Phar 6742: Practice-based Problem Solving
with Evidence-based Methods 1 (of 2)
Spring 2017
1.0 Credit
Syllabus is subject to revision as circumstance warrants. Students will be apprised of such revisions.

Meeting Times & Locations

<table>
<thead>
<tr>
<th>Day</th>
<th>Time</th>
<th>Duluth Room</th>
<th>Twin Cities Room</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fridays</td>
<td>10:10-12:05</td>
<td>410 Lib</td>
<td>WDH 7-135</td>
</tr>
</tbody>
</table>

Note: Class does not meet every week. Please check Moodle for current information.

Course Instructional Team

<table>
<thead>
<tr>
<th>Twin Cities</th>
<th>Duluth</th>
</tr>
</thead>
</table>
| **Course Directors** | **Dr. Julie Johnson**  
Associate Dean for Professional and External Relations  
Associate Professor  
Department of PCHS  
Office: 5-102 Weaver-Densford Hall  
Phone 612-625-1615  
jkjohn@umn.edu | **Dr. Derek Jennings**  
Research for Indigenous Community Health, Outreach Director  
Assistant Professor  
Department of PPPS  
Office: 202 W 2nd St, Duluth, MN 55802  
Phone: 218-726-6063  
Email: dr@umn.edu  
Preferred method of contact: email, phone |
| For the month of February Dr. Jennings will not be available and Dr. Stratton will be the acting course director for Duluth: | **Dr. Tim Stratton**  
Professor  
Department of PPPS  
Office: Life Science 209, UMD  
Phone: 218-726-6018  
Email: tstratto@d.umn.edu  
Preferred method of contact: email |
| **Course Faculty** | **Dr. Meg Little**  
Research for Indigenous Community Health Fellow |

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**COURSE OVERVIEW**

This course is part of a two-semester series.

### End Product
- The end product of the course series is a cogent 15 page research paper based on a pharmacy topic of the student's’ choosing. The writing of these 15 pages occurs over two consecutive semesters.
- Semester 1: Successfully complete Prewriting including formulating a Question, Write the Introduction and Methods sections (form an answerable question, acquire, appraise and apply evidence to answer the question.)
- Semester 2: Successfully write the Results and Discussion sections to complete the research paper and present findings to a College audience.

**Note:** Changing a research paper topic after submission of the research-question assignment requires Course Director permission via email.

### Attendance & Participation
- Students are expected to come to class prepared to fully participate in class discussions by reading assigned articles and viewing assigned presentations prior to class sessions.

### Passing the course
- Students must successfully complete each section of the course (Pre-writing, Introduction and Methods) with a passing grade in order to move on to the next section and ultimately pass the course (e.g., 33.3% of the course grade for each of the three sections).

### Research Paper Grades
- COP faculty will evaluate student deliverables (1) Working Title, Final Research Question, Search Parameters, 3 References (annotated) (2) Introduction section, (3) Complete, polished first half of paper: Cover Page, Introduction, Methods, Reference List. Faculty serving on panels in this course will be appointed by the Department Chairs from the 5 COP departments -- PCHS, ECP, Pharmaceutics, Med Chem, and PPPS -- and will comprise a group of approximately 30 faculty.
- Each paper will be reviewed by one faculty reviewer.
- Other course assignments are graded by TAs, course director and faculty.

### Primary Research
- In order to conduct primary research a student must have permission of an identified faculty adviser. Otherwise NO primary research will be conducted by students for the purpose of this course series.

### Course Goals
1. Foster problem-solving skills in students by gaining experience with primary or secondary scientific research
2. Illustrate how PPS is relevant to the generalist practitioner.
3. Construct a research question and use evidence and/or data to answer these well-constructed questions (i.e., produce a cogent Introduction and Methods sections for a research paper in the first semester and Results and Discussion sections of the paper by the end of the second course
in this series)

Objectives

1. Explain how practice-based problem solving with evidence-based methods can help pharmacists improve patient care.
2. Identify a problem in clinical or scientific practice, formulate a well-constructed question that will frame/guide investigations and determine the methods to respond to or investigate the question.
3. Utilize established methods for identifying, selecting, appraising, and applying literature in response to a defined question.
4. Formulate brief and effective written communications to describe problems and solutions to peers.
5. Demonstrate an ability to effectively verbally present the problem and solutions to peers.
6. Provide effective peer-review.

