomplishing the outcomes defined and delineated for each year.

- In cooperation with the faculty, develop remediation programs for students who do not accomplish the outcomes.
- By April 1 of each year, deliver a confidential report on each student's performance, with recommended action, to the Student Affairs Committee via the Associate/Assistant Dean for Student Affairs.
- By May 1 of each year, deliver a summary report on the students' outcomes to be presented to the faculty.

3. The Curricular Affairs Committee shall report its minutes and recommendations to the Executive Committee through the Associate/ Assistant Dean for Academic Affairs.

SECTION C. STUDENT AFFAIRS COMMITTEE

1. The Student Affairs Committee shall be composed of the following membership:

- The Associate/Assistant Dean for Student Affairs of the School (*ex officio* with a vote) who shall serve as the secretary to the committee.
- The Associate/Assistant Dean for Academic Affairs of the School (*ex officio* without a vote).
- Two members of the faculty in each of the academic departments appointed by the Dean.
- Two professional pharmacy students from each class nominated by the Pharmacy Student Senate.
- Two practicing pharmacists appointed by the Dean who are not paid faculty members of the School of Pharmacy.
- Student and practitioner representatives shall serve for a period of one year.

2. The Student Affairs Committee shall serve as the standing faculty committee to develop policy and to make recommendations pertaining to standards for professional pharmacy student recruitment and admission to the existing program. This Committee shall also establish and recommend standards for the awarding of professional pharmacy student scholarships, awards and prizes, and shall supervise the giving of such.

3. According to the Buckley Amendment to the Federal Higher Education Act, student and practitioner members of this committee shall not have access to student's records, and shall not participate in student grievance and progressions procedures.
4. Student and practitioner members of this committee may participate in interviewing students, submitting written recommendations to the committee, and contributing to nominations for student awards.
5. To accomplish the work in the several areas of student affairs, this committee shall be divided into subcommittees under the direction of subcommittee chairs to consider the natural division of student admissions, academic progressions and the awarding of scholarships and other awards. Faculty from each department shall be equally represented on each subcommittee.

A. The Admissions Subcommittee shall be all members of the Student Affairs Committee. The Associate/Assistant Dean for Student Affairs shall serve as permanent secretary of this subcommittee. This subcommittee shall review all applicants for admissions to the professional programs of the School of Pharmacy, conduct interviews, and make recommendations to the Dean on the admission of students.

B. The Academic Standards Subcommittee shall be comprised of the Associate/Assistant Dean for Student Affairs who shall as permanent secretary of the Subcommittee, Associate/Assistant Dean for Academic Affairs, and two faculty members, one from each academic department. The Subcommittee chair shall be appointed by the Student Affairs Committee chair.

- This committee shall develop policy and make recommendations to the Executive Committee as required in all matters relating to assessing student progress in achieving the educational outcomes as identified by the faculty of the School of Pharmacy. Such activities shall include:

  - Define and delineate student educational outcomes for each year of the professional program, according to the educational outcomes identified by the faculty. These outcomes shall be annually communicated in writing to the students in the *Student Handbook.*

- At the end of the spring semester each year, conduct assessments of each student's progress towards accomplishing the outcomes defined and delineated for each year.
- In cooperation with the faculty, develop remediation programs for students who do not accomplish the outcomes.
- By May 15 of each year, deliver a summary report on the students' outcomes to be presented to the faculty at its spring meeting.
- This Committee shall report its minutes, recommendations and policies to the Executive Committee through the Assistant/Associate Dean for Student Affairs.

C. The Student Awards Subcommittee shall be comprised of two faculty members, one from each academic department. This Subcommittee Chair shall be appointed by the Chair of the Student Affairs Committee. This Subcommittee shall seek nominations and applications for student awards, including School administered scholarships, cash and other awards for achievement, and recommend recipients to the Student Affairs Committee of the whole. The Student Awards Committee shall select students for each award and recommend the recipients to the Dean. The minutes, reports, recommendations and policies of this standing committee shall be reported to the Executive Committee by the Assistant/Associate Dean for Student Affairs.

