UNC School of Pharmacy: Focus on The Role of Clinical Faculty at the UNC School of Pharmacy

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UNC School of Pharmacy and UNC Hospitals
Objectives

1. Discuss the scope of activities of faculty
2. Describe the relationship between the University Hospital and the School of Pharmacy
3. Describe the role of external faculty and preceptors for the School of Pharmacy
4. Review the education and evaluation of pharmacy students
UNC School of Pharmacy

- On the University Campus in Chapel Hill
- Other Health Affairs schools include medicine, nursing, dental, public health, and social work
- Pharmacy school enrollment is 130 students in each class (4 classes)
University Faculty

- 60 faculty members based in School of Pharmacy
- Support staff of 45 people
- 85% of faculty have pharmacy training
- 85% of salary support for faculty comes from State government
- 8 to 10 faculty members are clinical faculty with practice responsibilities
School of Pharmacy Budget

- School budget (not including research) is $14.5 Million annually.
- 64% of this is for faculty and staff salary.
- Another $1.2 Million is provided for training Post-Docs and graduate students.
- An additional $10 Million is generated by faculty research grants.
- There are an additional 15 Research Track Faculty supported by grants (do not teach in the professional program)
University Faculty
Divisions in the School of Pharmacy

- Medicinal Chemistry and Natural Products
- Molecular Pharmaceutics (includes drug delivery)
- Pharmacotherapy and Experimental Therapeutics
- Pharmaceutical Policy and Outcomes
University Faculty: Research Areas

- Drug discovery
- Preclinical and clinical development of therapeutic agents
- Optimal and innovative delivery of drug therapy
- Evaluation of health and therapeutic outcomes from drug therapy
UNC School of Pharmacy
Growth in Research Funding

Federal govt.
Other sources
Total
New Research Programs
The Center for Chemical Biology and Drug Discovery

• Bridge the “translational” gap between fundamental research and the commercialization of new drugs through collaborative research relationships in biology, pharmacology, chemistry, and computer science.

• Conduct experimental and theoretical research to translate basic scientific discoveries of potential drug leads and biological targets into validated clinical drug candidates.
New Research Programs
The Center for Pharmaceutical Outcomes and Policy

• Chronic disease management, medication therapy management, and pharmaceutical services research
• Adherence, safety, and cost-effectiveness of pharmacy practice and drug products
New Research Programs

The Center for Experimental Therapeutics

- Analytical, transport, and quantitative pharmacology; drug metabolism; and pharmacokinetics and pharmacodynamics
- Support the Clinical Trials Study Center and Phase I clinical trials at Lineberger Comprehensive Cancer Center
New Research Programs
The UNC Institute for Pharmacogenomics and Individualized Therapy

- Represents a major step forward in developing the premier translational research program in the country
- Initial efforts will focus on cancer therapy with planned expansion into cardiovascular disease, psychiatric disorders, and global health.
Research Focus of Clinical Faculty in Pharmacotherapy and Experimental Therapeutics

- Evaluation of drug efficacy and safety
- Drug interactions
- Exploring variability in patient response and risks of adverse effects
- Strategies for improving patient adherence
- Value of the presence of pharmacists on clinical care rounds
- Evaluating the benefit of interventions and services offered by pharmacists
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<tr>
<th>Rank</th>
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Graduate Program: Growth in Enrollment

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<th>Year</th>
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<td>2006</td>
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University Hospital at UNC: Support Provided to SOP

- UNC Hospitals is a 708 bed tertiary care hospital
- The Pharmacy employs 200 people (90 pharmacists and 110 technicians)
- University Hospital provides 100 student clerkship months per year
- Several clinical pharmacists provide lectures in the School of Pharmacy
Clinical Pharmacists at University Hospitals (UNC Hospitals): 3 categories

- Paid by the Hospital (23)
- Paid by the School of Pharmacy but based in the Hospital (4)
- Faculty in the School of Pharmacy who contribute to pharmacy services in the hospital (6 to 8)
University Hospital at UNC: Support Received from SOP

- SOP pays salary for 4 pharmacists who are based in the hospital.
- SOP supports part of 5 specialty residency training programs in the hospital ($120,000). These pharmacy residents:
  - Work with school based faculty part of the time
  - Provide teaching support for students in the SOP skills training laboratory
University Hospital at UNC: Support Received from SOP

