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OFFICE OF THE  
SENATE COUNCIL**Course Information**

Date Submitted: 1/23/2015

Current Prefix and Number: BSC - Behavioral Science , BSC 732 INTERDISCIPLINARY PROTOCOL

Other Course:

Proposed Prefix and Number: BSC 732

What type of change is being proposed?

Major Change

Should this course be a UK Core Course? No

**1. General Information**

a. Submitted by the College of: MEDICINE

b. Department/Division: Behavioral Science

c. Is there a change in 'ownership' of the course? No

If YES, what college/department will offer the course instead: Select...

e. Contact Person

Name: John Wilson

Email: jfwilson@uky.edu

Phone: 8594894602

Responsible Faculty ID (if different from Contact)

Name: Jamie Studts

Email: jlstu2@uky.edu

Phone: 8593230895

f. Requested Effective Date

Semester Following Approval: Yes OR Effective Semester:

**2. Designation and Description of Proposed Course**

a. Current Distance Learning (DL) Status: N/A

b. Full Title: INTERDISCIPLINARY PROTOCOL DEVELOPMENT

Proposed Title: Interdisciplinary protocol development

c. Current Transcript Title: INTERDISCIPLINARY PROTOCOL

Proposed Transcript Title:

d. Current Cross-listing: none

Proposed – ADD Cross-listing :

Proposed – REMOVE Cross-listing:

e. Current Meeting Patterns

Proposed Meeting Patterns

SEMINAR: 3

f. Current Grading System: Graduate School Grade Scale

Proposed Grading System: *Letter (A, B, C, etc.)*

g. Current number of credit hours: 2

Proposed number of credit hours: 3

h. Currently, is this course repeatable for additional credit? No

Proposed to be repeatable for additional credit? No

If Yes: Maximum number of credit hours:

If Yes: Will this course allow multiple registrations during the same semester? No

2i. Current Course Description for Bulletin: This course is designed to orient students to leadership and teamwork process involved in clinical and translational research and to train students to function effectively in team settings. Students will be assigned to multidisciplinary teams with a designated principal investigator. Each team will be assigned to develop an integrated multidisciplinary grant application to address an assigned clinical research topic. Students are expected to apply their knowledge of effective scientific communication, responsible conduct of research, and methods and technologies of clinical & translational science to the grant application. The course will consist of 4 class periods. The first three classes will consist of an orientation to communication and the role of leadership and teamwork in multidisciplinary clinical and translational research. The final class period will be reserved for a team's organizational meeting. Supplemental team meetings are optional. Each team member will be required to complete an individual 5-page research methods report that is integrated into a multidisciplinary research application addressing a clinical research topic assigned to the team under the direction of an assigned principle investigator. Please note that I was unable to enter any number in the current contact hour fields.

Proposed Course Description for Bulletin: This course will introduce students to the processes involved in the development and implementation of interdisciplinary research. Students will be introduced to key aspects of the leadership, communication and teamwork involved in interdisciplinary research. Students will also be introduced to the structure and functioning of the NIH and the NIH grant application and review process. Finally, students will apply their knowledge regarding the research methods and technologies of clinical and translational science to develop an NIH-format research grant application that addresses a research topic in their own area of interest. This course is intended for advanced graduate or professional students pursuing focused research training in one of the degree or certificate programs available in clinical and translational science. It is expected students will have completed the course in Methods and Technologies in Clinical & Translational Science (BSC 731) prior to this course.

2j. Current Prerequisites, if any: BSC731 and graduate standing in the clinical and translational science program

Proposed Prerequisites, if any: BSC731 and graduate standing in the clinical and translational science program

2k. Current Supplementary Teaching Component:

Proposed Supplementary Teaching Component:

3. Currently, is this course taught off campus? No

Proposed to be taught off campus? No

If YES, enter the off campus address:

4. Are significant changes in content/student learning outcomes of the course being proposed? No

If YES, explain and offer brief rationale: The proposed change in credit hours from two to three credits is being proposed to more adequately represent how the course has evolved since 2007 to better meet student learning needs. In its original form, the two credit course was intended to mentor research protocol development primarily through independent study with faculty mentors. Course meetings of the entire class occurred only four times per year in the original formulation. It has become apparent that much more group work was required to meet the course goals of developing skill in writing interdisciplinary research protocols. The course now has weekly two hour meetings, in which students can benefit more from each others work, and through which skill development can take place and be monitored more effectively. The change in credit hours from two to three more adequately represents the workload in the course, and makes it more consistent with other courses in the clinical and translational science program. I have attached the original syllabus from 2007 and the current syllabus. The course is taught by funded faculty researchers in the Department of Behavioral Science. The change from two to three hours credit will also assist individual students who may need three hours of credit to fulfill fellowship program requirements of being a full time student. The course work load is consistent with a substantial three hour graduate level course, and our program faculty and the department curriculum committee are unanimous in endorsing this credit hour change.

5a. Are there other depts. and/or pgms that could be affected by the proposed change? No

If YES, identify the depts. and/or pgms:

5b. Will modifying this course result in a new requirement of ANY program? No

If YES, list the program(s) here:

6. Check box if changed to 400G or 500: No

## Distance Learning Form

Instructor Name:

Instructor Email:

Internet/Web-based: No

Interactive Video: No

Hybrid: No

1. How does this course provide for timely and appropriate interaction between students and faculty and among students? Does the course syllabus conform to University Senate Syllabus Guidelines, specifically the Distance Learning Considerations?

