Teaching and Learning Curricular Track—
Trends and Innovations in Pharmacy Student and Resident Education

Activity No. 0217-0000-10-049-L04-P
This is an application-based activity.

Curricular Tracks in Pharmacy Education

8:00 a.m.–10:00 a.m.
Convention Center: 213 A

Moderator: Michael L. Bentley, Pharm.D., FCCM
Investigational Drug and Clinical Pharmacy Specialist, Carilion Clinic, Department of Pharmacy, Roanoke, Virginia

8:00 a.m. Curricular Track Development in Student Education: A Case-Based Approach to Application
Leslie Wilson, Ph.D.
Associate Adjunct Professor, Department of Medicine, Department of Clinical Pharmacy, University of California San Francisco, San Francisco, California

8:45 a.m. Curricular Track Development in Resident Education: A Case-Based Approach to Application
Jean M. Nappi, Pharm.D., FCCP, BCPS
Professor of Clinical Pharmacy and Outcome Sciences, South Carolina College of Pharmacy-MUSC Campus, Charleston, South Carolina

9:30 a.m. Panel Discussion on Track Development

Faculty Conflict of Interest Disclosures

Jean M. Nappi: no conflicts to disclose.
Leslie Wilson: no conflicts to disclose.

Learning Objectives

1. Describe approaches to the developing and implementation of tracks in student education.
2. Discuss limitations and practical solutions for offering tracks in a busy pharmacy curriculum.
3. List considerations for site and faculty development.
4. Describe approaches to the developing and implementation of tracks in resident education.
5. Discuss limitations and practical solutions for offering tracks in a busy residency program.
6. List considerations for site and faculty development.

Self-Assessment Questions

Self-assessment questions are available online at www.accp.com/sf
Learning Objectives

- By the end of the presentation the participant will be able to:
  - Describe the components of a typical "teaching portfolio"
  - Compare and contrast the different types of faculty positions available to residents following completion of their program
  - Understand the factors contributing to faculty shortages

General Information

- There are over 3000 full time pharmacy faculty in the USA
- Their roles/responsibilities:
  - Teaching
  - Scholarship
  - University and Public service
  - Practice/Patient care

Pharmacy Faculty Shortage

- AACP task force report (June 2007):
  - Over the next 10 years demand for faculty will increase by 20%
  - 422 positions from retirement
  - 400 new positions
  - Current vacancy rate ~10% (400 positions)

Reasons for Faculty Shortages

1. Increased number of pharmacy schools (and increased class size in current programs)

2. Lack of competitive salaries offered by colleges
   - The average starting salary for an assistant professor in COP in 2006-2007 was $82,700
   - Average starting salary for a newly graduated Pharm.D. entering the non-academic workforce was ~ $94,000.
Reasons for Faculty Shortages

(3) Brain Drain
- Faculty are being recruited for higher paying jobs in clinical practice and positions in the pharmaceutical industry

(4) Gender Issues
- Continue to see lower salaries for females in academia
- Female graduates attracted to positions offering part-time work

Purpose

The purpose of the Academician Preparation Program (APP) is to generate interest in academic careers

Background

- Teaching and research activities were required components of the Medical University of South Carolina (MUSC) residency program.
  - Didactic lectures
    - ACPE Seminar (PGY1 and PGY2)
    - RITE (PGY1 and PGY2)
  - One hour additional lecture (PGY2)
  - Help precept pharmacy students
  - Required to evaluate pharmacy student oral presentations
  - Write a manuscript suitable for publication
  - Platform presentation (10 min) of project

Methods

- After reviewing the MUSC residency requirements and descriptions of other teaching certificate programs, specific goals and objectives for the APP were created.
  - University of Florida
  - University of Kentucky
  - University of Minnesota
  - Ohio State
  - and more.....

South Carolina College of Pharmacy
"Academician Preparation Program"

- Designed to help residents who wish to serve as educators.
- Provide structured opportunity to develop both teaching and scholarship during the resident's training period.
  - (a) seminars designed to provide the participants with formal training in development, delivery and assessment of pharmacy education via didactic lectures and small group discussions
  - (b) required experiences in precepting, teaching and evaluating students
  - (c) preparation of a teaching portfolio.

