

PHA5040

Pharmacogenomic Literature Assessment

Fall 2022

1 Credit Hour – [Satisfactory/Unsatisfactory]

Students will further develop the knowledge and skills necessary to appraise peer-reviewed pharmacogenomic literature. This course will provide opportunities to critically evaluate literature focused on both discovery and implementation of gene-drug pairs, become informed about research developments in pharmacogenomics, and further develop presentation skills in a seminar format.

Teaching Partnership Leader

Caitrin McDonough, Ph.D., M.S.

- Email: caitrimcdonough@ufl.edu
- Phone: 352-273-6435

Office Hours: Please see the Canvas course site for posted office hours

See Appendix A. for Course Directory of Faculty and Staff Contact Information.

Entrustable Professional Activities

This course will prepare you to perform the following activities which the public entrusts a Pharmacist to perform:

11. Educate patients and professional colleagues regarding the appropriate use of medications.
 - ST11.1. Lead a discussion regarding a recently published research manuscript and its application to patient care.
12. Use evidence-based information to advance patient care.
 - ST12.1 Retrieve and analyze scientific literature to make a patient-specific recommendation.
 - ST2.0. Perform

Course-Level Objectives

Upon completion of this course, the student will be able to:

1. Retrieve published medical literature for use in research, design/planning of a clinical implementation, and clinical decision-making related to pharmacogenomics.
2. Critique a pharmacogenomic journal article by analyzing the purpose, methods, results, and clinical significance of the primary literature article.
3. Evaluate analytical questions during a peer review of a pharmacogenomic article.
4. Use appropriate presentation skills when presenting a journal article to peers.
5. Use appropriate communication skills and professional affective skills when discussing pharmacogenomic journal articles with peer students and faculty.
6. Evaluate pharmacogenomic literature to identify gene-drug pairs that may have sufficient evidence for implementation into clinical practice.

Course Pre-requisites

Successful completion of Blocks 1-12 of the Doctor of Pharmacy curriculum including milestones

Course Co-requisites

None.

Course Outline

See Appendix. Please routinely check your campus calendar and the Canvas course site for any messages about changes in the schedule including meeting dates/times, deadlines, and room changes.

Required Textbooks/Readings

There are no required textbooks for this course. The following articles are required reading that can be accessed online and will be provided in Canvas:

1. Attia J, et al. How to use an article about genetic association: A: Background concepts. *JAMA*. 2009;301(1):74-81.
2. Attia J, et al. How to use an article about genetic association: B: Are the results of the study valid? *JAMA*. 2009;301(2):191-7.
3. Attia J, et al. How to use an article about genetic association: C: What are the results and will they help me in caring for my patients? *JAMA*. 2009;301(3):304-8.

Use [UF VPN to access UF Libraries Resources](#) when off-campus.

The UF HSC library staff can assist you with questions or issues related to accessing online library materials. For assistance contact your College of Pharmacy librarian or visit the [HSC Library Website](#) at this URL: <http://www.library.health.ufl.edu/>

Suggested Textbooks/Readings

Suggested readings will be posted on Canvas.

Other Required Learning Resources

None

Materials & Supplies Fees

None

Student Evaluation & Grading

Evaluation Methods and How Grades are calculated.

[The Canvas® gradebook will be set-up using the percentages below to compute the grade.]

Table 1.1 Evaluation and Grading

Assessment Item	Grade Percentage
Scientific Article Presentation (See Appendix C for Rubric)	40%
Quizzes (4 @ 5% each)	20%
Course Participation – <i>Article selection and questions for presenters</i> (See Appendix D for Rubric)	10%
Final Exam (written)	30%
Total	100%

Table 1.2 Grading Scale

Percentage	Letter Grade
92.50-100%	A
89.50-92.49%	A-
86.50-89.49%	B+
82.50-86.49%	B
79.50-82.49%	B-
76.50-79.49%	C+
72.50-76.49%	C
69.50-72.49%	C-
66.50-69.49%	D+
62.50-66.49%	D
59.50-62.49%	D-
< 59.50%	E

Rounding of grades:

Final grades in Canvas will be rounded to the 2nd decimal place. If the decimal is X.495 or higher, Canvas will round the grade to X.50. The above scale depicts this policy and grades are determined accordingly. Grade assignment is made using this policy and NO EXCEPTIONS will be made in situations where a student's grade is "close."