2. How do you ensure that the experience for a DL student is comparable to that of a classroom-based student's experience? Aspects to explore: textbooks, course goals, assessment of student learning outcomes, etc.
3. How is the integrity of student work ensured? Please speak to aspects such as password-protected course portals, proctors for exams at interactive video sites; academic offense policy; etc.
4. Will offering this course via DL result in at least 25% or at least 50% (based on total credit hours required for completion) of a degree program being offered via any form of DL, as defined above?
- If yes, which percentage, and which program(s)?
5. How are students taking the course via DL assured of equivalent access to student services, similar to that of a student taking the class in a traditional classroom setting?
6. How do course requirements ensure that students make appropriate use of learning resources?
7. Please explain specifically how access is provided to laboratories, facilities, and equipment appropriate to the course or program.
8. How are students informed of procedures for resolving technical complaints? Does the syllabus list the entities available to offer technical help with the delivery and/or receipt of the course, such as the Information Technology Customer Service Center (<http://www.uky.edu/UKIT/>)?
9. Will the course be delivered via services available through the Distance Learning Program (DLP) and the Academic Technology Group (ATL)? NO
- If no, explain how student enrolled in DL courses are able to use the technology employed, as well as how students will be provided with assistance in using said technology.
10. Does the syllabus contain all the required components? NO
11. I, the instructor of record, have read and understood all of the university-level statements regarding DL.

Instructor Name:

SIGNATURE|CLEUKEF|Carl G Leukefeld|BSC 732 CHANGE Dept Review|20150114

SIGNATURE|DDBEAT1|Dorcus D Beatty|BSC 732 CHANGE College Review|20150225

SIGNATURE|ZNNIKO0|Roshan Nikou|BSC 732 CHANGE Graduate Council Review|20150316

Courses	Request Tracking
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### Course Change Form

https://myuk.uky.edu/sap/bc/soap/rfc?services=

Open in full window to print or save

Generate R

Attachments:

Upload File

	ID	Attachment
Delete	4263	original_bsc732_syllabus.doc
Delete	4293	BSC 732 Syllabus proposal january 2015.doc

1

Select saved project to retrieve...

NOTE: Start form entry by choosing the Current Prefix and Number (\*denotes required fields)

Current Prefix and Number:		BSC - Behavioral Science BSC 732 INTERDISCIPLINARY PROTOCOL	Proposed Prefix & Number: (example: PHY 401G) <input checked="" type="checkbox"/> Check if same as current	BSC 732
* What type of change is being proposed?		<input checked="" type="checkbox"/> Major Change <input type="checkbox"/> Major - Add Distance Learning <input type="checkbox"/> Minor - change in number within the same hundred series, exc 799 is the same "hundred series" <input type="checkbox"/> Minor - editorial change in course title or description which doe change in content or emphasis <input type="checkbox"/> Minor - a change in prerequisite(s) which does not imply a cha course content or emphasis, or which is made necessary by the el or significant alteration of the prerequisite(s) <input type="checkbox"/> Minor - a cross listing of a course as described above		
Should this course be a UK Core Course? <input type="radio"/> Yes <input checked="" type="radio"/> No				
If YES, check the areas that apply:				
<input type="checkbox"/> Inquiry - Arts & Creativity <input type="checkbox"/> Composition & Communications - II <input type="checkbox"/> Inquiry - Humanities <input type="checkbox"/> Quantitative Foundations <input type="checkbox"/> Inquiry - Nat/Math/Phys Sci <input type="checkbox"/> Statistical Inferential Reasoning <input type="checkbox"/> Inquiry - Social Sciences <input type="checkbox"/> U.S. Citizenship, Community, Diversity <input type="checkbox"/> Composition & Communications - I <input type="checkbox"/> Global Dynamics				
1. General Information				
a. Submitted by the College of:		MEDICINE	Submission Date: 1/23/2015	
b. Department/Division:		Behavioral Science		
c.* Is there a change in "ownership" of the course?				
<input checked="" type="radio"/> Yes <input type="radio"/> No    If YES, what college/department will offer the course instead? <input type="text" value="Select.."/>				
e.* * Contact Person Name: John Wilson    Email: jfwilson@uky.edu    Phone: 8594894602				
* Responsible Faculty ID (if different from Contact): Jamie Studts    Email: jistu2@uky.edu    Phone: 8593230895				
f.* Requested Effective Date:		<input checked="" type="checkbox"/> Semester Following Approval	OR	<input type="checkbox"/> Specific Term: <sup>2</sup>
2. Designation and Description of Proposed Course.				
a. Current Distance Learning(DL) Status:		<input checked="" type="radio"/> N/A <input type="radio"/> Already approved for DL* <input type="radio"/> Please Add <input type="radio"/> Please Drop		
*If already approved for DL, the Distance Learning Form must also be submitted <u>unless</u> the department affirms (by checking this box ) that the proposed chang affect DL delivery.				
b. Full Title:		INTERDISCIPLINARY PROTOCOL DEVELOPMENT	Proposed Title: *	Interdisciplinary protocol development