SECTION D. APPEALS COMMITTEE

1. The School of Pharmacy Appeals Committee shall be composed of the following membership:

   a. Three members appointed by the Dean.
   b. Three members selected by the concerned faculty member.
   c. A person chosen by mutual agreement between the concerned faculty member and the dean.
   d. All members of the committee must be at the rank of Associate Professor or higher.
   e. Service on the Hearing Committee shall be voluntary on the part of the faculty member.

2. The School of Pharmacy Appeals Committee is charged with hearing cases in dispute of dismissal of faculty during the appointment period. The hearing shall be scheduled upon request of the faculty member who has been dismissed and the committee shall function according to the Board of Regents policies and procedures in dismissal cases.

ARTICLE IV: ACADEMIC APPOINTMENTS

SECTION A. FACULTY APPOINTMENTS

Establishing rank and awarding long-term contracts in the School shall conform with policies of the Board of Trustees.

SECTION B. PROMOTION DECISION

The Promotion Decision Process will conform with the policies of the Board of Trustees.

1. Each academic department in the School of Pharmacy will establish the criteria, standards and guidelines to be considered in the promotion decision for faculty members of the department. It shall be the responsibility of the Dean to approve these standards and guidelines and to monitor their application.
2. The Faculty Affairs Committee of the School of Pharmacy shall be the School Committee charged with promotion reviews.
3. The procedure for conduct of peer review of any faculty member for purposes of recommending promotion and for continuance of appointment shall be as follows:

    a. All faculty must undergo an annual peer review.
    b. A faculty member must petition for peer review where promotion is sought. The petition shall be in writing and presented to the Chair of the Faculty Affairs Committee, the Dean, and the Chair of the faculty member's academic department by no later than September 1 of any academic year the faculty member desires to undergo promotion consideration.
    c. The Chair of the Faculty Affairs Committee shall institute the normal procedure to conduct a peer review of the faculty mem-

ber's teaching for subsequent review by the Faculty Affairs Committee in the review of the petitioner.

d. The petitioner, in consultation with either academic department chair, shall develop a dossier of the faculty member's accomplishments, according to the prescribed format as established by the Faculty Affairs Committee. The petitioner may include any other such affidavits or information that the faculty member so chooses to document the faculty member's performance in assigned duties. The complete dossier must be presented to the academic department chair no later than the first Monday in October in the academic year the faculty member desires to be considered for promotion.

e. Once the academic department chair has received the faculty member's complete dossier and any supporting affidavits or information, the academic department chair shall call a meeting of all the faculty in the department for a petition, or all faculty members at a higher academic rank than the petitioner for promotion review. This body will serve as the Departmental Peer Review Committee. The Departmental Peer Review Committee will review the faculty member's performance according to the criteria, standards and guidelines for promotion and continuation in the Department, current at the time the faculty member petitions for peer review, including any other relevant information submitted by the petitioner. The Department Peer Review Committee will vote anonymously on the petition. Neither the chair of the department nor the Dean of the School shall participate in the Departmental Peer Review Committee deliberations and vote. Only those votes that contain a justification for the vote shall be recorded. The tally of votes, and the justifications shall be transcribed to maintain confidentiality and appended to the petitioner's dossier by the academic department chair. The Departmental review shall be completed by the first Monday following October 15.

f. Once the results of the Departmental Committee Review has been completed, the academic department chair shall write a recommendation for promotion and or continuation with justification. The academic department chair shall solicit external peer reviews of the petitioner requesting promotion's dossier. The written recommendation and all external peer reviews and the petitioner's dossier and all affidavits and information given by the faculty member shall be presented to the chair of the

Faculty Affairs Committee no later than the first Monday following November 15 of the academic year the faculty member petitions for promotion review.

