

Course Syllabus

PUBHEPI 6412---Basic Principles in Clinical and Translational Science

Autumn 2025

Instructor:

[Philip Binkley, MPH, MD \(Links to an external site.Bio and Highlights found here.Links to an external site.\)](#)

Office location and phone number: Suite 392 Doan Office Tower 395 W 12th Ave; 614-293-8724

E-mail: binkley.2@osu.edu

Class Time and Location: Th 12:15-2:05 pm, 2cnd floor conference room Health Sciences Library in CTSA

Instructor's Office Hours: By arrangement; At Least one hour per week will be reserved for student conferences

Factuly Feedback and Response Time

- **Grading:** You can generally expect feedback within 7 days
- **Email-**I will reply to emails (ideally sent to 2@osu.edu) within 24 hours on schoold days
- **Discussion Board:** I will check and reply to messages in the disscuion boards at least every 24 hours on schoold days and every 48 hours on weekend unless a different turnaround time (due to travel etc.) is announced

NAME: BINKLEY, PHILIP

eRA COMMONS USER NAME (agency login): PBINKLEY

POSITION TITLE: Professor

EDUCATION/TRAINING

INSTITUTION AND LOCATION	DEGREE (if applicable)	Completion Date MM/YYYY	FIELD OF STUDY
Ohio Wesleyan University, Delaware, Ohio	AB	1976	Mathematics
The Ohio State University, Columbus, Ohio	MD	1979	Medicine
The Ohio State University, Columbus, OH	MPH	2004	Biostatistics/Epidemiology

PERSONAL STATEMENT

My career has been devoted to both the clinical management and the investigation of congestive heart failure and cardiomyopathies. I have a long record of investigative efforts including those exploring the vascular responses to ventricular systolic failure and the autonomic consequences of congestive heart failure and the mechanisms by which they contribute to the progression of this disease process. These efforts have been supported by the National American Heart Association, the NIH, and various industry sponsors. More recently, my research has focused on the clinical and genetic predictors of recovery of LV systolic function and, in collaboration with Dr. Peter Mohler and others, investigation of cellular and molecular determinants of LV function through analysis of human heart tissue. In this career, I have had a commitment to the mentorship and development of new clinical and translational investigators. This has in part been recognized by a K24 Midcareer Investigator Award in Patient Oriented Research that is granted to those with both a history of successful clinical and translational science and who have trained others to pursue careers in this realm. I have furthered my role in research education and mentorship through the award of a novel NIH Road Map training grant (T32) in Clinical Research. This T award was integrated with the OSU Center for Clinical and Translational Science (CCTS) and I have directed that program as well as served as the Director of Research Education, Training, and Career Development for this CCTS program during its first award period. I have now furthered my commitment to career development as the Director of a new Center for Faculty Advancement Mentoring and Engagement (FAME) within the College of Medicine. This program offers a faculty school presenting in depth training in the skills required to become successful in the many career pathways in academic medicine, a leadership training institute, a program for the academic advancement of women and underrepresented minorities and a mentorship program that teaches principals of mentorship and is designed to assure that all faculty have mentors. I will contribute my expertise in mentorship, career guidance and conduct of clinical and translational research to

Course Description: This seminar and topics course addresses broad ranging topics related to all aspects of clinical and translational research. Class sessions are divided between discussions led by experts in this field and student-led discussions. The latter consist of presentation of a student's own research in progress or research plan, a topic of interest to the students in clinical and translational science, and when appropriate, presentation of research results the student has reported at regional or national meetings. *Students from diverse backgrounds and academic disciplines are encouraged to enroll.* Team presentations by students of different scientific

backgrounds addressing clinical and translational research problems are encouraged. An effort is made to present seminar topics that are responsive to the interests of the students. A unique feature is a newly established collaboration with medical pharmaceutical and device industries in which scientific leaders in that arena discuss with students ethical and appropriate collaborations with industry and how scientific investigation is conducted in the industrial setting. Examples of past seminar discussions include: 1) philosophy of science; 2) What are examples of clinical research3).;What are examples of translational reserch; How do research ethics frive clinical science?

Prerequisites: The student will be enrolled in a graduate degree program in any field that is relevant to clinical or translational science.

Class Format: This is an in-person class with occasional virtual presentation by experts (virtual classes are listed in the course outline). Class readings are posted on Carmen and written assignments will allow the student to express their own understanding and viewpoints regarding the topics discussed in class.

- **This is a two credit hour course.** According to Ohio State policy (osu.edu/credithours), students should expect around 2 hours per week of time spent on direct instruction (e.g., class discussions) in addition to 4 hours of homework/active learning activities (e.g., assignments, readings, preparation for class presentaitons) to receive a grade of (C) average.
- **Attendance and participation requirements:** Attendance at all class meetings is required. Class absence may be excused after email or discussion with the instructor. Acceptable excuses include illness, need to travel for meetings or conferences, laboratory responsibilities, and graduate studies requirements. Other excuses will be considered based on the need for absence.

Course Technology

Technology skills needed for this course

- Basic computer and web-browsing skills
- Navigating Carmen (osu.edu/canvasstudent)
- CarmenZoom virtual meetings (osu.edu/zoom-meetings)

Required equipment

- **Computer:** current Mac (Mac OSX) or PC (Windows 10+) with high-speed internet connection
- **Other:** a mobile device (smartphone or tablet) to use for BuckeyePass authentication

- **Microsoft 365 Copilot (formerly Office 365)**

All Ohio State students are now eligible for free Microsoft 365 Copilot (formerly Office 365). Full instructions can be found at osu.edu/office365help.

