January 25, 2014

Dean Martin Cadwallader
Graduate Faculty Executive Committee

Dear Dean Cadwallader:

At its meeting on November 26, 2013, the School of Pharmacy Academic Planning Council unanimously approved the attached document describing a PharmD/MS dual degree program in Social and Administrative Sciences in Pharmacy. I am writing to express my full support of the program as outlined in the document.

Dual degree programs such as the one proposed offer important avenues for advanced training and expanded career opportunities for our PharmD students in the areas of practice, administration and research. Such training is a vital bridge to provide excellent candidates for PhD programs, which can augment the number of pharmacy-trained research faculty at Schools of Pharmacy.

This is a very exciting prospect and there is increasing interest on the part of our PharmD students for joint research training in our graduate programs.

Sincerely,

Jeanette C. Roberts, PhD, MPH
Dean and Professor, Pharmaceutical Sciences Division

cc:  Paul DeLuca, Provost and Vice Chancellor for Academic Affairs
     Paul Hutson, Associate Dean for Academic Affairs and Professor, Pharmacy Practice Division
     Chuck Lauhon, Assistant Dean for Graduate Studies and Associate Professor, Pharmaceutical Sciences Division
     Dave Mott, Professor and Chair, Social and Administrative Sciences Division
Doctor of Pharmacy-
Master of Science in Social & Administrative Sciences in Pharmacy
[Pharm.D.—M.S.(SAS)]
Dual Degree Proposal

Proposal Introduction
Via this document, the School of Pharmacy (SoP) Graduate Studies Committee is advancing, at the initiative of the School’s Social and Administrative Sciences (SAS) in Pharmacy Division faculty, a proposal for a new Doctor of Pharmacy-Master of Science (SAS) dual, degree program (which will be abbreviated PharmD-MS(SAS) for the remainder of this document). Approval of this proposal would create an additional educational option offered via competitive application only to those students concurrently enrolled in the PharmD program at UW-Madison. Presently the School is involved in one other dual degree program, the PharmD-Masters in Public Health (MPH), via coordination with the UW School of Medicine & Public Health.

Three semesters of PharmD coursework would be required to apply for the PharmD-MS(SAS), and the pursuit of the additional degree, as presented here, would lead to an extended program, with one finishing the PharmD at the conclusion of the summer of the fourth year (one semester beyond what is typical for traditional PharmD students), and both degrees in approximately five academic years. As per the definition of dual degree at the University of Wisconsin-Madison, one degree would be granted from a professional program (pharmacy); the other would be granted in a graduate program (a master’s, in Social & Administrative Sciences in Pharmacy). The student would earn two diplomas (Diploma 1: Degree—Doctor of Pharmacy; Diploma 2: Degree—Master of Science).

Timing; Implementation
This proposal is organized with reference to the PharmD class that matriculated in the Fall of 2012 and is scheduled to graduate from the professional program in May 2016; it is with their curricular and degree requirements that the proposal is based. It is the desire of the SAS faculty to have this dual degree approved and in place for January 2014 admissions, such that the first individuals enrolled in such can commence such studies in the Fall ‘14 semester. Note that professional electives requirements for the PharmD degree for class entering in the Fall of 2013 (and beyond) have been reduced to 16 (from 18) as the result of a 5/14/13 SoP Faculty Meeting; the example plan provided at the conclusion of this proposal reflect accomplishment of the revised, lower professional elective figure.
Background

The Doctor of Pharmacy (PharmD) Program* at UW-Madison
Curricular and professional goals; educational philosophy

The Doctor of Pharmacy (PharmD) degree provides students with foundational knowledge of the biomedical, pharmaceutical, social and clinical sciences, and with the skills, attitudes, and values required to address patients’ pharmaceutical care needs. Course work and clinical experience focus on understanding the diagnosis and treatment of diseases, and the therapeutic use, appropriateness, selection, monitoring, and cost-effectiveness of drugs. Students enrolled in the program participate in a variety of learning opportunities that are necessary for educating and counseling patients, and for understanding and appreciating the social, emotional, and psychological implications of disease. The PharmD program fulfills the educational aspect of the requirements for licensure as a pharmacist and has the primary goal of educating pharmacists for entry into generalist practice.