g. Once the Chair of the Faculty Affairs Committee has received the faculty member's dossier, supporting affidavits and information, and the academic Chair's recommendation, including external peer reviewers' comments, the Chair of the Faculty Affairs Committee, shall call a meeting of the Faculty Affairs Committee to review the dossier and all additional information according to the standards and guidelines for promotion and continuation of the academic department the faculty member holds a majority appointment, current at the time the faculty member petitioned for promotion. The Committee may, at its discretion, solicit external peer reviews of the faculty member's dossier and all appended affidavits and information, excluding the Academic Chair's recommendations and departmental vote, to assist in its deliberations. The Committee shall append a written recommendation with justification to the dossier and present the complete dossier along with all appended affidavits and information to the Dean of the School no later than the second Monday of February in the academic year the faculty member petitions for promotion.

h. The Dean shall review the dossier and all appended affidavits, information, and recommendations according to the standards and guidelines for promotion and continuation current at the time the faculty member petitioned for peer review. The Dean may, at his/her discretion, solicit external peer reviews of the faculty member's dossier, including affidavits and information appended by the petitioner, but shall not include any recommendations given at prior stages of the review. The Dean shall append a written recommendation with justification to the dossier and present the complete dossier along with all appended affidavits, information, recommendations and external reviews to the Vice President for Academic Affairs according to the University prescribed time-table. The Dean shall present a verbal summation of the recommendation to the petitioner, maintaining confidentiality of the identity of any person's recommendation.

i. The identity of all internal and external peer reviewers shall be held confidential. The petitioner shall have access to the con-

tent of the reviews with all information that could identify the reviewer obliterated.

ARTICLE V: RATIFICATION

These Bylaws shall become effective upon approval by vote of 2/3 (two-thirds) of the faculty of the School of Pharmacy.

APPENDIX 14

The Shenandoah University School of Pharmacy

Conflict of Interest Policy

General:

Faculty participation in outside professional and commercial activities can make important direct and indirect contributions to the strength and vitality of the School. Through participation in such activities, faculty members may add to knowledge and understanding that is relevant and useful to teaching and research within the School, develop sources of funding and support for activities carried out in the School, and establish relationships valuable to the School. Because of its value to the School, its rewards for individual faculty, and its contributions to the larger society of which the School is a part, the School recognizes that limited participation of its faculty in outside professional and commercial activities can be appropriate. It must be realized, also, that the pursuit of such goals can lead to either conflicts of commitment or interest to the School.

Definitions:

Conflict of Commitment

The term "conflict of commitment" relates to an individual faculty member's distribution of effort between obligations to an academic appointment (normally "full-time" in teaching, research, and/or patient care) and a commitment to outside activities. The latter may include professionally-related and generally encouraged activities such as consulting, textbook authorship, involvement with professional societies,

and participation in review panels. Such activities are usually expected of faculty members to promote professional development and to enrich their contributions to the institution, their profession, and the community. Consulting relationships, for example, may serve to create conduits for the exchange of information and technologies that enhance the university environment and permit faculty to test the soundness of their ideas.

A conflict of commitment arises when these or professionally removed activities (e.g., outside teaching or business) come to interfere with the paramount obligations to students, colleagues, and the primary missions of the academic institution by which faculty are appointed and salaried. Conflicts of commitment primarily involve questions of obligation and effort, but are often tied to financial inducements. Such conflicts do not generally pose specific legal violations, but they may constitute abridgments or compromises of institutional policy or the responsibilities attendant with retention of academic appointment. Accordingly, outside activities relating to the professional roles for which faculty are employed by the School must generally be disclosed to the department chair and Dean unless they are of an incidental, infrequent, or minimal nature.

Written approval must be obtained from the department chair and Dean in advance of outside employment and disclosed annually.

With an acceptance of a full-time appointment to the School faculty, an individual makes a commitment to the School which is full-time in the most inclusive sense. However, the institution currently applies the generally accepted academic standard that affords faculty *up to one day per work week* for scholarly pursuits that relate to and advance professional growth and public service.

Conflict of Interest

A conflict of interest is defined for the purpose of this document as a divergence of an individual's private interests as compared to his or her professional obligation to the School. Under these conditions, an unbiased observer would find it difficult to determine whether the individual's professional actions or deeds are determined by personal con-

siderations of financial gain or otherwise not purely in the best interest of the School.

