

## Brothers, Sheila C

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**From:** Hippisley, Andrew R  
**Sent:** Thursday, April 17, 2014 1:16 PM  
**To:** Brothers, Sheila C  
**Subject:** PharmD\_MS Pharm Sciences

This is a recommendation that the University Senate approve the establishment of a new dual degree program between Doctor of Pharmacy and MS Pharmaceutical Sciences, within the College of Pharmacy.

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Dr Andrew Hippisley  
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<http://linguistics.as.uky.edu/user/751>

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**Memorandum**

TO: Frank Romanelli, Pharm.D.  
Associate Dean for Educational Advancement, Office of Education  
Professor of Pharmacy Practice and Science

FROM: Jim Pauly, Ph.D.  
Director of Graduate Studies in Pharmaceutical Sciences

DATE: January 28, 2014

RE: Approval for the PharmD/Masters in Pharmaceutical Sciences (PharmD/MS) Dual Degree Program by the Health Care Colleges Council

Dr. Romanelli - The faculty of the College of Pharmacy has approved the development of a PharmD/MS in Pharmaceutical Sciences Dual Degree program and we are thus submitting this program for approval by the Health Care Colleges Council HCCC. This dual degree option conforms to a similar format that was used for the approval of existing dual degrees with the PharmD and the MBA, MPA, MS Econ, and MPH programs. The PharmD/MS in Pharmaceutical Sciences dual degree program permits a student to gain both degrees in a total time period less than if the degrees were earned independently. We believe that this dual degree will be highly desirable for persons seeking careers in drug discovery and development research, clinical therapeutics and pharmaceutical outcomes and policy. Graduates will be well prepared for a variety of career options in the pharmaceutical industry or alternatively could elect to continue their education in the UK College of Pharmacy PhD program in Pharmaceutical Sciences. Once this program is reviewed by the HCCC, it will be submitted to the Graduate Council for their consideration. Thanks for your help shepherding the proposal along the route to approval.

## PharmD/MS in Pharmaceutical Sciences Dual Degree Program

### Background

The UK College of Pharmacy offers a four-year, 164-credit hour Doctor of Pharmacy (PharmD) degree. The PharmD degree program is accredited by the Accreditation Council for Pharmacy Education (ACPE) and satisfies all educational requirements for licensure as a Pharmacist. Since the profession has moved to the PharmD degree as the entry to practice, many talented PharmD students have sought dual degree programs to embellish their training, differentiate themselves from their classmates, and increase their competitiveness for advanced postgraduate training opportunities.

The University of Kentucky College of Pharmacy has an excellent track record of success in terms of collaborating with other academic units on campus to offer joint degree programs. The PharmD/MPA joint degree program has been offered since 1997 and the The PharmD/MBA joint degree program has been offered since 1999. PharmD/MPH and PharmD/MSPAS are the newest dual degrees to be implemented. The dual MS degree will not involve Departments outside the College of Pharmacy, and since our graduate program already has a MS degree program developed, the implementation of this dual degree program should be seamless.

Each year, more and more PharmD students are seeking dual degree options and it is anticipated that offering a dual MS degree in Pharmaceutical Sciences will enjoy at least the same level popularity with students as have the other joint degree programs that we have developed. Currently there are five PharmD students enrolled in graduate courses as post-baccalaureate students that we hope will be the first students in the dual PharmD/MS in Pharmaceutical Sciences degree program. The development of the dual degree program will phase out the Graduate Certificate Program in Pharmaceutical Sciences Research. We offered the Graduate Certificate program to PharmD students for the past 5 years, but the program never generated any significant interest. Thus we are highly encouraged that five students have already elected to choose the path towards a MS degree.

A key component of a dual degree program is that they permit a student to gain both degrees in a total time period less than if the degrees were earned independently. This dual MS in Pharmaceutical Sciences degree is thought to be highly desirable for persons seeking careers in state and local health departments, the pharmaceutical industry, managed care organizations, and academics. Students that participate in the program can choose any aspect of research conducted by in investigators at the UKCOP. These include 1) Drug Discovery (medicinal chemistry, pharmacology), 2) Drug Development (pharmacokinetics, drug formulation/optimization), 3) Clinical and Experimental Therapeutics or 4) Pharmaceutical Outcomes and Policy.

### Structure of Program

#### A. Admissions

A student desiring admission into the dual degree program will be required to apply formally and independently to both programs. Admissions standards are the same as if the student were applying solely to one program. To be admitted, an applicant is required to meet the independent admission standards of the College of Pharmacy, and The Graduate School.