Primary Research Option

Students who have an established research relationship with a faculty member may choose to complete their research paper under the mentorship of that faculty member - if that faculty member agrees. Student and faculty mentor will sign a contract to confirm this commitment.

Notes on primary research option for FACULTY ADVISERS:
- Students attend classes and complete assignments as described in the syllabus.
- Faculty mentors will assess and submit grades for student mentees at established course milestones.

Connections to Prior Learning

Students will apply the acquiring and appraising they learned in:
- PHAR 6700-Becoming a Pharmacist,
- PHAR 6704- Foundations of Social & Administrative Pharmacy (SAPh)
- PHAR 6706-Foundations of Pharmaceutical Care.

Depending upon the nature of the project ultimately selected by the student, the student may apply the statistics skills they developed in:
- PHAR 6704- Foundations of Social & Administrative Pharmacy (SAPh), and/or the drug or patient care-related knowledge they obtained in their pharmacy courses prior to this course.

Finally, students will apply writing skills - including punctuation and grammar - that they learned in their pre-pharmacy and earlier pharmacy courses, and apply the skills they learned in these earlier courses to organize a scholarly or scientific paper.
## COURSE SCHEDULE
See Moodle for weekly details

<table>
<thead>
<tr>
<th>Date</th>
<th>Title</th>
<th>Notes Due Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Part 1: PRE- WRITING</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Jan 20</strong>&lt;br&gt;<strong>Class</strong></td>
<td>• Introduction to course&lt;br&gt;• What is knowledge? Evidence? What is research? Factors that can impact data collection and interpretation</td>
<td>Prep for following week&lt;br&gt;• Brainstorm ideas individually&lt;br&gt;• Read articles about formulating research question prior to class&lt;br&gt;• Write reflection paper&lt;br&gt;• Submit reflection paper Assessment 1 by Jan27</td>
</tr>
<tr>
<td><strong>Jan 27</strong>&lt;br&gt;<strong>Class</strong></td>
<td>Brainstorm ideas&lt;br&gt;• Brief review of literature&lt;br&gt;• How to formulate the question in light of literature - The iterative process&lt;br&gt;• Creating a working title for your paper&lt;br&gt;• Assessment 1 due - Reflection paper</td>
<td>Prep for following week&lt;br&gt;• Brief review of literature in order to choose topic and formulate question&lt;br&gt;• Students need to look at literature enough to know that it’s a viable idea</td>
</tr>
<tr>
<td><strong>Feb 3</strong>&lt;br&gt;<strong>Class</strong></td>
<td>The Research Question (first hour)&lt;br&gt;<em>DRJ away</em></td>
<td>• In class, present question get feedback from peers in pairs then groups</td>
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<tr>
<td><strong>Feb 10</strong>&lt;br&gt;<strong>No Class</strong></td>
<td>Independent Study&lt;br&gt;<em>DRJ away; TS until 11:15</em></td>
<td>• Submit PreWriting Assignment 2 by Feb 17&lt;br&gt;<strong>Due date changed to 2/20/17 at 23:55</strong>&lt;br&gt;• Working title&lt;br&gt;• Problem statement&lt;br&gt;• Purpose statement&lt;br&gt;• Final research question&lt;br&gt;• Literature Search strategy/parameters&lt;br&gt;• 3 references annotated</td>
</tr>
<tr>
<td><strong>Feb 17</strong>&lt;br&gt;<strong>Class</strong></td>
<td>The Literature (Frank Sayer)&lt;br&gt;• Flowchart (M. Little)&lt;br&gt;• Synthesizing literature into the research paper&lt;br&gt;• Reference management systems and resources available online&lt;br&gt;• Assessment 2 due 2/20 (PreWriting)&lt;br&gt;<em>DRJ away</em></td>
<td>Faculty Reviews expected by Feb 28&lt;br&gt;Student revision due Mar 7</td>
</tr>
</tbody>
</table>
## Part 2: INTRODUCTION

### Feb 24
**Class**
- Writing an Introduction & Abstracts (first hour)  
  *DRJ away; MML until 11:15*

- **Write Introduction Section according to template using JAMA formatting**
- **10 References (5 Primary) submitted with the Introduction section and again as the required Reference list in the Methods Section**
- **Use introductions and Methods sections of articles from your literature search as writing examples for your own work**
- **IRB Quiz, Assessment 3 due March 10**

### Mar 3
**No Class**
- Independent Study (Reading as assigned)

### Mar 10
**Class**
- **IRB**  
  - Levels of IRB review, exemption categories, required training and elements required for review  
  - **Assessment 3, IRB Quiz due March 10**