c.	Current Transcript Title (if full title is more than 40 characters):	INTERDISCIPLINARY PROTOCOL				
c.	Proposed Transcript Title (if full title is more than 40 characters):					
d.	Current Cross-listing:	<input checked="" type="checkbox"/> N/A	OR	Currently <sup>2</sup> Cross-listed with (Prefix & Number):	none	
	Proposed – ADD <sup>3</sup> Cross-listing (Prefix & Number):					
	Proposed – REMOVE <sup>3,4</sup> Cross-listing (Prefix & Number):					
e.	Courses must be described by at least one of the meeting patterns below. Include number of actual contact hours <sup>5</sup> for each meeting pattern					
	Current:	Lecture	Laboratory <sup>5</sup>	Recitation	Discussion	Indep. Stud:
		Clinical	Colloquium	Practicum	Research	Residency
		Seminar	Studio	Other	Please explain:	
	Proposed: *	Lecture	Laboratory <sup>5</sup>	Recitation	Discussion	Indep. Stud:
		Clinical	Colloquium	Practicum	Research	Residency
		Seminar	Studio	Other	Please explain:	
		3				
f.	Current Grading System:	Graduate School Grade Scale				
	Proposed Grading System:*	<input checked="" type="radio"/> Letter (A, B, C, etc.) <input type="radio"/> Pass/Fail <input type="radio"/> Medicine Numeric Grade (Non-medical students will receive a letter grade) <input type="radio"/> Graduate School Grade Scale				
g.	Current number of credit hours:	2	Proposed number of credit hours:*	3		
h.*	Currently, is this course repeatable for additional credit?	<input type="radio"/> Yes <input checked="" type="radio"/> N				
*	Proposed to be repeatable for additional credit?	<input type="radio"/> Yes <input checked="" type="radio"/> N				
	If YES:	Maximum number of credit hours:				
	If YES:	Will this course allow multiple registrations during the same semester?				
		<input type="radio"/> Yes <input checked="" type="radio"/> N				
i.	<b>Current Course Description for Bulletin:</b>					
	This course is designed to orient students to leadership and teamwork process involved in clinical and translational research and to train students to function effectively in team settings. Students will be assigned to multidisciplinary teams with a designated principal investigator. Each team will be assigned to develop an integrated multidisciplinary grant application to address an assigned clinical research topic. Students are expected to apply their knowledge of effective scientific communication, responsible conduct of research, and methods and technologies of clinical & translational science to the grant application. The course will consist of 4 class periods. The first three classes will consist of an orientation to communication and the role of leadership and teamwork in multidisciplinary clinical and translational research. The final class period will be reserved for a team's organizational meeting. Supplemental team meetings are optional. Each team member will be required to complete an individual 5-page research methods report that is integrated into a multidisciplinary research					
*	<b>Proposed Course Description for Bulletin:</b>					
	This course will introduce students to the processes involved in the development and implementation of interdisciplinary research. Students will be introduced to key aspects of the leadership, communication and teamwork involved in interdisciplinary research. Students will also be introduced to the structure and functioning of the NIH and the NIH grant application and review process. Finally, students will apply their knowledge regarding the research methods and technologies of clinical and translational science to develop an NIH-format research grant application that addresses a research topic in their own area of interest. This course is intended for advanced graduate or professional students pursuing focused research training in one of the degree or certificate programs available in clinical and translational science. It is expected students will have completed the course in Methods and Technologies in Clinical & Translational Science (BSC 731) prior to this course.					
j.	<b>Current Prerequisites, if any:</b>					
	BSC731 and graduate standing in the clinical and translational science program					
*	<b>Proposed Prerequisites, if any:</b>					
*						

	BSC731 and graduate standing in the clinical and translational science program	
k.	Current Supplementary Teaching Component, if any:	<input type="radio"/> Community-Based Experience <input type="radio"/> Service Learning <input type="radio"/> Both
	Proposed Supplementary Teaching Component:	<input type="radio"/> Community-Based Experience <input type="radio"/> Service Learning <input type="radio"/> Both <input type="radio"/> No Change
3.	Currently, is this course taught off campus?	<input type="radio"/> Yes <input checked="" type="radio"/> N
*	Proposed to be taught off campus?	<input type="radio"/> Yes <input checked="" type="radio"/> N
	If YES, enter the off campus address:	
4.*	Are significant changes in content/student learning outcomes of the course being proposed?	<input type="radio"/> Yes <input checked="" type="radio"/> N
	If YES, explain and offer brief rationale:	
	The proposed change in credit hours from two to three credits is being proposed to more adequately represent how the course has evolved since 2007 to better meet student learning needs. In its original form, the two credit course was intended to mentor research protocol development primarily through independent study with faculty mentors. Course meetings of the entire class occurred only four times per year in the original formulation. It has become apparent that much more group work was required to meet the course goals of developing skill in writing interdisciplinary research protocols. The course now has weekly two hour meetings, in which students can benefit more from each others work, and through which skill development can take place and be monitored more effectively. The change in credit hours from two to three more adequately represents the workload in the course, and makes it more consistent with other courses in the clinical and translational science program. I have attached the original syllabus from 2007 and the current syllabus. The course is taught by funded faculty researchers in the Department	
5.	Course Relationship to Program(s).	
a.*	Are there other depts and/or pgms that could be affected by the proposed change?	<input type="radio"/> Yes <input checked="" type="radio"/> N
	If YES, identify the depts. and/or pgms:	
b.*	Will modifying this course result in a new requirement <sup>2</sup> for ANY program?	<input type="radio"/> Yes <input checked="" type="radio"/> N
	If YES <sup>2</sup> , list the program(s) here:	
6.	Information to be Placed on Syllabus.	
a.	<input type="checkbox"/> Check box if changed to 400G or 500.	If changed to 400G- or 500-level course you must send in a syllabus and you must include the differentiation between under and graduate students by: (i) requiring additional assignments by the graduate students; and/or (ii) establishing different gra in the course for graduate students. (See SR 3.1.4.)

<sup>1</sup>See comment description regarding minor course change. *Minor changes are sent directly from dean's office to Senate Council Chair. If Chair deems the change as "not minor," the form will appropriate academic Council for normal processing and contact person is informed.*

<sup>2</sup>Courses are typically made effective for the semester following approval. No course will be made effective until all approvals are received.

<sup>3</sup>Signature of the chair of the cross-listing department is required on the Signature Routing Log.

<sup>4</sup>Removing a cross-listing does not drop the other course – it merely unlinks the two courses.

<sup>5</sup>Generally, undergrad courses are developed such that one semester hr of credit represents 1 hr of classroom meeting per wk for a semester, exclusive of any lab meeting. Lab meeting gene least two hrs per wk for a semester for 1 credit hour. (See SR 5.2.1.)

<sup>6</sup>You must also submit the Distance Learning Form in order for the course to be considered for DL delivery.

<sup>7</sup>In order to change a program, a program change form must also be submitted.

Submit as New Proposal    Save Current Changes

UNIVERSITY OF KENTUCKY COLLEGE OF MEDICINE  
Department of Behavioral Science  
BSC 732/CPH 670: Interdisciplinary Protocol Development (2 Cr)  
Fall Semester, 2007

**Syllabus**

Class meetings

To Be Announced

<u>Coordinator:</u>	<u>Office</u>	<u>Telephone</u>	<u>e-mail</u>
Thomas H. Kelly	134 COMOB	323-5206	thkelly@uky.edu

Objectives

1. Understand the role of leadership and teamwork in multidisciplinary clinical and translational research.
2. Contribute effectively to a multidisciplinary team of investigators engaged in clinical research protocol development.
2. Apply knowledge of the responsible conduct of research, statistics, and CTS methodologies and technologies to protocol development.
4. Model professional clinical and translational teamwork through effective interaction and communication with leadership and team members.