SAS elements in the required PharmD Curriculum

Presently, UW PharmD students take 12 required SAS credits across five courses in the professional curriculum, in this chronological order:

- SAS 411, Psychosocial & Management Aspects of Pharmacy, 3 cr (DPH-1, Fall)
- SAS 414, Pharmacy in the Health Care System, 3 cr (DPH-1, Spring)
- SAS 511, Pharmacy Law & Regulation, 2 cr (DPH-2, Spring)
- SAS 618, Professional Decision-Making in Pharmacy Practice, 2 cr (DPH-3, Fall)
- SAS 652, Pharmacist Communication: Educational & Behavioral Interventions, 2 cr (DPH-3, Spring)

Additional exposure in the DPH-1 and DPH-2 years to SAS and its many subdisciplines can be explored via involvement in research projects with SAS faculty and graduate students.

*(Note that PharmD students are referenced as DPH-1s as first-year PharmDs, DPH-2s as second-year PharmDs, etc., graduating at the completion of the DPH-4 year. This proposal uses DPH-5 nomenclature to designate a student working towards finishing the MS portion of the dual degree after achievement of the PharmD degree).

MS(SAS) Program at UW-Madison
Curricular goals; educational philosophy

The objective of the Master of Science program in SAS is to prepare students to carry out independent, theory-based research leading to new knowledge and understanding of drug use, patient and provider communication and behaviors, health outcomes, pharmacy practice, patient care systems, and the pharmacy profession. This is accomplished by integrating knowledge of pharmacy and pharmaceuticals with theories and concepts from disciplines such as economics, sociology, psychology, management sciences, education, epidemiology, history and law. These complement and significantly expand upon areas of study included in the PharmD curriculum.
Background (cont.)

Dual Degree Programs at Schools/Colleges of Pharmacy
The American Association of Colleges of Pharmacy (AACP) monitors the number of dual degree programs offered by colleges and schools of pharmacy, nationally. Those programs anticipated to be in place for 2013-14 are presented at:  
http://www.aacp.org/resources/student/pharmacyforyou/admissions/admissionrequirements/Documents/Table%204.pdf. There are currently 16 institutions with some type of PharmD-MS dual programs in place, offered within a college or school of pharmacy; seven (7) institutions offer PharmD-MS dual degree combinations in coordination with other programs outside of their school/college of pharmacy.

Many PharmD-MS dual programs offer the masters in a pharmaceutical sciences discipline. A PharmD-SAS-type combined degree is harder to find nationally, with no such offerings within the Big 10, and only two such programs closely aligned in name—at the University of Houston and at the University of Washington (presented in the list below). Existing dual degree offerings that are similar in some themes to Wisconsin’s proposed PharmD/MS(SAS) include the following:

- PharmD/MS-Clinical Leadership (University of Albany)
- PharmD/MS-Clinical Research (Campbell University; University of South Carolina)
- PharmD/MS-Clinical Translational Science (Illinois at Chicago)
- PharmD/MS-Global Medicine (Southern California)
- PharmD/MS-Health Informatics (Illinois at Chicago)
- PharmD/MS-Informatics (Findlay University)
- PharmD/Masters in Public Administration (MPA) (Drake; University of Kentucky; University of Missouri—Kansas City)
- PharmD/MS in Pharmacy Administration (University of Houston)  
  http://www.uh.edu/pharmacy/prospective-students/combined-programs/index.php  
  (The University of Houston’s PharmD/MS offers two tracks—(i) an Outcomes Research Track concentrating on pharmacoconomics, drug use management, pharmaceutical care, pharmacoepidemiology and outcomes research and (ii) a Business Management/Leadership track focusing on pharmaceutical marketing, financial management, managed care issues, health care delivery systems, and outcomes assessment/evaluation).
- PharmD/MS in Pharmaceutical Outcomes, Research and Policy (University of Washington)  
  http://sop.washington.edu/porpp/graduate-program/concurrent-pharmdms-degree-in-pharmaceutical-outcomes-research-a-policy.html
- PharmD/MS-Regulatory Science (Southern California)

Rationale/Purpose/Motivation
The innovation of a PharmD-MS(SAS) degree at Wisconsin would provide an additional option for those PharmD students with diverse scholarly interests, and in particular for those aiming for pharmacy career paths in which an advanced degree in SAS will provide a competitive advantage. These include careers in health outcomes research, pharmacy benefits management, and pharmacy quality management. The demand for clinically trained pharmacists with research capabilities in various professional settings is high and is expected to grow. The PharmD-MS(SAS) program is being created to meet this demand.