### Mar 13-17
**SPRING BREAK**
- Submit Introduction by Mar 24

### Mar 24
**No Class**
- **Independent Study**
- **Assessment 5 due, Introduction**
- Faculty Reviews expected by Apr 3  
- Student revision due Apr 10

## Part 3: METHODS

### Mar 31
**No Class - Online Module**
- How to write a Methods section  
  - Sign-Up for Apr 7 writing clinic by Apr 3  
    *(See Choice Poll on Moodle)*

- **Write Methods Section according to template using JAMA formatting**

### Apr 7
**No Class**
- **Independent Study**
- **Writing clinic - by sign-up (first hour)**

### Apr 14
**No Class**
- Independent Study  
  *MML away*

### Apr 21
**No Class**
- **Independent Study**

### Apr 28
**No Class**
- **Assessment 7 due**  
- **Course Closes**

- Faculty Reviews expected by May 8  
- Student revision due May 12
Students must successfully complete each part with a passing grade in order to move on to the next section and ultimately pass the course (e.g., 33.3% for each of the three sections - Pre-writing, Introduction and Methods.) Assessments (1-4), (5-6) and (7-8) (i.e., Parts 1, 2 &3) are each worth 33.3% of the course grade. No partial grades will be given for incomplete course parts.

Detailed descriptions of these assignments can be found on Moodle.

<table>
<thead>
<tr>
<th>#</th>
<th>New Assessment</th>
<th>Points /100</th>
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<tbody>
<tr>
<td>1</td>
<td>Students write a reflection paper summarizing their personal research epistemology and how that compares and or contrasts with the expectations/requirements of western research epistemologies (i.e., practice-based problem solving with evidence-based methods.) as discussed in class. (1 pg., double-spaced, informal writing)</td>
<td>Part 1: Pre-writing</td>
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<td>1</td>
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<td>4</td>
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<td></td>
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<td>= 33.3%</td>
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<td><strong>Note:</strong> Prompts for student writing are included.</td>
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<tr>
<td>2</td>
<td>Prewriting section</td>
<td></td>
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<tr>
<td>3</td>
<td>Online IRB quiz</td>
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<tr>
<td>4</td>
<td>Class attendance and participation Part 1</td>
<td></td>
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<tr>
<td>5</td>
<td>Introduction Section</td>
<td>Part 2: Introduction</td>
</tr>
<tr>
<td>6</td>
<td>Class attendance and participation Part 2</td>
<td>5</td>
</tr>
<tr>
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<td>6</td>
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<td></td>
<td></td>
<td>= 33.3%</td>
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<tr>
<td>7</td>
<td>Assessment 7: Methods section as part of</td>
<td>Part 3: Methods</td>
</tr>
<tr>
<td></td>
<td>● As one polished paper:</td>
<td>7</td>
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<tr>
<td></td>
<td>○ Cover page</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>○ Introduction</td>
<td>= 33.3%</td>
</tr>
<tr>
<td></td>
<td>○ Methods</td>
<td></td>
</tr>
<tr>
<td></td>
<td>○ References</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Class attendance and participation Part 3</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>If a student does not initially pass a section they must remediate until they pass the section and the course. The second part of this course is built on successful completion of all parts (pass) of the first course.</td>
<td>= 100%</td>
</tr>
</tbody>
</table>

**Note:** Final A/F grade will be submitted for PPS1 (no K, X, etc.)
Grades
Grades are provided in this course as one way to monitor your learning. The grade you will earn is based on your scholarly and professional development performance. Students begin the course/assignments with an “A” grade and if performance drops demonstrably below “A” level performance, adjustments are made by the instructor, using rubrics which delineate expectations.

Grades are not meant to make you feel inadequate; they are meant to help you learn by identifying areas for you to concentrate on moving forward. Whenever possible, take your grade in the spirit that it is offered: Constructive feedback that will provide milestone progress checks in your learning.

Other ways you can monitor your learning:
- Revisit the course objectives, and reflect honestly about what you are learning and where you might need help. Take steps to get that help.
- Talk with your peers and compare your learning with theirs. Use your area of strength to help others; and ask others to help you. Much learning happens via conversation-- either formal or informal.
- Check in with your course instructional team (instructors, teaching assistants, course coordinators) about areas of concern.
- Be honest about the effort you are putting forth in the course, and areas for improvement.