(1) For the dual MS in Pharmaceutical Sciences program, applications will be made to the UK Graduate school/Pharmaceutical Sciences following completion of the first professional year in the College of Pharmacy. Students who do not hold an awarded bachelor's degree must have at least 90 hours of undergraduate credit hours to apply to the Graduate School at the end of the first professional year. An undergraduate grade point average of at least 2.75 on a 4.0 scale is required as is a GPA of at least 3.0 during the first year of Pharmacy school. Applicants must apply through "Apply Yourself", which requires the submission of official transcripts, letters of recommendation, a statement of purpose, and standardized test scores. For PharmD/MS in Pharmaceutical Sciences applicants, PCAT scores are accepted in lieu of GRE scores.

(2) For the College of Pharmacy, PCAT scores and grade point average, as well as letters of recommendation, a formal interview, and other factors described in the College of Pharmacy bulletin, are considered to establish admission eligibility.

B. Programs of Study

(1) The Existing MS in Pharmaceutical Sciences and PharmD Programs

- Students entering the MS in Pharmaceutical Sciences program can choose either a thesis option (Plan A) requiring 24 hours of graduate level coursework and at least six hours of masters research or a non-thesis option (Plan B) which requires at least 30 hours of graduate level coursework.

- The College of Pharmacy offers a four-year curriculum leading to the Doctor of Pharmacy degree (PharmD). The Doctor of Pharmacy degree is awarded upon completion of a minimum of 164 semester credit hours of specified coursework with a GPA of at least 2.0 out of a possible 4.0, and approval of the faculty. Pharmacy practice experience courses constitute 50 credit hours of the specified coursework and eight credit hours are elective.

(2) Dual PharmD/MS in Pharmaceutical Sciences Program

Under the dual degree program, we propose that 2 current PharmD courses will count towards graduate credit (PHS 951 Cardiopulmonary and Renal Pharmacology [5 credit hours] and PPS 966 Pharmacotherapy III [5 credit hours]. Other graduate courses will be taken to account for the 8 credit hours of elective credits needed for the PharmD curriculum. We would like all of the students in the Dual PharmD/MS in Pharmaceutical Sciences Program to choose a Plan A (thesis) degree, but to maintain maximal flexibility, we are receptive to the occasional Plan B student. The dual degree program is suitable for full-time students only. Students independently pursuing the PharmD who wish to enter the dual program must be accepted before their second year of the PharmD curriculum.

An example of the program of study for the PharmD/MS in Pharmaceutical Sciences dual degree students is:

Year 1:	38 credit hours of required Pharmacy courses 4 credit hours of Early Pharmacy Practice Experience (summer) Total = 42 credit hours
Year 2:	34 credit hours of required Pharmacy courses (9 of these hours also count towards the dual degree) 9 hours of graduate coursework electives 4 credit hours of Intermediate Pharmacy Practice Experience (summer) Total = 43 credit hours
Year 3:	34 credit hours of required Pharmacy courses 8 hours of graduate coursework electives Total = 42 credit hours
Year 4:	30 credit hours of Advanced Pharmacy Practice Experience 12 credits of MS Research Credits Total = 42 credit hours

### C. Grade Point Average

Grade point average for these programs is calculated independently and respectively by the PharmD and graduate programs at the UKCOP. Dual degree students are required to remain in compliance with the academic standards of each degree-granting unit. For example, a student must satisfy the College of Pharmacy GPA requirements solely on the basis of graded pharmacy school course work and The Graduate School's GPA requirements solely on the basis of graded Graduate School course work. Eight credit hours of pharmacy course work must be transferred into the Graduate School in order to satisfy the 30 credit hour requirement of the Plan A MS program; no grade of "C" or below can be transferred.

### D. Student Status

During the period of MSPAS studies, the student will have the status of graduate student and will have to comply with the rules and regulations of The Graduate School. During the period of Pharmacy residence, the student will have the status of a pharmacy student and will have to comply with the rules and regulations of the College of Pharmacy.

### E. Program Assessment

A specific Assessment Program will be developed for the dual degree program, in consultation with Ms. Helen Garces who is the Director of Assessment at the UK College of Pharmacy. The Assessment Program for the PharmD side of the program is already established, and student performance is monitored the same way for all enrolled. We will apply the same model to the MS side, utilizing data from MS coursework assessments (assessments within required courses and the thesis) and conducting programmatic assessment (course evaluations, graduating student surveys, job placement surveys etc.).

The assessment plan for the professional PharmD program is based on Alexander W. Astin's Input-Environment-Outcome (I-E-O) model for assessment activities. The primary goal is to maximize student success in meeting our stated outcomes. This requires understanding as much as possible about student inputs (i.e., demographics, academic strengths and weaknesses, plans and aspirations, etc.) and the impact of the educational environment (i.e., extracurricular activities, instructional methods, courses, etc.) in order to facilitate and enhance students success in the program. The UKCOP assessment plan is a multi-faceted process conducted in several phases. Many features and activities of the UKCOP assessment plan are in accordance with ACPE Standards regarding teaching, learning, assessment of students, and assessment of the curriculum. Several features of the UKCOP assessment plan include utilizing both formative and summative approaches (including direct and indirect measures) and analyzing qualitative and quantitative data. The program uses multiple methods to analyze variables or research assessment questions. Feedback from these assessments (provided to the administration, Curriculum Committees, students, faculty, and outside stakeholders) enhances the ability to monitor and improve our program.