Educational Technology Use

The following technology below will be used during the course and the student must have the appropriate technology and software.

1. ExamSoft™ Testing Platform
2. Canvas™ Learning Management System

For technical support, navigate to [Educational Technology and IT Support Contact Information](http://curriculum.pharmacy.ufl.edu/current-students/technical-help/) at this URL: <http://curriculum.pharmacy.ufl.edu/current-students/technical-help/>

Pharm.D. Course Policies

The Policies in the following link apply to this course. Review the General [Pharm.D. Course Policies](http://curriculum.pharmacy.ufl.edu/current-students/course-policies/) carefully, at this URL: <http://curriculum.pharmacy.ufl.edu/current-students/course-policies/>

Makeup Assignments

Makeup assignments may be required for excused absences from all Active Learning Sessions. Students will be required to complete the makeup assignment within one week of the missed session.

Late Assignments

Late assignments may be accepted on a case-by-case basis. Please contact your course leader in advance regarding late assignment submissions.

Respect for Diversity

The University of Florida College of Pharmacy strives to stimulate a culture that promotes diversity and inclusion within an exceptional community of students, faculty, and staff. It is our intent that students from all diverse backgrounds and perspectives be well served by this course, that students' learning needs be addressed both in and out of class, and that the diversity that students bring to this class be viewed as a resource, strength, and benefit.

We intend to present materials and activities that are respectful of diversity: gender, sexuality, disability, age, socioeconomic status, ethnicity, race, and culture. Your suggestions are encouraged and appreciated. Please let us know ways to improve the course's effectiveness for you personally or for other students or student groups.

If any of our class meetings conflict with any of your religious events, an excused absence will be provided when requested using the standard UF COP process as detailed in the [UF COP Course policies](#).

If you feel that you have experienced or witnessed any bias/treatment that falls short of these expectations, you may submit a report through the UF [COP Student Mistreatment Report](#).

Course Evaluation Process

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

Appendix A. Course Directory

Teaching Partnership Leader/Course Director(s):

Caitrin McDonough, Ph.D., M.S.

- Email: caitrimcdonough@ufl.edu
- Phone: 352-273-6435

Office Hours: Please see the Canvas course site for posted office hours

Questions to Ask:

- Concerns about performance
- Guidance when there are performance problems (failing grades)
- General questions about content

Teaching Assistants:

Brian Gawronski

- Email: briangaw@ufl.edu

Ikenna (Ike) Unigwe

- Email: i.unigwe@ufl.edu

Instructional Designer:

Skylar Johnson, M.A.

- Email: skylarjohnson@cop.ufl.edu
- Phone: 352-273-5719

Academic Coordinator Gainesville Campus:

Hanna Stallard

- Email: hstallard@ufl.edu
- Office: HPNP 4312
- Phone: 352-273-6312

[Absence Ticket 3PD](#)

Educational Coordinators

Katie Orben

- Email: korben06@ufl.edu
- Office: Jacksonville Campus
- Phone: (904) 244 - 9590

Andrea M Arredondo

- Email: aarredondo1@cop.ufl.edu
- Office: Orlando Campus

- Phone: (407) 313 - 4087

Questions to Ask:

- Issues related to course policies (absences, make up exams, missed attendance)
- Absence/tardy requests (Only the Academic Coordinator handles absence requests)
- Questions about dates, deadlines, meeting place
- Availability of handouts and other course materials
- Assignment directions
- Questions about grade entries in gradebook (missing grades, incorrect grade)
- Assistance with ExamSoft® (Distance campus students may contact the Educational Coordinator for use of Examplify and assistance during exams. The Academic Coordinator is the contact person for issues related to grading and posting of ExamSoft grades.)