• School of Pharmacy faculty provide clinical services for hospital patients for 30-40 student months each year (6 faculty have practices at UNC Hospitals)

• School of Pharmacy faculty person manages pharmacy residency program for UNC Hospital
External Faculty
(Partial Support from School of Pharmacy and University)

- A total of 28 fully funded pharmacist positions are based in various institutions across the state.
- Some funds come from the School of Pharmacy; some from the University
- We pay 25%-100% of salary depending on the contract
External Faculty

- These pharmacists have a faculty appointment with UNC School of Pharmacy but primarily work at the hospital (or pharmacy).
- Their contract states that they will take 6 to 18 students a month for clerkship depending on how much the school pays.
- The School of Pharmacy can improve practice in these hospitals by providing funding for these faculty members.
Preceptors

• The School of Pharmacy has 500 pharmacist preceptors across the state where students do clerkships.
• These preceptors are volunteers (and have no appointment with the School).
• Preceptors receive $450 for each month that they have a student.
• The school offers them recognition and preceptor training in how to teach students.
Faculty and Preceptor Development

- Competitive sabbaticals (time and support) are offered for faculty to learn and develop new skills
- A seed grant money program is available from the University
- Training seminars are conducted for faculty and volunteer preceptors for skill development in teaching and precepting
- Formal and informal group discussions are held for faculty with similar interests in teaching and research
Entry-level PharmD Program at UNC: Class of 2007

- 607 applicants / 267 interviews / 120 admitted
  - 31% male
  - 86% Caucasian
  - 18% out-of-state (outside North Carolina)
  - Average Grade Point Average 3.4/4.0
  - Pharmacy Admissions test score = 392/500

- 2 year minimum of college courses required before applying to pharmacy school; however, 61% of our students have a prior college degree
- Students must achieve a ‘C’ (average) grade in each class to progress
Applying to Pharmacy School

- Generally, students must complete a minimum of two years of college work before applying to a pharmacy program.
- At UNC, 65% of students have already earned a degree (chemistry or biology, for example).
- The PCAT (Pharmacy College Admissions Test) is a required standardized test used by pharmacy schools.
- Performance on the PCAT is combined with previous academic performance and interviews in the admissions process.
University Students: Costs of Education

• Pharmacy student education costs have doubled during the past 6 years
• In the first three years of school:
  – Students from North Carolina pay $11,450 in tuition and fees each year
  – Students from outside North Carolina pay $27,500 in tuition and fees each year
• SOP provides 110 academic or needs-based scholarships each year ($330,000 total)
UNC School of Pharmacy
Curriculum: Year 1

• Fall Semester
  – Physiology
  – Pharmaceutics
  – Biochemistry
  – Health Systems
  – Pharmaceutical Care Lab

• Spring Semester
  – Pharmacodynamics
  – Pharmaceutics
  – Biochemistry
  – Pharmacotherapy
    • Rheumatology
  – Pharmaceutical Care Lab
  – Introductory Clerkship
UNC School of Pharmacy
Curriculum: Year 2

- Fall Semester
  - Pharmacology
  - Medicinal Chemistry
  - Pharmacokinetics and Biopharmaceutics
  - Pharmacotherapy
    - Dermatology
    - Endocrinology
    - Pulmonary
    - Gastroenterology
  - Drug Literature Evaluation
  - Pharmaceutical Care Lab

- Spring Semester
  - Pharmacology
  - Medicinal Chemistry
  - Clinical Pharmacokinetics
  - Pharmacotherapy
    - Cardiology
    - Nephrology
    - Neurology
    - Psychiatry
  - Pharmaceutical Care Lab
  - Professional Elective Course
  - Hospital/Community Clerkship
Syllabus and Schedule
Pharmacy 442 is the first course in a sequence of therapeutics-related modules that will be taught over the next two years. The syllabus for the core pharmacotherapy coursework is included. This course begins with information about how a pharmacist collects information, analyzes it, identifies drug therapy problems and provides recommendations and advice to patients and other health care professionals. This course also provides content about joint and musculoskeletal disorders and their management.