Course Description

This course is designed to orient students to leadership and teamwork processes involved in clinical and translational research and to train students to function effectively in team settings. Students will be assigned to multidisciplinary teams with a designated principal investigator. Each team will be assigned to develop an integrated multidisciplinary grant application to address an assigned clinical research topic. Students are expected to apply their knowledge of effective scientific communication, responsible conduct of research, and methods and technologies of clinical & translational science to the grant application. The course will consist of 4 class periods. The first three classes will consist of an orientation to communication and the role of leadership and teamwork in multidisciplinary clinical and translational research. The final class period will be reserved for a teams organizational meeting. Supplemental team meetings are optional. Each team member will be required to complete an individual 5-page research methods report that is integrated into a multidisciplinary research application addressing a clinical



research topic assigned to the team under the direction of an assigned principal investigator.

### Prerequisites

This graduate level course is intended for students pursuing focused research training in clinical and translational science to develop an understanding of and appreciation for the elements of leadership and teamwork in clinical and translational research. Students will be expected to acquire the knowledge and skills required to be an effective member of a team. No special prerequisites, other than graduate standing, are necessary.

### Readings

There is no textbook for this course. Copies of any assigned readings will be provided to students during the first three class periods.

### Course Expectations

1. Attendance and participation in class and outside team activities. Due to the nature of this course, there is no substitute for attendance at each session and participation in team activities. Unexcused absences will result in a decrease of one full letter grade (i.e., 1 unexcused absence, maximum grade: 'B'; 2 unexcused absences, maximum grade 'C;' etc.). Students will be expected to compensate for excused and unexcused absences in consultation with the instructor.
2. Professional application of communication skills and knowledge of the responsible conduct of research and of clinical and translational science methodologies & technologies to team activities.
3. Completion of the multidisciplinary research application.

### Grades

Grades will be determined in the following manner:

	<u>%</u>
Research Application	
Overall Grade	50
Individual Component	25
PI Evaluation	25

Student evaluations of the course are welcome at any time and will be specifically solicited at the end of the course.

### University Policy on Plagiarism and Cheating

PLAGIARISM and CHEATING are serious academic offenses. The minimum penalty for those academic offenses is final grade E in the assignment.

The University regulations pertaining to this matter can be found at <http://www.uky.edu/StudentAffairs/Code/> Of particular relevance is Part II, SELECTED RULES OF THE UNIVERSITY SENATE GOVERNING ACADEMIC RELATIONSHIPS, Section 6.3 that can be found at <http://www.uky.edu/StudentAffairs/Code/part2.html>

These rules in particular say: PLAGIARISM. All academic work, written or otherwise, submitted by students to their instructors or other academic supervisors, is expected to be the result of their own thought, research, or self-expression. In cases where students feel unsure about a question of plagiarism involving their work, they are obliged to consult their instructors on the matter before submission.

When students submit work purporting to be their own, but which in any way borrows ideas, organization, wording or anything else from another source without appropriate acknowledgment of the fact, the students are guilty of plagiarism.

Plagiarism includes reproducing someone else's work, whether it be published article, chapter of a book, a paper from a friend or some file, or whatever. Plagiarism also includes the practice of employing or allowing another person to alter or revise the work which a student submits as his/her own, whoever that other person may be. Students may discuss assignments among themselves or with an instructor or tutor, but when the actual work is done, it must be done by the student, and the student alone. When a student's assignment involves research in outside sources or information, the student must carefully acknowledge exactly what, where and how he/she has employed them. If the words of someone else are used, the student must put quotation marks around the passage in question and add an appropriate indication of its origin. Making simple changes while leaving the organization, content and phraseology intact is plagiaristic. However, nothing in these Rules shall apply to those ideas which are so generally and freely circulated as to be a part of the public domain.

6.3.2 CHEATING Cheating is defined by its general usage. It includes, but is not limited to, the wrongfully giving, taking, or presenting any information or material by a student with the intent of aiding himself/herself or another on any academic work which is considered in any way in the determination of the final grade. Any question of definition shall be referred to the University Appeals Board.

### Schedule

September 13

September 27

October 11

October 25

**BSC 732/CPH 670: Interdisciplinary Protocol Development (3 Credits)**  
**Department of Behavioral Science**  
**University of Kentucky College of Medicine**  
**proposed**

**Course Meetings**

Monday, 5:00 pm – 7:30 pm  
104 Medical Behavioral Science Building (MBSB)  
University of Kentucky College of Medicine (0086)

<b>Course Instructors</b>	<b>Office</b>	<b>Telephone</b>	<b>Email</b>
Jamie L. Studts, Ph.D.	127 MBSB	323-0895	<a href="mailto:jamie.studts@uky.edu">jamie.studts@uky.edu</a>
Michael Andrykowski, Ph.D.	133 MBSB	323-6657	<a href="mailto:mandry@uky.edu">mandry@uky.edu</a>

- Both instructors are available outside of class time (during regular business hours) for consultation. Please contact either course instructor to arrange an individual appointment, if needed, to discuss issues or questions related to the course.

**Course Description**

This course will introduce students to the processes involved in the development and implementation of interdisciplinary research. Students will be introduced to key aspects of the leadership, communication and teamwork involved in interdisciplinary research. Students will also be introduced to the structure and functioning of the NIH and the NIH grant application and review process. Finally, students will apply their knowledge regarding the research methods and technologies of clinical and translational science to develop an NIH-format research grant application that addresses a research topic in their own area of interest. This course is intended for advanced graduate or professional students pursuing focused research training in one of the degree or certificate programs available in clinical and translational science. It is expected students will have completed the course in Methods and Technologies in Clinical & Translational Science (BSC 731) prior to this course.