Issues of Concern

Involvement with, or financial interest in, professional or commercial activities outside of the School should not compromise the fulfillment of a faculty member's obligations to the School. Such outside activities conflict with obligations to the School when they involve excessive commitments of time, when they bias the nature and direction of scholarly research, or when they influence a faculty member's decision or behavior with respect to teaching and student affairs, appointments and promotions of faculty, or other matters of interest to the School. Sensitivity to these potential conflicts of interest is especially important when a faculty member has a substantial involvement in commercial enterprises related to that faculty member's research or when the faculty member is engaged in prolonged and intensive consultancies because personal financial benefits can present or can appear to present stronger attraction than other benefits associated with either professional or commercial outside activities.

Potential problems arising from conflicts between a faculty member's obligations to the School and outside professional and commercial activities are numerous and sometimes subtle. An awareness of such potential difficulties is essential to sustaining the vital interests and fundamental principles of the School, and to reserving the benefits that accrue from faculty participation in outside professional and commercial activities. Among the specific issues and problems requiring particular sensitivity and attention are the following:

1. Decisions concerning the nature and direction of scholarly research at the School should be governed by judgments of scholarly merit and intellectual importance. A faculty member's involvement with, or interest in, outside commercial or professional applications of research should not bias judgment concerning the faculty member's own scholarly research or that of other faculty or students.
2. Free communication of the results of scholarly research is an important and long standing tenet of the university. Involvement in outside professional or commercial activities should not delay or

inhibit the publication of scholarly research or the sharing of information derived from such research.

3. Students rely on faculty advice and guidance concerning educational matters within the School (including the nature and direction of research) as well as temporary and career employment opportune ties outside the School. Such advice and guidance should always be governed by a student's best interest and should not be made to serve a faculty member's interest in outside commercial and professional activities.

4. Dedicated participation of faculty in recommendations and decisions concerning faculty appointments and promotions is vital to the continued strength of the School. A faculty member's recommendations and decisions on matters of appointment and promotion should never be used to advance an actual or prospective relationship in outside commercial or professional activities (either cooperate or competitive) with candidates for appointment or promotion.

5. A faculty member's contribution to the School derives not only from formal classroom teaching and scholarly research, but also from less formal interactions with colleagues and students, and from participation in the affairs of the faculty member's department and of the School. To sustain the contribution consistent with a faculty member's obligation to the School, time committed to outside professional and commercial activities should not exceed the accepted standard for such activities unless the faculty allows for the Professional Practice Plan to collect fees for such activities.

6. It is important to recognize the intellectual contributions and properties of the faculty as well as that of the School. The sale or marketing of products that result from the faculty/School relationship must comply with the following guidelines.

Guidelines:

1. With an acceptance of a full-time appointment to the School faculty, an individual makes a commitment to the School which is full-time in the most inclusive sense. However, the institution currently applies the *generally accepted academic standard that affords faculty up to one day per work week* for scholarly pursuits that relate to and advance professional growth and public service.

2. When a faculty member's involvement in outside professional or commercial activities substantially impairs fulfillment of obligations to the School, an involved faculty member should take a leave of absence from the School. Except in extraordinary circumstances, the frequency and duration of leaves of absence should not be such as to impair a faculty member's contribution to the School. To protect the School from the adverse consequences of leaves of absence, it may be appropriate for the Dean to deny some requests for leave and insist that some involvement in outside professional and commercial activities be postponed, reduced or terminated.

3. When involvement is not of an extent or nature that substantially impairs fulfillment of obligations to the School, but when the time committed to outside professional or commercial activities exceeds the accepted standard for such activities, a faculty member should, through consultation with the appropriate Chair and the Dean, arrange with the Associate Dean for Academic Affairs for the Professional Practice Plan to bill for such services. To protect the School from the undesirable consequences of part time faculty, arrangements for part time status to accommodate outside professional and commercial activities should normally be of limited duration, and requests for such arrangements may sometimes be denied in order to protect the School's vital interests.