Appendix B: Course Outline:

Date / Time [Recommended for Independent Study]	Mod #	Activity	Activity Title	Contact Time (hr)	Objectives	Responsible
11/30/22		Video Other	Welcome to the course			Caitrin McDonough
	1	Module	Critical Appraisal of Pharmacogenomic Literature			Caitrin McDonough
11/30/22	1.1	Lecture Video	Watch: Pharmacogenomic Research	0.5	1-2, 6	Caitrin McDonough
11/30/22	1	Reading	How to Use an Article About Genetic Association: A: Background and Concepts (Attia J, et al. 2009)	0.5		
11/30/22	1	Reading	How to Use an Article About Genetic Association: B: Are the Results of the Study Valid? (Attia J, et al. 2009)	0.5		
11/30/22	1	Reading	How to Use an Article About Genetic Association: C: What are the Results and Will They Help Me in Caring for my Patients? (Attia J, et al. 2009)	0.5		
12/1/22 @ 12pm- 1:50pm		Active Learning Session -- Zoom	Active Learning Session 1: Pharmacogenomic Journal Club	2	1-6	Caitrin McDonough
12/01/22		Quiz (In Class)	Quiz 1			Caitrin McDonough
12/02/22	1.2	Lecture Video	Watch: Journal Club Presentation and Considerations in Pharmacogenomic Research	0.75		Caitrin McDonough
12/5/22 at 11:59pm		Assignme nt (Graded)	Submit journal club article for approval via discussion board		1, 5	Caitrin McDonough
12/09/22		Reading	Selected Readings for Article Presentations	2	1-6	Caitrin McDonough
12/12/22 @ 12pm- 1:50pm		Active Learning Session -- Zoom	Active Learning Session 2: Pharmacogenomic Journal Club	2	1-6	Caitrin McDonough
12/12/22		Quiz (In Class)	Quiz 2			Caitrin McDonough
12/12/22		Reading	Selected Readings for Article Presentations	2	1-6	Caitrin McDonough
12/13/22 @ 12pm- 1:50pm		Active Learning Session -- Zoom	Active Learning Session 3: Pharmacogenomic Journal Club	2	1-6	Caitrin McDonough

Date / Time [Recommended for Independent Study]	Mod #	Activity	Activity Title	Contact Time (hr)	Objectives	Responsible
12/13/22		Quiz (In Class)	Quiz 3			Caitrin McDonough
12/13/22		Reading	Selected Readings for Article Presentations	2	1-6	Caitrin McDonough
12/14/22 @ 12pm-1:50pm		Active Learning Session -- Zoom	Active Learning Session 4: Pharmacogenomic Journal Club	2	1-6	Caitrin McDonough
12/14/22		Quiz (In Class)	Quiz 4			Caitrin McDonough
12/16/22 @ 1pm-4pm		Exam	Exam: Written Appraisal of an Article		1-6	Caitrin McDonough
				16.75		

Appendix C: Rubric for Assessing Student Presentation of Scientific Articles

Key: 24 points = 100%; 23 = 97%; 22 = 94%; 21 = 91%; 20 = 88%; 19 = 85%; 18 = 82%; 17 = 79%; 16 = 77%; 15 = 74%; 14 = 71%; 13 = 68%; 12= 65%; 11=62%; 10 = 59%; 9 = 56%; 8 = 46%; 7 = 36%; 6 = 26%; 5 = 16%; 4 = 6%; 3 = 3%; <2 = 0%