**Background**

Interdisciplinary research holds the potential to increase the pace of scientific discovery and speed the translation of knowledge into biobehavioral interventions designed to improve health and well-being. Although there are many descriptions of interdisciplinary research (IDR), the National Academy of Sciences (2005) has adopted the following definition: "...a mode of research by teams or individuals that integrates information, data, techniques, tools, perspectives, concepts, and/or theories from two or more disciplines or bodies of specialized knowledge to advance fundamental understanding or to solve problems whose solutions are beyond the scope of a single discipline or area of research practice." Interdisciplinary research is often referred to as "team science" and these terms can be used interchangeably.

Whether it is called interdisciplinary research or team science, this mode of inquiry offers new opportunities and challenges for science and efforts to reduce morbidity and mortality. In many ways IDR is at the core of clinical and translational science (C&TS) and subscribes to a similar, if not overlapping, set of beliefs and values. Like C&TS, IDR transcends the boundaries of traditional disciplines and integrates concepts and theories from multiple and diverse perspectives, and its vitality is generated by creativity, intellectual curiosity, and openness to new perspectives. It is assumed that students enrolled in this course are either actively engaged in research or intend to be involved in research in the near future.

## **Course Objectives**

At the conclusion of the course, students will be able to:

1. Understand and appreciate the key roles of communication, leadership and teamwork in interdisciplinary clinical and translational research.
2. Apply knowledge regarding the responsible conduct of research, statistical analyses, and clinical and translational science methods and technologies to the development of an interdisciplinary NIH-format grant research grant application.
3. Understand the general organization of the NIH and the NIH grant application and review process

## **Course Prerequisites**

This course is intended for advanced graduate or professional students pursuing focused research training in one of the degree or certificate programs available in clinical and translational science. It is expected students will have completed the course in Methods and Technologies in Clinical & Translational Science (BSC 731) prior to this course.

## **Course Materials**

Course materials include a required text, selected book chapters and journal articles, and online team science training modules.

### **Required Text:**

**There is one required text for the course:**

**Gerin, W. & Kapelewski, C. (2011). *Writing the NIH grant proposal: A step-by-step guide (2<sup>nd</sup> ed)*. Sage: Thousand Oaks, CA.**

**This required text is available for purchase at Amazon.com as well as other online booksellers.**

### **Book chapters and journal articles:**

Copies of all selected book chapters and journal articles used in the weekly readings will be made available to students through DropBox. When accessing required book chapters and journal articles through DropBox, please make an electronic copy of these chapters and articles for your use. Do not move the chapters and articles from DropBox as this will make these items unavailable to other students.

Of course, some of the book chapters and journal articles may also be available through the UK library and UK's Electronic journals website.

### **Online Team Science training modules:**

A collection of online Team Science training modules have been developed by the Northwestern University program in Clinical and Translational Science program (NUCATS). These modules are available online at <http://teamscience.net/>. To access these modules, students will need to go to this web address and register online to use the website to access the modules.

## Course Activities

Course activities are intended to promote an awareness of the processes involved in the design and conduct of interdisciplinary research as well as foster the creative application of research technologies and methods to students' individual areas of research interest. The diverse interests and experiences of students and faculty participating in the course offer opportunities to learn from each other.

Learning will be facilitated through a combination of core readings, online team science video modules, classroom discussions, and written assignments. These activities include:

- 1) **Core readings** will provide information regarding interdisciplinary research skills, specific topical areas, and grant development. Core readings are intended to foster the development of interdisciplinary research skills and the translation of those skills into the development of an interdisciplinary research grant application. It is expected you will have completed all assigned weekly readings before the class meeting for that week.
- 2) **Online Team Science Training Modules** will provide information regarding the nature of team science and the issues that commonly confront individuals engaged in interdisciplinary, team science. You will be asked to register at the team science website (<http://teamscience.net/>) which will enable you to watch and listen to a set of video modules. It is expected that you will have reviewed the assigned online modules before the class meeting for that week.
- 3) **Class discussions** will center around assigned core readings, online team science training modules, weekly written assignments, and didactic presentations by course instructors. This course is intended to be an interactive experience for both students and the course instructors, so participation in class discussion is expected of all students. To engage effectively in class discussion, it is important that students have completed all weekly assignments prior to class meetings.
- 4) **Written assignments** will be of two types: weekly written assignments and a final research grant application due at the conclusion of the semester.

### Weekly written assignments:

Weekly written assignments are intended to stimulate critical thinking and reflection as well as lead the student through a step-by-step process, which will ultimately culminate in the creation of the final research grant application. Most weekly written assignments will be relatively brief (1-2 pages). Specific instructions for each weekly written assignment will be provided in class and will also be available via DropBox. Again, when using DropBox to access instructions for the weekly assignments, students are asked to make an electronic copy of any materials related to the weekly assignments for their use. Do not move copies of these materials from DropBox.

The weekly written assignments will provide a basis for in-class discussions, so it is expected that the written assignment for each week will be completed before class and turned in before or during class. In most instances, written assignments will be reviewed by the course instructors and returned to students with feedback and comments prior to the next class. All weekly assignments can be revised and resubmitted once to improve their quality (and potentially their grade) and make them a more effective preparation for the final research grant application. See details under "Course Grading" below.

### Research Grant Application:

The course is designed to culminate in the submission of a research grant application based on a research area of the student's choice.

The research grant application will be based on a research area of the student's choice, with several broad restrictions:

(1) The final research grant application must be written using the NIH format appropriate for either an R01 (investigator initiated research), R03 (small grant) or R21 (exploratory research) mechanism, as appropriate. Complete information regarding the required NIH formats for the R01, R03, and R21 grant mechanisms are available at the NIH.gov website.

(2) The final research grant *application must be based on a research project involving human subject participation*. The final research grant application must not be based upon animal research.

(3) The final research grant application must be a new project for which the student will serve as the principal investigator.

(4) The research described in the final research grant application must have a definite interdisciplinary research component.