The student learning outcomes for the MS program are listed below:

1. Students will demonstrate a thorough command of knowledge in an area of research emphasis offered by the Pharmaceutical Sciences Graduate Faculty.
2. Students will demonstrate the ability to apply critical scientific thought in the application of hypothesis formation, and the design and execution of experiments.
3. Students will demonstrate competency in the collection, analysis and interpretation of data as it relates to the scholarship of their area of research emphasis.
4. Students will be able to effectively, competently communicate scientific findings orally and in scholarly writing.

## F. Program Approvals

College of Pharmacy - Graduate Program Committee: September 2013

College of Pharmacy - Graduate Faculty: October 2013

College of Pharmacy - Curriculum Committee: November 2013

College of Pharmacy – COP Faculty: December 2013

## G. Curricular Overview – See Next Page

## PROPOSED CURRICULAR SEQUENCE – Dual PharmD/MS Pharmaceutical Sciences Degree

### YEAR ONE

#### Fall Semester

TOTAL = 19 credits

PPS 910: Intro to Pharmacy Practice (3)  
PHS 911: Physiology I (4)  
PHS 912: Physiological Chemistry I (3)  
PPS 913: Antibiotics (3)  
PHS 914: Pharmaceutics and Biopharmaceutics I (3)  
PPS 916: Non-Prescription - OTC I (2)  
PPS 919: Patient Care Lab I (1)

#### Spring Semester

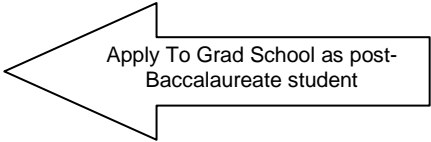
TOTAL = 19 credits

PPS 920: Communication and Behavior in Practice (3)  
PHS 921: Physiology II (4)  
PHS 922: Physiological Chemistry II (3)  
PPS 923: Nutrition and Health Promotion (3)  
PHS 924: Pharmaceutics and Biopharmaceutics II (3)  
PPS 926: Non-Prescription - OTC II (2)  
PPS 929: Patient Care Lab II (1)

#### Summer Semester

TOTAL = 4 credits

PPS 928: Introductory Practice Experience I (4)



Apply To Grad School as post-Baccalaureate student

### YEAR TWO

#### Fall Semester


TOTAL = 22 credits (12 PharmD, 5 Dual, 5 Graduate)

PPS 930: Law, Ethics, Access (4)  
PHS 931: Neuropharmacology (5)  
PHS 932: Immunology and Biotechnology (3)  
PHS 933: Endocrinology (3)  
PPS 939: Patient Care Lab III (2)  
PHS 760 Drug Discovery, Development and Translation (3)  
PHS 778 Seminar (1)  
PHS 750 Journal Club (1)

#### Spring Semester

TOTAL = 21 credits (13 PharmD, 4 Dual, 4 Graduate)

PPS 940: Evidence Base for Pharmacy (4)  
PHS 944: Medicinal Chemistry (3)  
PPS 946: Advanced Pharmacotherapy I (5)  
PHS 947: Pharmacokinetics (4)  
PPS 949: Patient Care Lab IV (1)  
PHS 778 Seminar (1)  
Graduate Elective (3)



Apply To Grad School as a Masters student

#### Summer Semester

TOTAL = 7 credits (4 PharmD, 3 graduate)

PPS 948: Introductory Practice Experience II (4)  
PHS 790 Research Credit (3)

### YEAR THREE

#### Fall Semester

TOTAL = 21 credits (17 PharmD, 4 graduate)

PPS 950: Pharmaceutical Policy and Public Health (4)  
**PHS 951: Cardiopulmonary/ Renal (5) (Professional and Graduate Credit Course)**  
PPS 953: Current Topics Seminar (1)  
PPS 957: Pharmacotherapy I / II (5)  
PPS 959: Patient Care Lab V (2)  
STA 570 Statistics (4)

**Spring Semester**

TOTAL = 21 credits (17 PharmD, 4 graduate)

PPS 960: Pharmacy Practice Management (5)

PPS 966: Pharmacotherapy III (5) (Professional and Graduate Credit Course)

PPS 967: Pharmacotherapy IV (5)

PPS 969: Patient Care Lab VI (2)

Graduate Elective (3)

PHS 750 Journal Club (1)