The program also would expose such dual degree students to the possibility of a career in academic pharmacy in the social and administrative sciences, pharmacy practice and
clinical sciences. A PhD is often required for tenure-track faculty positions in colleges/schools of pharmacy, and it is indeed the hope of UW-Madison SAS faculty that many of the PharmD-MS(SAS) dual degree students would elect to pursue a SAS PhD. With the expanded number of colleges/schools of pharmacy in the last decade, a career in pharmacy education is a viable option. Training within the MS-SAS degree would allow students to expand on their credentials towards being a competitive faculty candidate, such as:

- Building quantitative and qualitative research skills
- Building interprofessional skills for interacting effectively with students, faculty, health professionals and patients
- Beginning a publication record
- Demonstrating experience with extramural funding¹

Due largely to the length and cost of achieving a PharmD degree (at minimum, two years of undergraduate work and four additional years of at the professional student level), attracting students to academic careers in pharmacy has been increasingly difficult. The efficiency offered via this dual degree allows the potential student the opportunity to experience graduate-level SAS coursework and research at an earlier, but still appropriate (students would begin MS work while DPH-3s) stage, allowing one to see the degree of “fit” of academic pharmacy/pharmacy education while in the latter portion of their PharmD careers.

¹ These four bullet points taken from “Why Pharmacy Education”, an AACP publication.

**Demand/Enrollment Projects; Advising Considerations**

No surveys or marketing techniques have been employed to gauge current or future (e.g., with UW-Madison students registered with the School’s pre-pharmacy club) student interest in a PharmD-MS(SAS) dual degree program. The University of Houston relayed that they have 2-3 PharmD-MS students per PharmD class in their similarly named dual degree program mentioned above; the University of Washington reported similar numbers. Washington’s program is similar to our proposal in that it is arranged such that the MS can be completed in one extra year. We anticipate similar demand.

If the dual PharmD-MPH program at UW-Madison can be used as a predictor, that existing dual program has averaged about one student per year (there are three such dual degree alumni and two current students pursuing both degrees as of November 2013). Due to SAS faculty restraints, the program would be limited to allowing at most four (4) new dual degree students to be admitted annually. This is mainly driven by limits on faculty time for appropriate research mentoring/advising of all graduate students (traditional PhD, traditional MS, and dual PharmD-MS).
Admission Requirements

Doctor of Pharmacy Program

Admission to the PharmD program at Wisconsin is extremely competitive. Applicants are required to have completed a minimum of 68 pre-School of Pharmacy credits, as outlined in Table 1.

Table 1: Pre-Pharm.D. Course Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Biology w/lab (year integrated sequence)</td>
<td>8-10</td>
</tr>
<tr>
<td>Calculus (for math/science majors)</td>
<td>4-5</td>
</tr>
<tr>
<td>General Chemistry w/lab</td>
<td>8-10</td>
</tr>
<tr>
<td>Organic Chemistry w/lab</td>
<td>8-10</td>
</tr>
<tr>
<td>General Physics w/lab</td>
<td>8-10</td>
</tr>
<tr>
<td>Microbiology</td>
<td>3</td>
</tr>
<tr>
<td>Communication</td>
<td>3</td>
</tr>
<tr>
<td>Microeconomics</td>
<td>3-4</td>
</tr>
<tr>
<td>Statistics</td>
<td>3</td>
</tr>
<tr>
<td>General Sociology, General Anthropology, or Cultural Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>Introductory Psychology or Social Psychology</td>
<td>3</td>
</tr>
<tr>
<td>Ethnic studies</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>Variable</td>
</tr>
</tbody>
</table>

PharmD admission is based upon the following criteria (presented in alphabetical order, below) (taken from http://pharmacy.wisc.edu/academics/doctor-pharmacy-program/admissions/selection-criteria, 5/22/13):

- Academic achievement
- Communication skills (oral, non-verbal, written)
- Completion of required pre-Pharm.D. coursework
- Cultural awareness and understanding
- Diversity of background and experiences
- Experience in pharmacy or health care or research
- Extracurricular/community service/volunteer activities
- Interest and understanding of the pharmacy profession
- Leadership experience
- Pharmacy College Admission Test (PCAT) score

Students admitted to the PharmD program complete a 4-year program of study. The first two years of the curriculum are uniform for all students and focus on foundational aspects of pharmaceutical sciences, clinical pharmacy practice, and the social/administrative sciences in pharmacy; they are presented in Table 2. Required PharmD courses offered by the SAS Division in these first two years are highlighted in blue with Table 2.
Table 2: Course Requirements for the First and Second Years of the PharmD Program