Additional information regarding the final research grant application assignment will be provided during the course of the semester.

The final research grant application should be submitted as an electronic document to the course directors by 5:00 PM eastern time on Monday, May 5, 2014.

### **Class Attendance**

Class attendance is a vital and expected component of the course. All students are expected to come to class on time and to notify the course instructors in advance if they are unable to attend a class. Excused absences may require a make-up activity. An unexcused absence will result in loss of 10 points towards the final course grade. Two unexcused absences will result in dropping the final earned course grade by one grade. Three or more unexcused absences will result in dropping the final course grade by two grades.

## **Course Grading**

Final course grades will be determined on the basis of points accumulated through completion of required course activities. Required course activities include weekly class attendance and participation, weekly written assignments, and a final grant application. All weekly written assignments (except late assignments) can be revised and resubmitted once in order to receive maximum credit for that assignment. Resubmitted weekly assignments must be submitted within two weeks of their original due date. Late submissions of weekly assignments will result in a 5 point deduction. Submission of a weekly assignment more than 48 hours after its initial due date (i.e., after 5 PM on a Wednesday) will result in awarding of 0 points for the assignment.

### **Maximum point values for course activities:**

- Class attendance and Participation: 13 classes @ 10 points each = 130 possible points (22%)
- Weekly written assignments: 12 assignments @ 10 points each = 120 possible points (20%)  
1 assignment (#6) @ 50 points = 50 possible points (8%)
- Final research grant application: 1 application @ 300 possible points (50%)

### **Based on accumulation of points, final course grades will be calculated as follows:**

A: 540 – 600 points  
B: 480 – 539 points  
C: 420 – 479 points  
F: 419 points or less



### **Policy on Academic Accommodations Due to Disability**

If you have a documented disability that requires academic accommodations, please arrange an appointment with a course director as soon as possible. In order to receive accommodations in this course, you must provide a Letter of Accommodation from the Disability Resource Center (Room 2, Alumni Gym, 257-2754, email address [jkarnes@email.uky.edu](mailto:jkarnes@email.uky.edu)) for coordination of campus disability services available to students with disabilities.

### **Policy on Plagiarism and Academic Fraud**

Plagiarism and academic fraud are strictly prohibited. Any instances of plagiarism and academic fraud will be dealt with strictly. Students who are deemed to have engaged in plagiarism or academic fraud will automatically receive a final grade of "F" in the course. As a student, you are responsible for knowing how the University of Kentucky defines plagiarism and academic fraud and are responsible for monitoring your own behavior.

For your information, the following is reprinted from current **University regulations**:

#### **6.3.1 PLAGIARISM**

*All academic work, written or otherwise, submitted by students to their instructors or other academic supervisors, is expected to be the result of their own thought, research, or self-expression. In cases where students feel unsure about a question of plagiarism involving their work, they are obliged to consult their instructors on the matter before submission.*

*When students submit work purporting to be their own, but which in any way borrows ideas, organization, wording or anything else from another source without appropriate acknowledgment of the fact, the students are guilty of plagiarism.*

*Plagiarism includes reproducing someone else's work, whether it be published article, chapter of a book, a paper from a friend or some file, or whatever. Plagiarism also includes the practice of employing or allowing another person to alter or revise the work which a student submits as his/her own, whoever that other person may be. Students may discuss assignments among themselves or with an instructor or tutor, but when the actual work is done, it must be done by the student, and the student alone.*

*When a student's assignment involves research in outside sources or information, the student must carefully acknowledge exactly what, where and how he/she has employed them. If the words of someone else are used, the student must put quotation marks around the passage in question and add an appropriate indication of its origin. Making simple changes while leaving the organization, content and phraseology intact is plagiaristic. However, nothing in these Rules shall apply to those ideas, which are so generally and freely circulated as to be a part of the public domain.*

#### **6.3.2 CHEATING**

*Cheating is defined by its general usage. It includes, but is not limited to, wrongfully giving, taking, or presenting any information or material by a student with the intent of aiding himself/herself or another on any academic work which is considered in any way in the determination of the final grade. Any question of definition shall be referred to the University Appeals Board.*

### **Bad Weather Policy**

Any decisions regarding the cancellation of classes, delayed opening or early cancellation of classes due to bad weather will be made by the University's Vice President for University Relations. Up-to-date information is made available through several sources which you may access directly:

- 1) the UK INFOLINE at 257-5684
- 2) UK TV (check your local TV guide for channel number) or WUKY-FM at 91.3

3) UK Home Page at [www.uky.edu](http://www.uky.edu)

**BSC 732 – Interdisciplinary Protocol Development  
Spring, 2014**

**Detailed Schedule of Classes, Topics, and Reading, Video, and Written Assignments**

**January 20**                    **Martin Luther King Holiday (no class)**

**January 27**                    **Week 1: Course Overview and Introduction to NIH and the NIH Grant**

Required Readings:

- None

Written Assignment Due:

None

**February 3**                    **Week 2: Identifying the Research Question and Constructing Specific Aims and Hypotheses**

Required Readings:

- Yang, O. (2012). Planning the Aims and Overcoming Writer's Block (Chapter 6; pps 15-18) *Guide to Effective Grant Writing: How to Write a Successful NIH Grant Application (2<sup>nd</sup> Ed)*. New York: Springer.
- Yang, O. (2012). Specific aims. (Chapter 9; pps 31-34) *Guide to Effective Grant Writing: How to Write a Successful NIH Grant Application (2<sup>nd</sup> Ed)*. New York: Springer.
- Cummings, S.R., Browner, W.S., & Hulley, S.B. (2007). Conceiving the research question (Chapter 2; pps 17-23) In Hulley, S. B., Cummings, S. R., Browner, W. S., Grady, D. G., & Newman, T. B. *Designing Clinical Research (3<sup>rd</sup> edition)*: Lippincott, Williams & Wilkins: Philadelphia, PA.
- Gerin & Kapelowski (2011). Chapter #5, *Writing the Application, Part I: The Scientific Content (emphasis on pps 67-79)*

