

11/17/2020 11:11 AM

# PHA5040: Pharmacogenomic Literature Assessment

Fall 2020

*1 Credit Hour – Satisfactory/Unsatisfactory*

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Further develops 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.

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## Teaching Partnership Leader

Julio D. Duarte, PharmD, PhD

- Email: [juliod@cop.ufl.edu](mailto:juliod@cop.ufl.edu)
- Office: PG-21/GNV
- Phone: 352-273-8132
- Office Hours: Please see 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:

Information Master Domain

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.

11/17/2020 11:11 AM

## 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 required

## Course Outline

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

Date and Time	Activity	Unit Topic	Contact Time [hr.]	Responsible	Objectives
	Module	Critical Appraisal of Pharmacogenomic Literature		Julio Duarte	
11/30/20	Video Lecture	Watch: Course Overview and Expectations	0.25	Julio Duarte	1-2, 6
11/30/20	Video Lecture	Watch: Pharmacogenomics Research	0.5	Julio Duarte	1-2, 6
12/1/20	Video Lecture	Watch: Journal Club Presentation and Considerations in Pharmacogenomic Research	0.75	Julio Duarte	1-2, 6
12/2/20 at 3:00-5:00pm via ZOOM	Active Learning	Active Learning Session 1:	2	Julio Duarte Cameron Thomas	1-6

11/17/2020 11:11 AM

	Session-- Web	Pharmacogenomic Journal Club			
	Quiz In-class Graded	Quiz 1		Julio Duarte	
DUE 12/3/20 at 11:59pm	Assignment Graded	Submit journal club article for approval via Discussion Board		Julio Duarte	1, 5
12/10/20 at 3:00-5:00pm via ZOOM	Active Learning Session-- Web	Active Learning Session 2: Pharmacogenomic Journal Club	2	Julio Duarte Amanda Elchynski	1-6
	Quiz In-class Graded	Quiz 2		Julio Duarte	
12/11/20 at 3:00-5:00pm via ZOOM	Active Learning Session-- Web	Active Learning Session 3: Pharmacogenomic Journal Club	2	Julio Duarte Cameron Thomas	1-6
	Quiz In-class Graded	Quiz 3		Julio Duarte	
12/14/20 at 3:00-5:00pm via ZOOM	Active Learning Session-- Web	Active Learning Session 4: Pharmacogenomic Journal Club	2	Julio Duarte Amanda Elchynski	1-6
	Quiz In-class Graded	Quiz 4		Julio Duarte	
DUE 12/14/20 at 11:59pm	Assignment Graded	Center for Pharmacogenomics and Precision Medicine Journal Club synopsis and insight submission	1	Julio Duarte Cameron Thomas Amanda Elchynski	5
12/16/20 at 1:00-4:00pm	Exam	Exam: Written Appraisal of an Article	3	Julio Duarte	1-6
			13.5		

## 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:
  - Attia J, et al. How to use an article about genetic association: A: Background concepts. *JAMA*. 2009;301(1):74-81.
  - 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.

11/17/2020 11:11 AM

- 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.
- The journal articles selected for presentation discussed during the sessions will be selected by the student from the primary literature and may be accessed through the UF Health Sciences Center Library.
- 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

None

## Other Required Learning Resources

None

## Materials & Supplies Fees

None

## Submission of Course Materials and Late Assignments

All quizzes and assignment submissions will be completed in Canvas. Technology such as Lock-down browser, iThenticate, and Turn-it-in may be used to encourage the individual completion of these materials.

All course materials are due by the deadlines posted in Canvas and the course outline. Late submissions will be accepted in Canvas (with a 50% grade reduction) up to 2 days after the deadline. Once the submission link closes in Canvas, submissions will no longer be accepted.

## Student Evaluation & Grading

*Evaluation Methods and How Grades are calculated*

This course is pass/fail. In order to pass the course, you must receive an overall course grade of **69.50%**. The Canvas© gradebook will be set-up using the percentages below to compute the grade.

11/17/2020 11:11 AM

<b>Assessment Item</b>	<b>Grade Percentage</b>
<i>Scientific Article Presentation (for rubric see Appendix B)</i>	35%
<i>Quizzes - 4 @ 5% each</i>	20%
<i>Course Participation – Article selection and questions for presenters (for rubric see Appendix C)</i>	10%
<i>Center for Pharmacogenomics and Precision Medicine Journal Club attendance (for rubric, see Appendix D)</i>	5%
<i>Final Exam</i>	30%
<b>Total</b>	<b>100%</b>

Table 1. Grading Scale

### Rounding of grades:

Final grades in Canvas will be rounded to the 2<sup>nd</sup> 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."

### Percentage Range 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

## 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/>

11/17/2020 11:11 AM

# Appendix A. Course Directory

## Teaching Partnership Leader/Course Director:

Julio D. Duarte, PharmD, PhD

Email: [juliod@cop.ufl.edu](mailto:juliod@cop.ufl.edu)

Office: PG-21/GNV

Phone: 352-273-8132

Office Hours: Please see 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 Partnership Members:

Amanda Elchynski, PharmD

Email: [aelchynski@cop.ufl.edu](mailto:aelchynski@cop.ufl.edu)

Cameron Thomas, PharmD

Email: [camerondthomas@cop.ufl.edu](mailto:camerondthomas@cop.ufl.edu)

## Instructional Designer:

Julie Thomas, M.Ed.