4. To maintain the effectiveness and the integrity of the process for considering faculty appointments and promotions, faculty members should avoid, to the greatest extent possible, involvement in outside professional or commercial activities that might give rise to conflicts of interest in recommendations and decisions concerning faculty appointments and promotions. When conflicts arise with a particular appointment or promotion, the faculty member who has a conflict should avoid participation in the consideration of that case.

5. To insure that the nature and direction of research conducted by students in connection with earning their degrees at the School is governed by considerations of scholarly merit and intellectual importance and that the efforts of students in such research always serve the student's best interest, a faculty member should normally avoid situations where a student's degree oriented research becomes entangled with the faculty member's outside professional or commercial activities. This guideline does not

preclude the temporary or part time employment of students in outside research or consulting activities with which a faculty member is associated, provided that such employment serves the best interest of the student, and does not substantially impede the student's progress toward a degree and does not restrict students' communication with each other or their right to publish their work.

6. School facilities should not be used for activities outside the scope of a faculty member's academic responsibility if those activities are conducted primarily for the financial benefit of the faculty member or for the benefit of a company or enterprise with which the faculty member is associated. All sponsored research carried out using School facilities should be conducted under a grant or contract agreed to and administered by the School. The faculty member shall disclose any personal interest he or she has in an entity which provides him or her support through a grant or contract administered by the School. Faculty members shall not hire people to work in School buildings in the service of their outside professional or commercial activities.

7. Materials developed by the faculty member during the normal performance of activities (e.g., curriculum delivery) are considered the property of the institution. The School reserves the right of first refusal of publication for such materials in fulfilling its mission. For example, lectures for traditionally educated students may be telecommunicated or videotaped by the School and used for non-traditional educational programs without expressed added compensation to the faculty member. On the other hand, the faculty member may wish to repackage lecture materials for the development of a book, learning aide, or other published work for compensation. The School in this latter case may or may not wish to exercise its rights to publish the materials.

8. Participation in the activities of an outside commercial enterprise, including a faculty owned or faculty-managed company, does not excuse a faculty member from the normal patent requirements and procedures for disclosing discoveries and inventions, which occur at the School.

9. The diversity of faculty involvement in outside professional and commercial activities implies that practices and policies to protect the School from adverse consequences of such involvement need to be formulated on a case by case basis. Faculty members who have or expect to develop a significant and continuing involvement in outside professional or commercial activities

should consult with the appropriate chair and Dean whenever such involvement potentially impairs the fulfillment of that faculty member's obligations to the School.

10. Because of the special role that chairs of departments and deans play in administering the affairs of the School, it is especially important that faculty members serving in these administrative positions avoid involvement in outside professional or commercial activities that pose potential conflicts of interest with the fulfillment of their responsibilities to the School. The necessary involvement of these administrative officials in the appointment and promotion process, in decisions concerning students, and in the supervision of other faculty requires that they be specially sensitive to potential conflicts of interest and that they uphold a particularly rigorous standard for avoiding such conflicts.

11. Funds generated as a result of professional activities within the scope of this document will be managed and distributed under the auspices of the Professional Practice Plan of the School of Pharmacy.

Activities That Are Encouraged and Need Not Be Disclosed Nor Billed by the Professional Practice Plan:

1. Receipt of royalties for published scholarly works and other writings that are not directly a product of curriculum delivery.

2. Acceptance of honoraria for papers, occasional lectures, and seminars as long as the honoraria are not excessive and are sponsored by public or non-profit entities.

3. Receipt of profits on a royalty-sharing basis under the policies as set forth by the School Professional Practice Plan.

4. Income from service on advisory committees or review panels for public or nonprofit entities.

5. Financial interests in business enterprises or entities by an investigator and the investigator's spouse and dependent children, unless the enterprise is to make gifts, sponsor projects, license technology, or procurements from the School which directly involve the investigator; "arms length" financial interests through participation in mutual funds or retirement plans.