<table>
<thead>
<tr>
<th>FIRST (DPH-1 YEAR)</th>
<th>Credit hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PATH 404, Pathophysiologic Principles of Human Diseases</td>
<td>3</td>
</tr>
<tr>
<td>PHM SCI 420/421, Intro to Drug Action &amp; Drug Delivery I and II</td>
<td>8</td>
</tr>
<tr>
<td>PHM SCI 432, Pharmaceutical Biochemistry</td>
<td>4</td>
</tr>
<tr>
<td>PHM SCI 531, Medicinal Chemistry I</td>
<td>2</td>
</tr>
<tr>
<td>PHM SCI 541, Drug Delivery Systems Lab I</td>
<td>3</td>
</tr>
<tr>
<td>PHM PRAC 425/426, Intro to Pharmaceutical Care Clerkship I and II</td>
<td>2</td>
</tr>
<tr>
<td>PHYSIOL 335, Physiology (with lab)</td>
<td>5</td>
</tr>
<tr>
<td>S&amp;A PHM 411, Psychosocial and Management Aspects of Pharmacy (w lab)</td>
<td>3</td>
</tr>
<tr>
<td>S&amp;A PHM 414, Pharmacy in the Health Care System (w lab)</td>
<td>3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SECOND (DPH-2 YEAR)</th>
<th>Credit hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHM SCI 521/521, Pharmacology I and II</td>
<td>6</td>
</tr>
<tr>
<td>PHM SCI 532, Medicinal Chemistry II</td>
<td>2</td>
</tr>
<tr>
<td>PHM SCI 540, Drug Delivery Systems</td>
<td>4</td>
</tr>
<tr>
<td>PHM SCI 541/542, Drug Delivery Systems Lab II</td>
<td>3</td>
</tr>
<tr>
<td>PHM PRAC 525/526, Intro to Pharmaceutical Care Clerkship III and IV</td>
<td>2</td>
</tr>
<tr>
<td>PHM PRAC 555/556, Pharmacotherapy I and II (with lab)</td>
<td>8</td>
</tr>
<tr>
<td>PHM PRAC 570, Drug Literature Evaluation</td>
<td>3</td>
</tr>
<tr>
<td>S&amp;A PHM 511, Pharmacy Law &amp; Regulation</td>
<td>2</td>
</tr>
</tbody>
</table>

PharmD students who wish to pursue the PharmD/MS(SAS) will first be able to apply to the MS(SAS) program during the second (DPH-2) year of the PharmD curriculum. Further, we anticipate that, because student interests evolve as they progress through their studies, a few students may decide to apply for MS(SAS) admission during the third (DPH-3) year of the PharmD program as well (a sample plan for students enrolling in the dual degree at the beginning of their DPH-4 year is not presented in this proposal).

Completion of a baccalaureate degree is not required for admission the PharmD program. In the most recent admissions cycle (for fall 2013 matriculation), approximately 60% of all newly-admitted PharmD students possessed a BS or BA degree. Only students holding a bachelor's degree are eligible for enrollment in the UW Graduate School, and thus for admission in this new dual degree program. As the SoP is currently (in the 2013-14 academic year) instituting a B.S. Pharmaceutical Sciences (BSPS) degree, for students to earn “along the way” to a PharmD, those students who have yet to complete an undergraduate degree but who completed their pre-PharmD coursework at UW-Madison will typically earn the BSPS after the completion of the didactic portion of the first two PharmD academic years, making it possible to enter the dual degree program in the third PharmD year (“DPH-3”). The BSPS will be awarded retroactively, making a good number of current PharmD students eligible for graduate school. The BSPS will be transcripted for such students following their DPH-2 year. (The plan is for the BSPS to eventually be expanded and granted for students completing pre-PharmD coursework at other UW-System institutions before coming to Wisconsin-Madison).
Admission Requirements (cont.)

Master of Science—Social and Administrative Sciences in Pharmacy Program

The SAS Faculty will incorporate review of dual degree applicants as part of its annual January graduate admissions process (the time of year it reviews all applicants to its traditional MS and PhD programs). Admission requirements are the same for dual degree applicants as for traditional MS applicants. Because dual degree students, like any graduate students, will require faculty time and mentoring, it is best for all potential SAS graduate students to be evaluated concurrently, to balance faculty resources/capacity, student research interests, and student mentoring needs.