Requirements for APP Certificate

<table>
<thead>
<tr>
<th>Required Activity</th>
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<tbody>
<tr>
<td>Meet quarterly with faculty mentor</td>
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<tr>
<td>Attend 80% Academic Preparation Seminars</td>
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<tr>
<td>Three hours of didactic lectures 1 hour must utilize active learning methods (write exam questions for each)</td>
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<tr>
<td>Seminar, RITE didactic courses</td>
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<tr>
<td>Small group facilitation x 3</td>
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<tr>
<td>Precept/evaluate pharmacy student on rotation x 2</td>
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### Requirements for APP Certificate

<table>
<thead>
<tr>
<th>Pharmacy Grand Rounds, Journal Club, etc</th>
<th>Evaluate pharmacy student oral presentations and provide written feedback x 5</th>
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<tbody>
<tr>
<td>Prepare a manuscript suitable for peer review/publication</td>
<td>Prepare an abstract suitable for submission to a professional meeting</td>
</tr>
<tr>
<td>Develop a teaching portfolio/self evaluation</td>
<td>APP</td>
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</table>

- Each resident is assigned a mentor
- Full-time academician
- In their area of interest when possible

### Seminar Series

- One-half day in July: residents meet in Charleston or Columbia
- Introduction to APP/academia
- Professionalism/Impaired Students
- Preparing/Giving a Lecture
- Small Group Facilitation
- Opportunities at SCCP

### Intro to Academia: Faculty Types

- The Tracks
  - Tenure track (higher research/funding expectations)
    - "publish or perish"
    - "up or out"
  - Non-tenure track (higher teaching loads)
  - Modified (adjunct, voluntary, research)

### Common Characteristics (across the disciplines)

- Teach pharmacy students
- Most engage in scholarship
- Most are expected to publish their work in peer reviewed publications
- All participate in service activities
  - Service to the college/university
  - It is assumed that all are experts in their fields

### Differences (across the disciplines)

- Type and length of education and training required
- Practice responsibilities
- Types of students/trainees
  - Pharm.D.
  - Ph.D.
  - Fellows/residents
- Type and amount of scholarship needed for promotion
- Teaching setting(s)
  - Classroom
  - Laboratory
  - Direct patient care area
The Scholarship Expectation

- Faculties in colleges of pharmacy share the responsibility for the advancement of knowledge and the benefit of mankind
- "A precept of the academician's role and the foundation upon which all academic endeavors are based."
- AJPE 2003;67:1-18
- Scholarship may be broadly defined.

Perceived Negatives of Academic Pharmacy

- Long hours (>40/week)
- Poor pay (comparatively)
- Need for additional education/training
- And therefore, lag time to receiving poor pay
- Dependence on mentoring system
- Teaching and Scholarship
- Academic health sciences are populated by lots of over-inflated and, therefore, fragile egos

Positives of An Academic Career

- There is no other role within our profession that has the potential for such far-reaching effects on the profession
- Preparing the practitioners of tomorrow is your job
- Advancing knowledge about the profession, and healthcare, is part of your job
- Opportunities for collaboration
  - With other academics
  - With practitioners
  - A defined career ladder with financial remuneration
- Assistant Professor
- Associate Professor
- Full Professor

Positives of An Academic Career

- Can also pursue administrative positions
  - Chair, Dean
  - Freedom...
- To be creative and pursue self-identified interests
- Opportunities for outside income
  - Consulting
  - Advisory boards
  - CE programs
  - Writing
- Good fringe benefits
  - Support for development
  - Leadership within organizations and professional meetings encouraged

Seminar Series

- Professionalism/Handling Impaired Students
  - Explain why proper medical terminology matters
  - Discuss various psychiatric and behavioral situations that may arise with students
  - Describe the key components of a Recovering Professionals Program
  - Discuss appropriate actions given various scenarios with students or co-workers
  - Provide information on psychiatric resources at MUSC, in the Charleston area and upstate