Study Overview					
Introduction	<ul style="list-style-type: none"> Authors' affiliation/study support Study objective(s) and rationale Quality of journal 	Accurately and completely reported ALL of the relevant intro components (2 points)	Accurately and completely reported MOST of the relevant intro components (1 point)	Did not accurately and completely report MOST of the relevant intro components (0 points)	2
Methods					
Methods- Design	<ul style="list-style-type: none"> Case-control, cohort, controlled exp, etc. Type of Design (cross-over, parallel, etc.) Type of assignment use Blinding 	Accurately and completely reported ALL of the relevant study design and patient/subject components (2 points)	Accurately and completely reported MOST of the relevant study design and patient/subject components (1 point)	Did not accurately and completely report MOST of the relevant study design and patient/subject components (0 point)	2
Methods- Patients/Subjects	<ul style="list-style-type: none"> How enrolled/from where? Inclusion/exclusion criteria # enrolled per group 				
Methods- Treatment Regimens	<ul style="list-style-type: none"> Treatments used Dosages/administration Therapy duration 	Accurately and completely reported ALL of the relevant treatment regimens, outcome measures, data handling and statistics components (4 points)	Accurately and completely reported MOST of the relevant treatment regimens, outcome measures, data handling and statistics components (3 point)	Did not accurately and completely report MOST of the relevant treatment regimens, outcome, data handling and statistics components (1 points)	4
Methods- Outcome Measures	<ul style="list-style-type: none"> Primary Measure Secondary Measures 				
Methods- Data Handling	<ul style="list-style-type: none"> Intention to Treat, per protocol, etc. # lost to follow up Reasons for dropouts 				
Methods- Statistics	<ul style="list-style-type: none"> Tests Used Power of study 				
Results					
Results		Accurately and completely	Accurately and completely reported	Did not accurately and completely	2

<ul style="list-style-type: none"> Results for each outcome measure Confidence intervals P-values Compliance Adverse events <p>Conclusion</p> <ul style="list-style-type: none"> Authors' conclusion(s) 	reported ALL of the relevant results and conclusion components (2 points)	MOST of the relevant results and conclusion components (1 point)	report MOST of the results and conclusion components (0 points)		
Study Conclusion					
Clear, Concise Conclusion Stated	Conclusion summarized accurately and completely all of the following key points to be taken from study (which reflected study limitations); drug's role in therapy or clinical practice implications; AND need for any further research in area (3 points)	Conclusion did not summarize accurately and completely ONE of the following key points to be taken from study; drug's role in therapy or clinical practice implications; or the need for any further research in area (2 points)	Conclusion did not summarize accurately and completely TWO of the following key points to be taken from study; drug's role in therapy or clinical practice implications; or the need for any further research in area (1 points)	Failed to give conclusion OR conclusion completely inaccurate (0 points)	___/3
Applicability					
List strengths and limitations of study	Multiple strengths and limitations of the study (2 points)	Strengths and limitations of the study addressed, but did not emphasize the most significant strengths or limitations (1 points)	Strengths and limitations of the study not addressed (0 points)		___/2
Student recommends how study and results should change current pharmacy practice Examples of questions to address include: How will I change my practice based on results? If not why? E.g. poorly designed study, results showed no difference to standard of care, etc	Student appropriately recommends how study will change practice and provides thorough explanation of why or why not (3 points)	Student recommends how study will change practice but doesn't thoroughly explain why or why not (2 points)	Student does not discuss how the study results will change their practice nor provide an appropriate recommendation for change in practice (0 points)		___/3
Presentation Skills					
Speaking Style, Distractors (um,	Spoke clearly, easy to understand, very few distractors, maintained	Difficult to hear some of the presentation, some distractors used,	Difficult to hear/understand, distractors used		___/3

like...), Eye Contact	good eye contact throughout (3 points)	occasionally made eye contact (2 points)	throughout, read presentation from notes (1 points)	
Timing (not including questions)	16 to 20 minutes (3 points)	<16 min or >20 mins (1 points)		<u> </u> / 3
Total Score				<u> </u> / 24 pts

Adapted from Abate MA, Blommel ML 2007 | Created 8/2016 by Smith KJ, Patel P and Hatton R| Edited by J Duarte 9/2021

Appendix D: Rubric for Assessing Student Questions for Scientific Article Presenters

Key: 3 points = 100%; 2 = 75%; 1 = 50%; 0 = 0%;

Question				
Original and indicative of depth of understanding of concepts presented in the article; does not cover topic already required in presentation or already asked (3 points)	Original and indicative of familiarity with article; does not cover topic already required in presentation or already asked (2 points)	Generic question or question is similar to a previously asked question (1 point)	Does not ask a question or question is not appropriate (0 points)	_ / 3