**YEAR FOUR**

**Summer, Fall and Spring Semesters**

TOTAL = 42 credits (30 Professional, 12 Graduate)

PPS 99x Advanced Pharmacy Practice Experience Rotations

7 rotations x 6 weeks each (5 Professional, 2 Research [PHS 790 Research Credit]) (6 credit hours each)



Signature Routing Log

**General Information:**

Proposal Name: PharmD/MS in Pharmaceutical Sciences Dual Degree Program

Proposal Contact Person Name: Jim Pauly, PhD Phone: 323-8164 Email: [jpauly@uky.edu](mailto:jpauly@uky.edu)

INSTRUCTIONS:

Identify the groups or individuals reviewing the proposal; note the date of approval; offer a contact person for each entry; and obtain signature of person authorized to report approval.

**Internal College Approvals and Course Cross-listing Approvals:**

Reviewing Group	Date Approved	Contact Person (name/phone/email)	Signature
College of Pharmacy Graduate Program Committee	10/25/2013	Dr. Jim Pauly, Director of Graduate Studies/ 323-8164/ <a href="mailto:jpauly@uky.edu">jpauly@uky.edu</a>	Jim Pauly
College of Pharmacy Curriculum Committee	12/12/2013	Dr. Melody Ryan, Committee Chair/ 257-8790/ <a href="mailto:maryan1@email.uky.edu">maryan1@email.uky.edu</a>	Melody Ryan
College of Pharmacy Faculty	12/18/2013	Dr. Paul Bummer, Faculty Secretary/ 218-6522/ <a href="mailto:pbumm01@email.uky.edu">pbumm01@email.uky.edu</a>	Paul Bummer
College of Pharmacy Dean	12/18/2013	Dr. Frank Romanelli, Assoc. Dean for Educational Advancement/257-4778/ <a href="mailto:froma2@email.uky.edu">froma2@email.uky.edu</a>	Frank Romanelli

**External-to-College Approvals:**

Council	Date Approved	Signature	Approval of Revision*
Undergraduate Council			
Graduate Council			
Health Care Colleges Council	2/18/14	Cynthia Beeman	
Senate Council Approval		University Senate Approval	

Comments:

## **Brothers, Sheila C**

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**From:** Nikou, Roshan  
**Sent:** Friday, March 14, 2014 12:04 PM  
**To:** Blackwell, Jeannine; Blonder, Lee; Brothers, Sheila C; Ellis, Janie; Ett, Joanie M; Hanson, Roxie; Jackson, Brian A; Lindsay, Jim D.; Nikou, Roshan; Price, Cleo; Timoney, David M  
**Cc:** Pauly, Jim; Grabau, Larry; Maloney, Doreen; Webber, Kelly H; Bastin, Sandra P; Ash, Bridget A; Day, Tricia M  
**Subject:** GC Transmittals  
**Attachments:** Dual Degree in PharmD and PharmSci.pdf; MS in Public Admin.pdf; MA in Art History.pdf; MS in Hospitality and Dietetic Admin.pdf; MS in Merchandising and Textile.pdf

TO: Lee Blonder, Chair and Sheila Brothers, Coordinator  
Senate Council

FROM: Jeannine Blackwell, Chair and Roshan Nikou, Coordinator  
Graduate Council

The Graduate Council approved the five attached program proposals and the courses listed below, and is now forwarding them to the Senate Council to approve. Please note, the courses listed below have all been transmitted via e-Cats.

### **Programs**

Dual Degree in PharmD and M.S. in Pharm Sci  
MA in Art History and Visual Studies  
MS in Hospitality and Dietetic Administration  
MS in Merchandising, Apparel & Textiles  
MS in Public Administration

### **New Courses**

ASC 690 Macronutrient Metabolism in Domestic Animals  
DHN 600 Research Methods in Nutrition and Food Systems  
DHN 605 Food Systems and Society  
DHN 608 Chronic Disease Management and Process  
DHN 774 Seminar in Nutrition and Food Systems  
EDC 626 Current Issues in Literacy Education  
EES 685 Ground Water Modeling  
HMT 785 Independent Study in Hospitality Management  
KHP 682 Contemporary Sport Leaders  
MAT 720 Rural Retail Development  
MUS 662 Dalcroze Approach I  
MUS 663 Dalcroze Approach II  
MUS 668 Dalcroze Approach III

MUS 669 Individual Dalcroze Project  
RTM 690 Industry Experience in Retailing and Tourism  
RUS 535 Visual Studies

**Course Changes**

EDC 608 Instructional Design II  
EDC 621 Linguistic/Cognitive Foundations of Reading  
EDC 642 Research and Theory in Teaching Language  
HMT 759 Special Topics in Hospitality Management

**Drop Course**

HIS 516 Scientific World View Before 1650

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