Seminar Series

- Preparing and Giving a Lecture
  - Identify a few important concepts
  - Understand where the lecture fits in the curriculum
  - Developing learning objectives
  - Handout development
  - Encouraging interaction
  - Pitfalls
  - Trying to cover too much information
  - Failing to give good examples
  - Poor delivery
  - Evaluation tool
Lecture Evaluation Tool

<table>
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<tr>
<th>Domain 1: Learning objectives</th>
<th>1</th>
<th>2</th>
<th>3</th>
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<tbody>
<tr>
<td>The objectives are:</td>
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<td></td>
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<tr>
<td>_____ Appropriate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>_____ Clearly stated</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>_____ Achievable by students</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>_____ Measurable</td>
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Domain 2: Organization
The classroom instructor:
_____ Previews lecture content and states the objectives to students at the beginning of the lesson
_____ Effectively organizes his/her presentation
_____ Provides transitions during the lesson to facilitate student learning (i.e., the presentation follows a logical sequence)

Seminar Series
- Small Group Facilitation/ Giving Feedback
  - Skits with different scenarios
    - Act 1: Example of teaching not facilitating
    - Act 2: Example of 1 student dominating
    - Act 3: Example of ignoring students who are not participating
    - Act 4: Correcting an incorrect response and embarrassing the student
    - Act 5: The belligerent student
    - Act 6: Using faculty opinion instead of the literature, belittling
  - Faculty role-play facilitators and students

APP Small Group Facilitation Evaluation
Interaction and Rapport with students
The facilitator:
_____ Stimulates student questions and involvement, and solicits feedback
_____ Answers student questions clearly and responds to wrong answers constructively
_____ Respects diverse points of view and allows relevant student discussion
_____ Praises students for contribution that deserve commendation
_____ Treats group members equitably
_____ Recognizes when students do not understand
_____ Is able to admit errors and/or insufficient knowledge if necessary

Seminar Series
- Opportunities for Teaching and Evaluating
  - Provide curriculum of the Doctor of Pharmacy Program
  - Provide syllabus of all our courses
  - Brief description of activities
  - Clinical Assessment Class:
    - Weekly opportunities for clinical assessment lab (small group sessions and evaluations) on Wednesday, Thursday and Friday of Spring Semester from 8-11am. Combination of application of clinical skills, patient counseling skills including OSCEs and simulation lab, and physical assessment. *Contact Cynthia Phillips

Seminar Series: August through November
- Classroom Assessment Techniques
- Constructing Exams
- Question Writing Workshop
- Active Learning Techniques
- Designing a course
- Designing a rotation/Precepting Students
- Interviewing for an Academic Position
- Pharmacy Education: Present & Future
Classroom Assessment Techniques

- Describe the purpose of Classroom Assessment Techniques (CATs)
- Identify several CATs used by faculty
  - Assessing recall
  - Assessing understanding
  - One minute paper
  - Muddiest point
  - “Capture” a CAT for future application
  - Identify opportunities to conduct research using CATs

Constructing exams

- Types of exams
  - Readiness prior to instruction
  - Achievement
  - Performance of skills
- Tests that measure understanding and application not just knowledge
- Types of questions
  - Assembling exams
  - Evaluating item performance
  - General “rules” for multiple choice questions

Item writing workshop

- Residents send exam questions
- Review them and edit/improve them
- Encourage “PSAP model” for multiple choice questions
- Throughout the year residents send questions to me in addition to their preceptor for comment prior to submission to course coordinator.

1. What is the BEST treatment for a patient with uncomplicated essential hypertension?
A. Begin therapy with furosemide 20 mg BID
B. Therapeutic lifestyle changes (TLC) including weight loss, DASH diet, sodium restriction
C. Begin therapy with clonidine 0.1 mg BID
D. Begin therapy with HCTZ 50 mg daily, lisinopril 40 mg daily

How can we improve this question?

Make it more specific

According to JNC VII, what is the BEST treatment for a patient with uncomplicated essential hypertension?
A. Begin therapy with furosemide 20 mg BID
B. Therapeutic lifestyle changes (TLC) including weight loss, DASH diet, sodium restriction
C. Begin therapy with clonidine 0.1 mg BID
D. Begin therapy with HCTZ 50 mg daily, lisinopril 40 mg daily

How can we improve this question?