Written Assignment Due:

- #01a: Identify your primary research question(s)
- #01b: Identify 2-3 specific aims
- #01c: State hypotheses associated with your specific aims

**February 10**

**Week 3: Identifying an Appropriate Funding Opportunity**

Required Readings:

- Gerin & Kapelewski (2011). Chapter #1, *The National Institutes of Health and Biomedical Funding*
- Gerin & Kapelewski (2011). Chapter #3, *Types of Award Mechanisms*
- Gerin & Kapelewski (2011). Chapter #4, *Preparation and Preliminary Steps*

Written Assignment Due:

- #02a: Conduct an NIH Reporter Search on your research question
- #02b: Identify an appropriate NIH program announcement, institute, and funding mechanism for your research question
- #2c: Identify the appropriate branch within your chosen NIH institute and the appropriate NIH program officer within that branch
- #2d: Identify the CSR study section most appropriate for your research application.

**February 17**

**Week 4: Framing the Significance and Innovation of Your Research**

Required Readings:

- Yang, O. (2012). Research Strategy: Significance (Chapter 10; pps 35-39) *Guide to Effective Grant Writing: How to Write a Successful NIH Grant Application (2<sup>nd</sup> Ed)*. New York: Springer.
- Yang, O. (2012). Research Strategy: Innovation (Chapter 11; pps 41-42) *Guide to Effective Grant Writing: How to Write a Successful NIH Grant Application (2<sup>nd</sup> Ed)*. New York: Springer.
- Gerin & Kapelewski (2011). Chapter #5, *Writing the Application, Part I: The Scientific Content (emphasis on pps 79-87)*

Written Assignment Due:

- #03 Outline the significance and innovation of your research

February 24

**Week 5: Team Science: Leadership and Collaboration**

Required Readings:

- Gray, B. (2008). Enhancing transdisciplinary research through collaborative leadership. *American Journal of Preventive Medicine*, 35(Suppl. 2), S124-S132.
- Bennett, Gadlin & Levine-Finley (2010). Preparing yourself for team science. *Collaboration & Team Science: A Field Guide* (5-13).
- Bennett, Gadlin & Levine-Finley (2010). Building a research team. *Collaboration & Team Science: A Field Guide* (15-19).
- Bennett, Gadlin & Levine-Finley (2010). Developing a shared vision. *Collaboration & Team Science: A Field Guide* (25-27).
- Guimerà, R., Uzzi, B., Spiro, J., & Amaral, L. A. N. (2005). Team assembly mechanisms determine collaboration network structure and team performance. *Science*, 308, 697-702.

Assigned Team Science Video Modules

- Managing a Team: Leadership (130 through 144) (24:40 total viewing)

Written Assignment Due:

- #04a: Identify and assess the strengths and weaknesses of your leadership style
- #04b: Identify and assess the strengths and weaknesses of your collaborative style

March 3

**Week 6: Choosing and Describing Research Methods – Part I**

Required Readings:

- Gerin & Kapelewski (2011). Chapter #5, *Writing the Application, Part I: The Scientific Content (emphasis on pps 90-110)*
- Yang, O. (2012). Research Strategy: Approach (Chapter 10; pps 43-49) *Guide to Effective Grant Writing: How to Write a Successful NIH Grant Application (2<sup>nd</sup> Ed)*. New York: Springer.
- Bordage, G., & Dawson, B. (2003). Experimental study design and grant writing in eight steps and 28 questions. *Academic Medicine*, 37, 376-385.
- Inouye, S. K., & Fiellin, D. A. (2005). An evidence-based guide to writing grant proposals for clinical research. *Annals of Internal Medicine*, 142, 274-282.

Written Assignment Due:

- #05a: Outline the research design and methods of your research
- #05b: Choose a title for your application
- #06a: Submit updated versions of written assignments 1-3

**March 10**

**Week 7: Team Science: Communication**

Required Readings:

- Stokols, D., Misra, S., Moser, R. P., Hall, K. L., Taylor, B. K. (2008). The ecology of team science: Understanding contextual influences on transdisciplinary collaboration. *American Journal of Preventive Medicine*, 35(Suppl. 2), S96-S115.
- Bennett, Gadlin & Levine-Finley (2010). Communicating about science. *Collaboration & Team Science: A Field Guide* (29-33).
- Bennett, Gadlin & Levine-Finley (2010). Handling conflict. *Collaboration & Team Science: A Field Guide* (39-44).
- Bennett, Gadlin & Levine-Finley (2010). Strengthening team dynamics. *Collaboration & Team Science: A Field Guide* (45-49).
- Masse, L. C., Moser, R. P., Stokols, D., Taylor, B. K., Marcus, S. E., Morgan, G., Hall, K. L., Croyle, R. T., & Trochim, W. M. (2008). Measuring collaboration and transdisciplinary integration in team science. *American Journal of Preventive Medicine*, 35(Suppl. 2), S151-S160.

Assigned Team Science Video Modules

- Managing a Team: Communication (106 through 116, 119 through 123) (30:10 total viewing)

Written Assignment Due

- #07: Identify and discuss the strengths and weaknesses of your communication style

**March 17**

**Spring Break (no class)**

**March 24**

**Week 8: Choosing and Describing Research Methods – Part II**

Required Readings:

- Chung K. C., & Shauver, M. J. (2008). Fundamental principles of writing a successful grant proposal. *The Journal of Hand Surgery*, 33A, 566-572.
- Ries & Leukefeld (1995). Chapter #13, *Writing to Be Competitive*
- Yang, O. (2005). Organization and aesthetics. *Guide to Effective Grant Writing: How to Write a Successful NIH Grant Application*. New York: Kluwer Academic/Plenum Publishers.