Requirements for MS-SAS admission:
1. A baccalaureate degree (B.A. or B.S.). Many UW-Madison PharmD students hold such. As noted above, some students enrolled in UW-Madison’s PharmD program we be simultaneously in the process of earning a B.S. in Pharmaceutical Sciences (at the conclusion of their DPH-2 year) and also will be eligible to apply to the dual degree program.
2. Social science or health services research experience is highly recommended. For dual degree applicants, this could be work done as an advanced undergraduate or during the first two years of the PharmD program.
3. Three letters of recommendation which focus on the applicant’s social science research accomplishments and/or potential for success in the social/administrative sciences of pharmacy and/or health services research field are required.
4. Official transcripts from all college/university work must be submitted. Foreign-educated applicants must submit their international academic records in the original language accompanied by an official English translation. An undergraduate cumulative GPA of 3.0 or higher is expected. (Dual degree applicants will be reviewed via such documentation already on file through the School of Pharmacy’s PharmD Admissions Office [for pre-PharmD work] and via UW-Madison student records [for PharmD work]). Official transcripts will also need to be submitted to the UW Graduate School for official graduate student admission.
5. A personal statement addressing the applicant’s reasons for pursuing graduate study in the social/administrative sciences of pharmacy.
6. GRE scores (taken within the last 5 years).
7. Applicants whose native language is not English, or whose undergraduate instruction was not in English, must provide official scores from the Test of English as a Foreign Language (TOEFL), taken within the last 5 years. Minimum required scores by the Graduate School are: 580 for the paper test, 237 for the computer test, and 92 on the Internet Test (IBT). Such should be submitted to the UW-Madison Graduate School from Educational Testing Service (ETS) using institution code 1846.

Admission Criteria
The SAS Graduate Admissions Committee considers all of the required application materials in making admissions decisions. Important factors for admission include GPA, GRE scores from the GRE®Revised General Test, letters of recommendation,
background and experience, and demonstrated commitment to pursue a research career in social/administrative sciences and/or health services research. Written descriptions of relevant professional and research experiences and interests are useful to the SAS Admissions Committee when reviewing applicants. All applicants must satisfy the minimum admission requirements established by the UW-Madison Graduate School.

**Dual Degree Curricular Requirements**

*Doctor of Pharmacy Program*

A total of 206 credits is required for completion of the PharmD degree. This consists of 68 pre-School of Pharmacy credits and 138 School of Pharmacy credits (122 credits in core curriculum + 16 credits of professional electives). Of these latter 138 credits, at least 63 are completed during the first and second years of the PharmD program through the required PharmD curriculum. This leaves 75 credits for completion while a student would be enrolled in the dual degree program. Pages 13-15 present a sample program of study. Among them is a series of advanced pharmacy practice clerkships that are completed in the DPH-4 year.

One hurdle in the current picture of structuring the dual degree is in regards to the 16 credit PharmD professional electives category. For the class of 2016, these professional electives are broken up into three categories:

(i) Professional electives offered through the SoP, (3-16 cr), taken from an approved list (available at [http://pharmacy.wisc.edu/student-resources/current-pharmd-resources/registration-information-materials/spring-professional-el](http://pharmacy.wisc.edu/student-resources/current-pharmd-resources/registration-information-materials/spring-professional-el));

(ii) Independent Study, xxx-699 (0-6 cr), and

(iii) Non-SoP professional electives (0-9 cr), taken also from an approved list (available at [http://pharmacy.wisc.edu/sites/default/files/content/student-resources/current-pharmd-resources/registration-information-materials/nonSOPelectives.pdf](http://pharmacy.wisc.edu/sites/default/files/content/student-resources/current-pharmd-resources/registration-information-materials/nonSOPelectives.pdf)).

To accomplish the dual degree efficiently, existing course options within the MS SAS program that are currently not part of the PharmD professional electives list (both SoP- and non-SoP based) would have to be added to these approved courses. This would enable overlap of 11 credits (i.e. 11 credits that count in both programs).

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*The May 2013 SoP Faculty Meeting changed the total PharmD degree credit total to 206 (from 208) and reduced the number of required professional electives from 18 to 16 for the PharmD class of 2016 (and beyond); this proposal is written in terms of the 206 total degree requirement.

**MS-SAS Program**

A total of 32 credits is required for completing the MS(SAS) degree. These include a minimum of 8 credits in core courses, 9 credits in methods/analysis courses, and 11 credits in specialty/advanced courses. (The MS curricula outline is presented in greater detail at [http://pharmacy.wisc.edu/education/social-administrative-sciences-pharmacy-ms-phd/masters-degree-curriculum](http://pharmacy.wisc.edu/education/social-administrative-sciences-pharmacy-ms-phd/masters-degree-curriculum). The graduate courses in the sample plan (pps. 12-14) present a sample program of study. The MS(SAS) requires the completion of a written, orally defended thesis.
Aspects Unique to the PharmD-MS(SAS) Dual Degree Program

Approved Overlap/Transfer Credits

As presented here, 11 credits would overlap between programs (i.e., count toward completion of both degrees). Since the dual degree program is only available to University of Wisconsin-Madison PharmD students accepted for the second degree, it is not expected that any credits from other institutions could be transferred to satisfy the MS(SAS) degree.