Email: [julie.thomas@ufl.edu](mailto:julie.thomas@ufl.edu)

Office: HPNP 4309

Phone: 352-273-9492

## Academic Coordinator:

Misti Merrill

Email: [mmerrill@cop.ufl.edu](mailto:mmerrill@cop.ufl.edu)

Office: HPNP 4312

Phone: 352-273-5617

Absence/Tardy Email: [absent2pd@cop.ufl.edu](mailto:absent2pd@cop.ufl.edu)  
or [absent3pd@cop.ufl.edu](mailto:absent3pd@cop.ufl.edu) (course policy site)

## Educational Coordinators:

McKenzie Wallen

Email: [mwallen@cop.ufl.edu](mailto:mwallen@cop.ufl.edu)

Office: Jacksonville Campus

Iverta Allen

Email: [iallen1@cop.ufl.edu](mailto:iallen1@cop.ufl.edu)

Office: Orlando Campus

### Questions to Ask:

- Issues related to course policies (absences, make up exams, missed attendance)
- Absence/tardy requests (Only the Academic Coordinator handles absence requests)

11/17/2020 11:11 AM

- 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 Exemplify and assistance during exams. The Academic Coordinator is the contact person for issues related to grading and posting of ExamSoft grades.)

11/17/2020 11:11 AM

## Appendix B: Rubric for Assessing Student Presentation of Scientific Articles

**Key:** 24 = 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				
<b>Introduction</b> <ul style="list-style-type: none"> <li>• Authors' affiliation/study support</li> <li>• Study objective(s) and rationale</li> <li>• Quality of journal</li> </ul>	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				
<b>Methods- Design</b> <ul style="list-style-type: none"> <li>• Case-control, cohort, controlled exp, etc.</li> <li>• Type of Design (cross-over, parallel, etc.)</li> <li>• Type of assignment use</li> <li>• Blinding</li> </ul> <b>Methods- Patients/Subjects</b> <ul style="list-style-type: none"> <li>• How enrolled/from where?</li> <li>• Inclusion/exclusion criteria</li> <li>• # enrolled per group</li> </ul>	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
<b>Methods- Treatment Regimens</b> <ul style="list-style-type: none"> <li>• Treatments used</li> <li>• Dosages/administration</li> <li>• Therapy duration</li> </ul> <b>Methods- Outcome Measures</b> <ul style="list-style-type: none"> <li>• Primary Measure</li> <li>• Secondary Measures</li> </ul> <b>Methods- Data Handling</b> <ul style="list-style-type: none"> <li>• Intention to Treat, per protocol, etc.</li> <li>• # lost to follow up</li> <li>• Reasons for dropouts</li> </ul> <b>Methods- Statistics</b> <ul style="list-style-type: none"> <li>• Tests Used</li> <li>• Power of study</li> </ul>	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
Results				
<b>Results</b> <ul style="list-style-type: none"> <li>• Results for each outcome measure</li> <li>• Confidence intervals</li> <li>• P-values</li> <li>• Compliance</li> </ul>	Accurately and completely reported ALL of the relevant results and conclusion	Accurately and completely reported MOST of the relevant results and conclusion	Did not accurately and completely report MOST of the results and conclusion	___ / 2



11/17/2020 11:11 AM

<ul style="list-style-type: none"> <li>Adverse events</li> </ul> <b>Conclusion</b> <ul style="list-style-type: none"> <li>Authors' conclusion(s)</li> </ul>	components (2 points)	components (1 point)	components (0 points)		
<b>Study Conclusion</b>					
<b>Clear, Concise Conclusion Stated</b>	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 point)	Failed to give conclusion OR conclusion completely inaccurate (0 points)	___/ 3
<b>Applicability</b>					
<b>List strengths and limitations of study</b>	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 point)	Strengths and limitations of the study not addressed (0 points)		___/ 2
<b>Student recommends how study and results should change current pharmacy practice</b> 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
<b>Presentation Skills</b>					
<b>Speaking Style, Distractors (um, like...), Eye Contact</b>	Spoke clearly, easy to understand, very few distractors, maintained good eye contact throughout (3 points)	Difficult to hear some of the presentation, some distractors used, occasionally made eye contact (2 points)	Difficult to hear/understand, distractors used throughout, read presentation from notes (1 point)		___/ 3
<b>Timing (not including questions)</b>	16 to 20 minutes (3 points)	<16 min or >20 mins (1 point)			___/ 3
<b>Total Score</b>					
___/ 24 pts					

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

11/17/2020 11:11 AM

## Appendix C: Rubric for Assessing Student Questions for Scientific Article Presenters

Key: 3 = 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

## Appendix D: Rubric for Assessing Student Summary of Center for Pharmacogenomics and Precision Medicine Journal Club

Key: 4 = 100%; 3 = 85%; 2 = 70%; 1 = 50%; 0 = 0%

Article Overview				
<b>Study Highlights</b> <ul style="list-style-type: none"> <li>Rationale for the research</li> <li>Design</li> <li>Subjects studied and number per group</li> <li>Treatment regimen/intervention</li> <li>Outcome measures</li> <li>Data analysis methods</li> <li>Context of findings (from the literature)</li> <li>Author conclusions</li> </ul>	Accurately and completely reported ALL of the relevant study highlights (2 points)	Accurately and completely reported MOST of the relevant study highlights (1 points)	Did not accurately and completely report MOST of the relevant study highlights (0 point)	___/ 2
Session Discussion				
<b>Topics Discussed</b> <ul style="list-style-type: none"> <li>Discussion points</li> <li>Student's perspective on points discussed</li> <li>Additional points not brought up in session discussion</li> </ul>	Accurately and completely reported ALL of the discussed topics and provided additional insight on each topic (2 points)	Accurately and completely reported ALL of the discussed topics but provided little to no additional insight on each topic (1 point)	Did not accurately and completely report MOST of the discussed topics (0 points)	___/ 2