Written Assignment Due:

- #8: Prepare an elaborated version of your Research Design and Methods

**March 31**

**Week 9: Team Science: Team Building and Teamwork**

Required Readings:

- Whitfield, J. (2008). Collaboration: Group theory. *Nature*, 455, 720-723.
- Miller, K. (2008). Successful collaborations: Social scientists who study science have noticed a trend. *Biomedical Computation Review*, 7-15.
- Bennett, Gadlin & Levine-Finley (2010). Fostering trust. *Collaboration & Team Science: A Field Guide* (21-24).
- Bennett, Gadlin & Levine-Finley (2010). Sharing recognition and credit. *Collaboration & Team Science: A Field Guide* (35-38).
- Gerin & Kapelewski (2011). Chapter #2, *Mentoring and Collaborative Relationships*
- Yang, O. (2012). Collaborators and Consultants (Chapter 15; pps 57-58) *Guide to Effective Grant Writing: How to Write a Successful NIH Grant Application (2<sup>nd</sup> Ed)*. New York: Springer.

Assigned Team Science Video Modules

- Team Science 101: Core Concepts: Videos (5)
- Managing a Team: Conflict/Conflict Resolution: Videos (145 through 155)
- Managing a Team: Conflict/Conflict Resolution: Animations and Activities (156 and 157)
- Assembling a Team: Team Building: Videos (#'s 73, 75, 80, 82-83, 86-87, 89, 91, 96, 99-100)
- Assembling a Team: Team Building: Animations and Activities (40, 42, 103, 105)

Portfolio Assignment Due

- #09a: Identify appropriate collaborators and their roles
- #09b: Prepare your NIH biosketch

**April 7**

**Week 10: Identifying and Presenting Preliminary Studies**

Required Readings:

- Gerin & Kapelewski (2011). Chapter #5, *Writing the Application, Part I: The Scientific Content (emphasis on pps 87-90)*
- Yang, O. (2005). Preliminary results. *Guide to Effective Grant Writing: How to Write a Successful NIH Grant Application*. New York: Kluwer Academic/Plenum Publishers.

Written Assignments Due

- #10a: Identify potential preliminary studies and describe their relevance to your research
- #10b: Prepare the abstract and public health relevance statement for your application

**April 14**

**Week 11: Additional Grant Sections and Procedural Processes – Part I**

Required Readings:

- Gerin & Kapelewski (2011). Chapter #7, *Writing the Application, Part III*:
- Gerin & Kapelewski (2011). Chapter #8, *Submitting the Application*
- Yang, O. (2012). Administrative Sections and Submission Process (Chapter 17; pps 63-68) *Guide to Effective Grant Writing: How to Write a Successful NIH Grant Application (2<sup>nd</sup> Ed)*. New York: Springer.
- Ries & Leukefeld (1995). Chapter #11, *Supporting Details*

Written Assignment Due

- #11a: Prepare a detailed budget for your research
- #11b: Prepare a detailed budget justification

**April 21**

**Week 12: Additional Grant Sections and Procedural Processes – Part II**

Required Readings:

- Gerin & Kapelewski (2011). Chapter #6, *Writing the Application, Part II: Human and Animal Concerns* (pps. 111-144 only)
- Hulley et al. (2007). Chapter #14, *Addressing Ethical Issues*
- Yang, O. (2005). Use of Appendices. *Guide to Effective Grant Writing: How to Write a Successful NIH Grant Application*. New York: Kluwer Academic/Plenum Publishers.

Written Assignment Due

- #12: Prepare the human subjects research section of your grant

**April 28**

**Week 13: Reviewing Grants and Manuscripts and Responding to Reviews**

Required Readings:

- Gerin & Kapelewski (2011). Chapter #9, *The Grant Review and Award Process*
- Guyatt, G. H., & Haynes, R. B. (2006). Preparing reports for publication and responding to reviewer comments. *Journal of Clinical Epidemiology*, 59, 900-906.
- Lovejoy, T. I., Revenson, T. A., & France, C. R. (2011). Reviewing manuscripts for peer-reviewed journals: A primer for novice and seasoned reviewers. *Annals of Behavioral Medicine*, 42, 1-13.
- Bourne, P. E., & Korngreen, A. (2006). Ten simple rules for reviewers. *PLoS Computational Biology*, 2, e110-e111.
- Cummings, P., & Rivara, F. P. (2002). Responding to reviewers' comments on submitted articles. *Archives of Pediatric & Adolescent Medicine*, 156, 105-107.
- Yang, O. (2012). Resubmitting an Application (Chapter 19; pps 77-81) *Guide to Effective Grant Writing: How to Write a Successful NIH Grant Application (2<sup>nd</sup> Ed)*. New York: Springer.

Written Assignment Due

- #13: Complete a mock review of your own grant application

**May 5**

**Final Research Grant Application Due at 5:00 PM eastern time**

Please email an electronic copy of your final research grant application to the course instructors.



## Ellis, Janie

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**From:** Nikou, Roshan  
**Sent:** Monday, March 16, 2015 10:00 AM  
**To:** Brothers, Sheila C; Carvalho, Susan E; Ellis, Janie; Ett, Joanie M; Hippisley, Andrew R; Jackson, Brian A; Lindsay, Jim D.; Nikou, Roshan; Price, Cleo; Timoney, David M  
**Cc:** Fox, Charles W; Yu, Guoqiang; Wilson, John; Studts, Jamie L; Yeager, Kevin; Anastacio, Enrique &  
**Subject:** Transmittals  
**Attachments:** PLS 455G.pdf

TO: Andrew Hippisley, Chair and Sheila Brothers, Coordinator  
Senate Council

FROM: Brian Jackson, Chair and Roshan Nikou, Coordinator  
Graduate Council

Graduate Council approved the following proposals and is now forwarding them to the Senate Council to approve. Please note, the Graduate Council received the attached course proposal, PLS 455G via email.

### Courses

ABT 505 Evolution in Agriculture, Medicine & Conservation Biology  
BME 580 Introduction to Biomedical Imaging  
MFS 503 Lean Manufacturing Principles & Practice  
BSC 732 Interdisciplinary Protocol Development  
PLS 455G Wetland Delineation  
EES 579 Groundwater Geophysics

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