Expected time to degrees—(Completion Staggered)

With advance planning, completion of both degrees in an additional calendar year (3 semesters—summer, fall, and spring) is plausible (as contrasted from only doing the PharmD degree).

PharmD—expected time to degree

The typical PharmD student completes two semesters each year in years 1-2 (four semesters) and then fall, spring, and summer terms in year 3 (3 semesters), concluding with a fall and spring terms in year 4 (2 semesters) for a total of 9 semesters. A 10-semester completion of the PharmD would be expected for dual degree students, due to the suggested DPH-4/MS-2 fall semester focused on graduate work and not on the typical (for fourth year pharmacy students) advanced pharmacy practice experiences/clinical rotations (see sample plan).

This would mean the three full-time clinical semesters of the PharmD program would move from:

- DPH-3 Summer,
- DPH-4 Fall and
- DPH-4 Spring

to:

- DPH-3/MS-1 Summer (same timing),
- DPH-4/MS-2 Spring (same as the third semester presented in the above grouping of bullet points), and
- DPH-4/MS-2 Summer (new).

Two of these three clinical semesters would be in sync with the PharmD class that dual degree students entered with (those marked as “same”); the final clinical semester would be with a new cohort of PharmD students.

MS(SAS)—expected time to degree

The MS(SAS) portion of the dual degree is estimated to be completed at the end of the 12th semester. Dual degree students, according to the sample plan, would have PharmD student status for the entirety of their PharmD degree—until it is completed (after 10 semesters in our sample plan) and graduate student status for the final two semesters. Unique to them (compared to their peers completing a PharmD degree “on time”) such students would have a DPH-4/MS-2 summer semester, a MS-3 fall semester, and finally, a MS-3 spring semester. The latter two semesters would be as graduate students and PharmD graduates.
Administration and Governance; Tracking of Students
The program would be governed and administered by the faculty of the SAS Division of
the School of Pharmacy, with additional support provided by the School’s Graduate
Programs Coordinator, who will act as a liaison with the School of Pharmacy Student
and Academic Affairs Office, which administers the PharmD program. We believe this
structure will ensure the proper collaboration and communication. In addition to
regular ongoing faculty monitoring of individual graduate advisees, the SAS faculty
collectively review all graduate student progress annually in meetings in June. Dual
degree students, as graduate students, would be included in both processes.

List of Faculty—
Social & Administrative Sciences in Pharmacy Division
School of Pharmacy

Betty A. Chewning, Ph.D.
Professor and Director of the Sonderegger Research Center

Michelle A. Chui, Pharm.D., Ph.D., Assistant Professor

Gregory J. Higby, Ph.D., Adjunct Professor and
Director of the American Institute of the History of Pharmacy (AIHP)

David H. Kreling, Ph.D., Professor

David A. Mott, Ph.D., R.Ph., FAPhA, Professor and Division Chair
Hammel/Sanders Distinguished Professor in Social and Administrative Sciences

John Scarborough, Ph.D., Ph.D., M.A.(Oxon), D.H.L.hon., Professor

Olayinka Shiyanbola, Ph.D., B. Pharm., Assistant Professor

Financial Support
Existence of industry support for dual-degree students
It was noted at the time of the writing of this proposal at least one industry initiative in
terms of support for School of Pharmacy-based dual degree programs. Express Scripts
offers four competitive $10,000 scholarships for students pursuing such (see appendix
link for more information).

Tuition and Student Support
In the 12-semester sample plan, students would be classified as professional PharmD
students and pay PharmD tuition for 10 semesters, one semester more than PharmD
students in the traditional (non dual-degree) program. They would have graduate
student classification for two semesters. In the MS-3 (final graduate academic) year,
there is the possibility that they could be employed as teaching assistants by SAS if
funds are available; SAS funding priorities will always be first in supporting their full-time doctoral candidates. In most cases, it is expected that those pursuing the dual PharmD-MS(SAS) would be self-funded throughout both degrees.

**Assessment and Program Review Plan**

It is anticipated that the PharmD-MS(SAS) program would be reviewed in 2019-20, when all of our graduate programs are next scheduled for a ten-year review. The overall training objective for students in the Social & Administrative Sciences Graduate Program is for graduates to obtain scholarly excellence in and contribute professionally to their academic area of expertise. There are a number of program data sources that form the basis for assessment of this objective. For master’s students, these include (a) coursework; (b) annual graduate student reviews done by the SAS graduate faculty; (c) seminar participation and (d) Master’s thesis defense. Together these data sources provide information to assess the level of student progress toward degree completion.