Grading Policies:
http://www.policy.umn.edu/Policies/Education/Education/GRADINGTRANSCRIPTS.html

Course Letter Grades

<table>
<thead>
<tr>
<th>Grade</th>
<th>A</th>
<th>A-</th>
<th>B+</th>
<th>B</th>
<th>B-</th>
<th>C+</th>
<th>C</th>
<th>C-</th>
<th>D</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>100-93</td>
<td>92-90</td>
<td>89-87</td>
<td>86-83</td>
<td>82-80</td>
<td>79-77</td>
<td>76-73</td>
<td>72-70</td>
<td>69-60</td>
<td>59-0</td>
</tr>
</tbody>
</table>

**Minimum Passing Level.** Per University and College Policy, students who receive a grade below D in this course must successfully repeat the course before advancing to courses which require this course as a prerequisite.

**Note:** Students must successfully complete each of three parts with a passing grade in order to move on to the next section and ultimately pass the course (i.e., 33.3% for each of the three sections: Pre-writing, Introduction and Methods.) No partial grades will be given for incomplete course parts.

**Attendance Policy.** Students are expected to attend every class for which they are registered. Students are expected to attend classes on the campus where they are enrolled. Full attendance is expected for the face-to-face class sessions. However, reasonable issues such as illness, natural disasters, or acts of Nature are sufficient to warrant an absence. Students who miss a class period (whether an excused absence or not) will be required to demonstrate to the course directors that the student meets the learning objectives for the missed class session. Students are responsible for arranging such demonstrations of competency with the course director on their respective campus.
**Honor Code.** Academic misconduct is any unauthorized act which may give a student an unfair advantage over other students, including but not limited to: falsification, plagiarism, misuse of test materials, receiving unauthorized assistance and giving unauthorized assistance. Instructors or a fellow student may report academic misconduct during an exam to the Course Directors and the Honor Council for investigation.

**University of Minnesota and College of Pharmacy Policy Reference (Central Syllabus)** This page includes all required UMN and CoP policies, e.g., Academic Freedom; Copyright; Course Evaluations; Disability Accommodations; FERPA, etc.

**Technology Requirements and Help**
The University of Minnesota computer requirements are listed here:

- [http://www1.umn.edu/moodle/start/technical.html](http://www1.umn.edu/moodle/start/technical.html)
- Students are required to bring laptop computers or electronic tablets to class each day to conduct Internet searches of course-related topics as required during class.
- Each day, students are required to bring a device to class that is capable of interacting with the classroom’s audience response system.
- **Technology Help, Duluth:** 218-726-8847 itsshelp@d.umn.edu
- **Technology Help, Twin Cities:** 612-301-4357 help@umn.edu

**Course Materials**
- Required course readings are provided on Moodle.
- Additional optional resources will be listed and linked where possible
# Final Paper Required Format At the end of the course sequence

<table>
<thead>
<tr>
<th>Section</th>
<th>Should Include ...</th>
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</table>
| Format Specifications | ● 2500 words for the body of the paper (Introduction, Methods, Results, Discussion/Conclusion) Figures and tables do not count towards 2500 word count.  
● 12 point Times New Roman, double spaced, 1” margins  
● Proper JAMA format, headers, references in-text and list  
● Superscripts and subscripts used appropriately and pages numbered consecutively  
● Abbreviations appropriately defined  
● No spelling or punctuation errors |
| Title Page | Title, author, course number, date of submission, advisor name if applicable, and copyright permission if applicable. |
| Table of Contents & Table of Figures & Tables | ● All sections listed with same capitalization and punctuation used as in text; beginning page number for each section  
● List all Figures together, and all Tables together. Whichever, has more items is listed first. Where equal numbers of Figures and Tables it does not matter which is listed first. |
| Abstract | 250 words |
| Acknowledgments | Optional |
| Introduction | ● Review of literature  
● Statement of problem including its significance to pharmacy  
● Research Question  
● Purpose of study  
● Rationale  
● Definition of terms |
| Methods | ● Study design, description of database or population, exclusion/exclusion criteria, study site, instrumentation, analytical methods utilized.  
● **Primary projects** - detailed methods used to collect and analyze data, IRB approval, participants, sample size, etc. |
| Results (In PPS2) | ● Proper presentation of the pertinent results in a clear, logical and organized manner  
● Appropriate use of tables and figures |
| Points to consider when evaluating Figures/Tables: | ● Tables and figures add value to the paper  
● Only one figure/table per page  
● Tables and figures are sufficient size  
● All values have appropriate units,  
● Figures/tables are computer-generated if possible (i.e. not hand-drawn), |
<table>
<thead>
<tr>
<th>Discussion (In PPS2)</th>
<th>Legend for each figure or table appears on the same page as the figure or table.</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Concise summary of data/results focused on significant findings</td>
<td></td>
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<tr>
<td>- Description of how findings confirm/depart from those of other studies</td>
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<tr>
<td>- Limitations of the research</td>
<td></td>
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<tr>
<td>- Opportunities for further research</td>
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</tr>
<tr>
<td>- Conclusion can have its own header</td>
<td></td>
</tr>
<tr>
<td>References</td>
<td></td>
</tr>
<tr>
<td>- 10 references</td>
<td></td>
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<tr>
<td>- At least 5 primary resources and no review articles</td>
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</tbody>
</table>
Dear Faculty:

As you may recall, the PPS1 course (formerly Colloquium) included a primary research option for students. In keeping with that option students - who have an established research relationship with a faculty member - may ask faculty to be their adviser for the paper they are required to write for this course (spring 2017). Faculty are under no obligation to take on students as advisees.

Please note that all students, including those who participate in this primary research option, are required to meet course criteria and quality. The difference is that with this option students are doing primary research with and being evaluated by a faculty adviser.

Please review the following options so that you can respond to students accordingly:

<table>
<thead>
<tr>
<th>If ...</th>
<th>Then ...</th>
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</table>
| A faculty member agrees to act as a student’s adviser for the purposes of completing PPS1 | • The faculty member will assess, supervise revision as needed, and submit grades for student mentees at established course milestones for this and the second course in the sequence (PPS2).  
• The faculty member and student will sign a course contract establishing this relationship at the beginning of the spring semester.  
• Students will still attend course classes and abide by course requirements described in the syllabus. (This does not represent any increased burden on the student; it just ensures that they are meeting the same requirements as their peers - only under the guidance of an adviser versus a course reviewer). |
| A faculty member is unable to accommodate a student’s request for the primary research option | • The faculty member will decline and communicate this directly to the student. |
● The student will complete regular course requirements. No primary research will be permitted without a faculty adviser.

A faculty adviser IS already assigned as one of the 30 course reviewers for the course -

The student will be assigned as one of the faculty adviser/reviewer’s cases. The workload for faculty adviser/reviewers will not have a higher workload than regular course reviewers. (i.e., this isn’t an add on task with respect to the reviewers workload.)

A faculty adviser IS NOT assigned as one of the 30 course reviewers

The mentor will record their efforts in the Student Research Advising section on the Faculty Annual Report (FAR).

Student spring 2017 deliverables:

**Prewriting section**: Working title, Final research question, Search parameters, 3 references annotated  
February 17

**Introduction section**  
March 24

**Methods**: Complete polished first half of paper: Cover page, Introduction, Methods, Reference list. (Results and Discussion will be created in subsequent course).  
April 28
PPS1 Primary Research Option – Learning Contract

We, ________________________________ and _____________________________________

faculty adviser name and student name,

have an established relationship for conducting primary research. We agree to participate in the primary research option for PPS1 and PPS2 in accordance with the requirements of the course syllabus.

- Faculty advisers will supervise the student’s successful completion of - and submit grades for - PPS1 course milestones. Please note that all students, including those who participate in this primary research option, are required to meet course criteria and quality. The difference is that in the primary option students are doing primary research with and being evaluated by their faculty adviser.

- Faculty advisors will ensure that each milestone meets the course requirements:
  - Prewriting: Working title, Final research question, Search parameters, 3 references annotated (February 17)
  - Introduction section (March 24)
  - Methods: Complete polished first half of paper: Cover page, Introduction, Methods, Reference list. (April 28)
  - Results and Discussion sections will be completed in subsequent course, PPS2.

- The faculty adviser will mentor the student (supervise successful completion of - and submit grades for) both semesters of this course sequence (PPS1 & PPS2).

- The faculty adviser is responsible for ensuring that the student’s work complies with the IRB, if applicable, and, ensures any necessary training.

- Students are committed to the agreed upon research project for both semesters of the course sequence.

- Students will complete all of the course requirements as described in the syllabus which includes class attendance, quizzes, brief reflections, etc. In addition, students will complete any necessary training as instructed by their faculty adviser.