Annual Disclosure of Conflict of Interest:

Conflict of interest disclosure forms must be completed annually by all School faculty members, and any cases of potential conflicts of interest which arise between reporting periods must be disclosed promptly in

writing to the cognizant departmental chairperson, or, in case of a chairperson, to the Dean, using a Conflict of Interest Disclosure Form. Any significant financial interest in a commercial company directly or indirectly related to one's professional activity by an investigator, his or her spouse or dependent children, particularly if that entity plans to make gifts, sponsor projects, license technology, or procurements from the School, which will involve the investigator, must be disclosed. In addition, all substantive gifts (greater than $1,000) must also be disclosed at the time of receipt and total gifts from one commercial source in any reporting year cannot exceed a value of $5,000. Updated Conflict of Interest Forms must be submitted when changes arise that the faculty member believes may either give rise to a conflict of interest or eliminate a previously disclosed conflict of interest. The departmental chairperson should review the forms and the chairperson's comments are then forwarded to the Dean who reviews them and makes a determination in writing of the propriety or impropriety of the disclosed activity or interest. If in the Dean's opinion a conflict exists, the Dean will ask the Advisory Board of the Professional Practice Plan to make a final determination of whether such conflict of interest is present.

The Shenandoah University School of Pharmacy Professional Practice Plan (PPP)

Intent:

The Professional Practice Plan of the Shenandoah University School of Pharmacy is intended to generate funds for the development of School faculty.

Membership:

All full-time faculty of the School of Pharmacy are included as members for participation within the plan. Members of the faculty practice plan agree to accept the terms of the PPP and assign to the PPP all appropriate clinical practice and other professional income, as that term is limited and defined above and below, during the entire term of this agreement including vacation, for billing, collection, administration, and distribution in accordance with the PPP *guidelines*.

Governance:

The PPP is governed by an advisory board which is elected annually by the membership. The Advisory Board will meet monthly to review peti-

tions of conflict of interest, discuss plan activities and make recommendations to the Associate Dean for distribution of funds. The Associate Dean will be responsible for calling appropriate meetings for establishment of the PPP governance.

Guidelines:

- Agreement is applicable to all clinical practice and other professional income of members of the PPP, regardless of where services are performed, to include, by way of example and not by way of limitation, the following:

    - Fees from patients, clinics, hospitals, service laboratories, state agencies or other institutions for professional or teaching services. Patient fees will be billed and collected by the PPP.
    - Consultant fees and retainers for professional or research services to commercial companies or corporations on a regular or contract basis. All such fees must be billed and collected by the PPP.
    - Fees for medical/legal work, including expert witness fees. All such fees must be billed and collected by the PPP.

- The following fees are excluded and need not be assigned to the PPP:

    - Honoraria for visiting lectures and other occasional professional consultations that are not subject to any regular contract, whether or not officially sponsored by the University. Absence from the University for all such lectureships consultations shall be subject to University rules and regulations.
    - Royalties/other income from publications, editorial services, audiovisual materials, software, patents, and profits from the reproduction, sale distribution, or lease of specialized instruments and prizes recognizing meritorious accomplishments, provided that the member has complied with the University regulations governing patents and copyrights. The School will retain the right of first refusal of publication of materials that result directly from curriculum delivery.

- Where any question arises as to the propriety of an honorarium or other income being retained, it shall be decided by the Dean of the School of Pharmacy in consultation with the PPP Advisory Board.

- The PPP agrees to provide for the billing and collection of professional income and to administer and distribute all fees in accordance with developed rules and regulations.
- The PPP funds will be managed by the Associate Dean for Academic Affairs and will be totally, less the expenses incurred for billing, used for faculty development.
- In case of termination of this Agreement, the member waives all rights to any further payments from the PPP after the date of termination. The obligations of the member to the PPP shall also terminate.
- The member recognizes he/she is acting as an agent of the School when participating in approved programs of the Pharmacy program and shall be covered by PPP obtained malpractice insurance program.
- This agreement shall be effective on the date signed and shall continue until member ceases to be eligible for membership. Failure to comply with the PPP rules shall cause the member to be ineligible for membership and shall immediately terminate this agreement.