Make the domain at the application level
BG, a 38 y.o. WM is in clinic for an annual physical. The patient states his blood pressure over the past few months has ranged from 135-150 mmHg systolic and 80-92 mmHg diastolic. His vitals today are as follows: BP: 152/90, P: 80, weight: 200 lb, height: 6’. He has no other significant past medical history and does not currently take any medication. The medical resident asks you if treatment should be initiated today. According to JNC VII, what is the BEST recommendation for initial treatment for this patient?
A. Begin therapy with furosemide 20 mg BID
B. Therapeutic lifestyle changes (TLC) including weight loss, DASH diet, sodium restriction
C. Begin therapy with clonidine 0.1 mg BID
D. Begin therapy with HCTZ 50 mg daily, lisinopril 40 mg daily

How can we improve this question?
How can we improve this question?

Make it more difficult with more plausible foils

A. Begin therapy with HCTZ 25 mg qd
B. Therapeutic lifestyle changes (TLC) including weight loss, DASH diet, sodium restriction
C. Begin therapy with lisinopril 10 mg qd
D. Begin therapy with HCTZ 12.5 mg daily, lisinopril 10 mg daily

Active learning techniques

- Learn strategies for actively engaging students
- Learn some of the research about why to use these strategies
- Understand how to effectively apply these strategies

Designing a course

- Designing a didactic course
  - Panel discussion
  - Faculty discuss how/why they have developed courses
- Designing an experiential course
  - Precepting students
  - Activities/responsibilities

Seminar Series

- Interviewing for an academic position
  - Doing your homework
  - Questions to ask
  - Questions to expect
  - Documents to request
  - Things to negotiate
    - Protected time
  - Pharmacy Education: Present and Future

Things to do

- Use your list of requirements and mentor check off sheet as the table of contents

Portfolio

- Self Assessment
  - At the beginning of the year-
    - Reflect on what you would like to achieve in this program
  - At the end of the program-
    - Evaluate what you accomplished
    - Assess whether your feelings about education or a career in academia have changed
**Portfolio**

- Bring your portfolio to every quarterly meeting with your mentor
- End of September
- First week in January
- Last week in March
- Last meeting prior to June 4th

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**Portfolio**

- Lectures
  - Handout
  - Test questions
  - Evaluation from a mentor
  - Note of what you might do differently next time
- Small Group Facilitation
  - Date and name of your group (ie; student case presentations)
  - Mentor’s evaluation of resident as a facilitator
- Evaluations of Student Presentations
  - Evaluation of student presentations x 5
  - Midpoint and final evaluation of monthly rotation x 2

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**Results of APP**

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<tr>
<th>Year</th>
<th># enrolled</th>
<th># completed</th>
<th># faculty</th>
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<tbody>
<tr>
<td>05-06 MUSC</td>
<td>13</td>
<td>13</td>
<td>5</td>
</tr>
<tr>
<td>06-07 Add CHS VA</td>
<td>17</td>
<td>10 (4 continue)</td>
<td>3</td>
</tr>
<tr>
<td>07-08 Add 3 prgrms</td>
<td>29</td>
<td>18 (8 continue)</td>
<td>0</td>
</tr>
<tr>
<td>08-09 Add 1 program</td>
<td>39</td>
<td>25 (8 continue)</td>
<td>2</td>
</tr>
<tr>
<td>09-10</td>
<td>41</td>
<td></td>
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Some residents take 2 years to complete all requirements.

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**Key Components**

- Mentors for APP are full-time faculty from the Department of Clinical Pharmacy & Outcome Sciences.
- Mentors evaluate the lectures, small group facilitations, abstract, manuscript, and portfolio contents.

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**Conclusions**

- Residents are interested in the APP, even though they do not intend to pursue a full-time faculty position.
- Colleges of Pharmacy in conjunction with residency programs must do more to attract and keep practice-based faculty in academia.