**Learning Objectives** *(Assessment Tools) for the Social & Administrative Sciences (MS) Graduate Program*

1. Demonstrate critical knowledge and in-depth understanding of principles in the core area of the program and the student’s area of expertise (coursework)
2. Identify important research questions, formulate testable hypotheses, and design experiments to test those hypotheses (Master’s thesis defense)
3. Conduct original research that contributes to the student’s field of study (annual graduate student review; Master’s thesis defense)
4. Communicate, both orally and in writing, scientific knowledge and research results effectively to a range of audiences (seminar participation; annual graduate student review; Master’s thesis defense)
5. Apply ethical principles in conducting scientific research (coursework; seminar participation; Master’s thesis defense)
6. Demonstrate ability to teach SAS concepts and principles to a range of audiences (seminar participation; coursework; annual graduate student review)

**Regular Assessment**

The School of Pharmacy collects annual assessment data on its graduate programs that include metrics on both program quality and student progress in line with the School’s strategic plan and program learning objectives. These include quality of the incoming graduate class, matriculation data, student productivity, time to degree, etc. Such data are reviewed by the School’s Academic Planning Council for use in adjusting future strategic planning for its graduate programs.
Relevant Appendices

- AACP Dual Degree programs, across all U.S. schools/colleges of pharmacy, in place for 2013-14:
  [http://www.aacp.org/resources/student/pharmacyforyou/admissions/admissionrequirements/Documents/Table%204.pdf](http://www.aacp.org/resources/student/pharmacyforyou/admissions/admissionrequirements/Documents/Table%204.pdf)
- UW-Madison PharmD degree requirements for class of 2016:
  [http://pharmacy.wisc.edu/sites/default/files/content/education/doctor-pharmacy-program/curriculum/PharmD_worksheet_new_curriculum.pdf](http://pharmacy.wisc.edu/sites/default/files/content/education/doctor-pharmacy-program/curriculum/PharmD_worksheet_new_curriculum.pdf)
- MS(SAS) degree requirements:
- Express Scripts competitive scholarships for students pursuing dual degrees in Schools/Colleges of Pharmacy:
  [http://www.aacp.org/resources/student/financialaid/Pages/ExpressScriptsScholarsProgram.aspx](http://www.aacp.org/resources/student/financialaid/Pages/ExpressScriptsScholarsProgram.aspx)
SAMPLE ACADEMIC PROGRAM
from point of entry into graduate program,
assumed to be 3rd Doctor of Pharmacy (PharmD) (abbreviated DPH-3) year
Example provided below assumes required curriculum for the PharmD class of 2016

Term: FALL
Student Status: PharmD
DPH-3(5th semester)/MS-1(1st semester)
PharmSci 623, Pharmacology III, 3 cr PharmD
PharmSci 638, Nonprescription Medications, 2 cr PharmD
PharmSci 645, Biotechnology & Pharmacogenomics, 2 cr PharmD
PhmPrac 625, Intro to Pharm Practice Experience V, 0cr PharmD
PhmPrac 655, Pharmacotherapy III, 4 cr PharmD
SAS 618, Professional Decision Making in Phm Prac, 2 cr PharmD
SAS 911, Research Seminar in Social & Administrative Pharmacy, 1cr SAS-PharmD
Sociology 360, Stats for Sociologists I, 4cr SAS
Semester Summary: 18 credits; 14 PharmD; 5 SAS (double counting of 1 cr)
Cumulative credits towards PharmD = 145 (see notes below);
Cumulative Credits toward SAS MS: 5
PharmD Professional Electives earned: 1; PharmD Professional Elective Cum Total: 1

Term: SPRING
Student Status: PharmD
DPH-3(6th semester)/MS-1(2nd semester)
PhmPrac 608, Safety & Quality in the Medication Use Sys, 3cr PharmD
PhmPrac 626, Intro to Pharm Practice Experience VI, 2cr PharmD
PhmPrac 656, Pharmacotherapy IV, 4 cr PharmD
SAS 652, Pharmacist Communication: Educational & Behavioral Interventions, 2 cr PharmD
SAS 912, Research Seminar in Social & Administrative Pharmacy, 1cr SAS-PharmD
Sociology 361, Stats for Sociologists II, 3cr SAS
Sociology 357, Methods of Soc Inquiry, 3cr SAS-PharmD
Semester Summary: 18 credits; 15 PharmD; 7 SAS
(double counting of 4 cr; cum double count = 5)
Cumulative credits towards PharmD = 160
Cumulative Credits toward SAS MS: 12
PharmD Professional Electives earned: 4; PharmD Professional Elective Cum Total: 5
Term: SUMMER
Student Status: PharmD
DPH-3(7th semester)/MS-1(3rd semester)
PhmPrac 740, Acute Pharm Clerkship, 7cr PharmD
PhmPrac 741, Ambulatory Pharm Clerkship, 7cr PharmD