Recommended Text (not required)

Pharmaceutical Care Laboratory Description

A five-semester, professional development “laboratory” course

- emphasis on application of knowledge and development of cognitive and psychomotor skills to support patient care and practice management
- One weekly common hour for all students
- 3-hour laboratory sessions each week (7-12 students per instructor)
- Staffed by 4 faculty, 15 3rd year students, 15 residents
- Funded by student fees
Pharmaceutical Care Laboratory: Language, Tools, Basic Skills

- Medical Terminology
- Calculations
- Drug Info Retrieval
- Product Preparation
  - Sterile products
  - Compounding
  - Dispensing
- Drug Administration
- Technical Skills
- Patient Assessment
- Communication Skills
- Problem-solving
- Professionalism

- Clinical problem-solving
- Drug information analysis / interpretation
- Writing skills
- Verbal skills
  - Patient counseling
  - Professional consultation
  - Presentations
- Practice development and management
Standardized patients and Objective Structured Clinical Exams (OSCE)

Annual Cost to conduct: $30,000
Paid from Student fees
UNC School of Pharmacy
Curriculum: Year 3

• Fall Semester
  – Non-Prescription Drugs and Self-Care
  – Medicinal Chemistry
  – Pharmacotherapy
    • Infectious Diseases
    • Hematology and Oncology
  – Pharmaceutical Care Lab
  – Professional Elective Courses

• Spring Semester
  – Pharmacy Operations
  – Law and Ethics
  – Problems in Pharmacotherapy
  – Professional Elective Courses
Problems in Pharmacotherapy Course

• A 3rd year pharmacy course offered after completion of the pharmacotherapy coursework
• Students work in teams of 8 to 9 to discuss and develop pharmacist recommendations about complex medical problems
Problems in Pharmacotherapy Course

- Student groups receive a complicated detailed medical history
- Case assignments last for 1 to 2 weeks
- Students meet for 6 hours each week as a group
- Students identify drug therapy related issues
- Each group has a faculty facilitator
Problems in Pharmacotherapy Course

- Student search and evaluate the medical and pharmacy literature for appropriate recommendations about drug therapy
- In group meetings, students share and debate the relevance of their findings to the patient case
Problems in Pharmacotherapy Course

• At the end of 1 or 2 weeks, students prepare and present written and verbal recommendations to a faculty member (as a group)

• Two times during the year, students work on cases and prepare individual recommendations for grading
University Students: Costs of Education

• During the fourth year of school, students complete clinical clerkships.
• The cost for tuition and fees for the entire clerkship training is:
  • $8800 for students from North Carolina
  • $22,000 for students from outside of North Carolina
UNC School of Pharmacy Curriculum: Year 4

• Fall Semester
  – Pharmacy Clerkships (4)
    • month long experiences
  – Pharmacy Seminar

• Spring Semester
  – Pharmacy Clerkships (4)
    • Month long experiences
  – Pharmacy Seminar
Student Clerkship Months

- Approximately 130 students in each class.
- Each will complete 10 clerkship months. (total 1300 clerkships needed)
  - 76% complete clerkships with preceptor
  - 21% complete clerkship with external faculty
  - 3% complete clerkship with full time faculty
Pharm.D. Clerkships

• Typical day on a medicine clerkship for a Pharm.D. Student:
  • Arrive 7 AM to print patient profiles
  • Identify new patients and briefly review medical history
  • Receive any drug-related questions from night shift pharmacist
Pharm.D. Clerkships

- Patient care rounds at 7:30 AM with pharmacist preceptor, medical residents and medical students (conclude 9-10 AM)
- Follow-up on questions raised during rounds
- Evaluate drug regimen changes for new and continuing patients
- A clinical service usually has 12 to 18 patients
Pharm.D. Clerkships

• 11AM: team meeting with attending physician to discuss patients and assigned medical topics
• 12 Noon: Lunch and/or Seminar
• 1 PM: Review daily laboratories and new patient issues
Pharm.D. Clerkships

- 2:30 PM: Meet with pharmacist preceptor to discuss current patient drug therapy and monitoring parameters. Also discuss therapeutic topics assigned or present formal patient case presentation
- 4:30 PM: Follow-up on active patient issues. Make recommendations to physicians about drug therapy changes. Counsel patients about new therapies.
- Check out with night shift pharmacist
Evaluations

• Students are evaluated:
  – In the classroom by examination
  – On clerkship with an evaluation form
  – During seminars with an evaluation form
  – In the Skills lab through writing exercises, counseling exercises and standardized patient encounters
Evaluations

- Students complete evaluations of:
  - Classroom Courses
  - Faculty in classroom
  - Faculty Clerkship Preceptors
  - Volunteer Preceptors
  - Overall School of Pharmacy Program