Semester Summary: 14 credits; 14 PharmD; 0 SAS
(double counting of 0 cr; cum double count = 5)
Cumulative credits towards PharmD = 174
Cumulative Credits toward SAS MS: 12
Cumulative PharmD Advanced Pharmacy Practice Experience Credits (35 required): 14
PharmD Professional Electives earned: 0; PharmD Professional Elective Cum Total: 5

Term: FALL
Student Status: PharmD
DPH-4(8th semester)/MS-2(4th semester)
SAS 911, Research Seminar in Social & Administrative Pharmacy, 1cr SAS
SAS 711, Evaluation of Pharmaceutical Services, Programs & Policy, 3cr SAS-PharmD
SAS 622, 713, 714, or 715 (Core Principles course required for M.S.; choose one of these 4 courses), 3cr SAS-PharmD

SAS Specialty/Advanced courses (Select in consultation with major professor), 5cr SAS

Semester Summary: 12 credits; 6 PharmD; 12 SAS; (double counting of 6 cr)
(double counting of 6 cr; cum double count = 11)
Cumulative credits towards PharmD = 180
Cumulative Credits toward SAS MS: 24
Cumulative PharmD Advanced Pharmacy Practice Experience Credits (35 required): 14
PharmD Professional Electives earned: 6; PharmD Professional Elective Cum Total: 11

Term: SPRING
Student Status: PharmD
DPH-4(9th semester)/MS-2(5th semester)
PhmPrac 760, Elective Practice Clerkship, 8cr PharmD

Semester Summary: 16 credits; 16 PharmD; 0 SAS
(double counting of 0 cr; cum double count = 11)
Cumulative credits towards PharmD = 196
Cumulative Credits toward SAS MS: 24
Cumulative PharmD Advanced Pharmacy Practice Experience Credits (35 required): 30
PharmD Professional Electives earned: 0; PharmD Professional Elective Cum Total: 11
Term: SUMMER
Student Status: PharmD

DPH-4(10th semester)/MS-2(6th semester)
PhmPrac 760, Elective Practice Clerkship — SAS Research Clerkship, 7cr PharmD
PhmPrac 760, Elective Practice Clerkship (if needed to accomplish prof elective credits), 7cr PharmD
Semester Summary: 14 credits; 14 PharmD; 0 SAS
(double counting of 0 cr; cum double count = 11)
Cumulative credits towards PharmD = 210 (206 required for graduation)

Graduate and exit PharmD program
Cumulative Credits toward SAS MS: 24
Cumulative PharmD Advanced Pharmacy Practice Experience Credits (35 required): 44
PharmD Professional Electives earned: 9 (i.e. 44 less 35 required);
PharmD Professional Elective Cum Total: 20 (16 required)

Term: FALL
Student Status: Graduate

MS-3(7th semester)
SAS 911, Research Seminar in Social & Administrative Pharmacy, 1cr SAS
SAS Specialty/Advanced courses (Select in consultation with major professor), 4cr SAS
SAS 990, Research, cr vary
Semester Summary: 5+ credits; 5+ SAS
Cumulative Credits toward SAS MS: 29+

Term: SPRING
Student Status: Graduate

MS-3 (8th semester)
SAS 990, Research, cr vary (Defend MS Thesis)
Semester Summary: take 990 credits to complete 32 needed as SAS MS minimum;
Cumulative Credits toward SAS MS: Anticipated that 32 minimum would be reached

Graduate and exit MS SAS program

<table>
<thead>
<tr>
<th>PharmD</th>
<th>PharmD required course</th>
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<tbody>
<tr>
<td>SAS-PharmD</td>
<td>SAS M.S. required course proposed to count as professional elective in PharmD program</td>
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<tr>
<td>SAS</td>
<td>SAS M.S. required course</td>
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</tbody>
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Notes:
(1) Sample plan assumes 68 pre-PharmD credits and 63 credits achieved in first two years (first 4 semesters) of PharmD program, for total of 131 credits of point of beginning DPH-3/MS-1 year.
(2) Upon MS admission, between 2nd and 3rd PharmD year, student could have work/study appointment on SAS faculty research projects.
(3) Earning pharmacy internship hours between 2nd and 3rd PharmD year would be recommended to meet minimum pharmacy licensure requirements for the state of Wisconsin. (The actual number of internship hours needed may vary based on total clerkship blocks completed and when).
(4) Dual degree students could be supported with SAS TA appointments during MS-3 year, if available and desired.