Technology support

For help with your password, university email, Carmen, or any other technology issues, questions, or requests, contact the Ohio State IT Service Desk. Standard support hours are available at and support for urgent issues is available 24/7.

- **Self-Service and Chat support:** <http://it.osu.edu/help>
- **Phone:** 614-688-4357(HELP)
- **Email:** servicedesk@osu.edu

Course Objectives: Course objectives are to: 1. Understand the definitions and principles of clinical and translational science and how they two domains of science differ; 2. Understand the domains of translational science; 3. To understand the principles of communicating across disciplines and to the lay public; 4. To practice approaches to team science through a class exercise; 5. To understand basic principles of the ethical conduct of research and recognize possible barriers to the practice of research ethics.

Core Competencies:

1. Apply systems thinking tools to visually represent a public health issue in a format other than standard narrative
2. Assess population needs, assets and capacities that affect communities' health
3. Select quantitative and qualitative data collection methods appropriate for a given public health context

Specialization Competencies in MPH in CTS

1. Prepare an letter of intent for a translational/team science RFA.

2. Communicate scientific research and ideas to diverse audiences and through different modalities
3. Recognize ethical issues that are likely to arise in clinical investigations and the procedures for handling them appropriately.
4. Demonstrate understanding of the difference between clinical science and translational science; demonstrate understanding of the different domains of translational science

Text/Readings: Readings are posted in relevant modules on Carmen prior to class meetings. Readings very based on topic and recent available literature.

Grading: This class is graded Satisfactory/Unsatisfactory. Grading is based on class participation in discussion, a group class project and written class assignments. Demonstration of understanding of the course objectives and relevant competencies provide the basis for satisfactory or unsatisfactory final grade.

Exams: There are no examinations in this class.

Assignments

Class assignments include a group project in which two to three students present a letter of intent (LOI) in response to an hypothetical request for applications (RFA) for a team translational science grant. Groups present their LOI to the class and individuals write and submit a written description of their scientific field's contribution to the project. Other assignments will be listed on Carmen and will ask students to reflect on specific aspects of topics discussed in class. They will be reviewed by the instructor with comments regarding the responses to the individual students.

Class Policies

Attendance at all class meetings is expected. However, if absences are unavoidable please contact the class instructor as soon as you are aware you will be absent. Any work to make up for the absence will be discussed at that time. Please do not use electronic devices for communication during the class or to attend to activities outside the class discussion. However, electronic devices can be used to obtain web based information relevant to the class discussion. Artificial intelligence resources may be used for class activities and assignments following discussion with and with permission given by the instructor.

Health and Safety Requirements

All students, faculty and staff are required to comply with and stay up to date on all university safety and health guidance (<https://safeandhealthy.osu.edu>), which includes following university mask policies and maintaining a safe physical distance at all times. Non-compliance will be warned first and disciplinary actions will be taken for repeated offenses.

Copyright Statement

This syllabus and all course materials (e.g., homework assignments, solution keys, course materials) are under copyright by the instructor and cannot be posted elsewhere without written permission.

Generative AI

Generative AI may be used in this course to explore the wide variety of topics we address. This includes the use of AI for the class project and assignments. However, please inform me of the use of AI in class assignments or projects and how it was used.

Office of Student Life: Disability Services

The university strives to maintain a healthy and accessible environment to support student learning in and out of the classroom. If you anticipate or experience academic barriers based on your disability (including mental health, chronic, or temporary medical conditions), please let me know immediately so that we can privately discuss options. To establish reasonable accommodations, I may request that you register with Student Life Disability Services. After registration, make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion.

If you are isolating while waiting for a COVID-19 test result, please let me know immediately. Those testing positive for COVID-19 should refer to the [Safe and Healthy Buckeyes site](#) Links to

[an external site.](#) for resources. Beyond five days of the required COVID-19 isolation period, I may rely on Student Life Disability Services to establish further reasonable accommodations. You can connect with them at slds@osu.edu or 614-292-3307.

Mental Health Services

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a student's ability to participate in daily activities. The Ohio State University offers services to assist you with addressing these and other concerns you may be experiencing. If you or someone you know are suffering from any of the aforementioned conditions, you can learn more about the broad range of confidential mental health services available on campus via the Office of Student Life's Counseling and Consultation Service (CCS) by visiting ccs.osu.edu[Links to an external site.](#) or calling [614-292-5766](tel:614-292-5766). CCS is located on the 4th Floor of the Younkin Success Center and 10th Floor of Lincoln Tower. You can reach an on call counselor when CCS is closed at [614-292-5766](tel:614-292-5766) and 24 hour emergency help is also available 24/7 by dialing 988 to reach the Suicide and Crisis Lifeline.

Religious Beliefs or Practices Accommodations

It is Ohio State's policy to reasonably accommodate the sincerely held religious beliefs and practices of all students. The policy permits a student to be absent for up to three days each academic semester for reasons of faith or religious or spiritual belief.

Students planning to use religious beliefs or practices accommodations for course requirements must inform the instructor in writing no later than 14 days after the course begins. The instructor is then responsible for scheduling an alternative time and date for the course requirement, which may be before or after the original time and date of the course requirement. These alternative accommodations will remain confidential. It is the student's responsibility to ensure that all course assignments are completed.

Academic integrity

Academic integrity is essential to maintaining an environment that fosters excellence in teaching, research, and other educational and scholarly activities. Thus, The Ohio State University, the

College of Public Health, and the Committee on Academic Misconduct (COAM) expect that all students have read and understood the University's *Code of Student Conduct* and the School's *Student Handbook*, and that all students will complete all academic and scholarly assignments with fairness and honesty. The *Code of Student Conduct* and other information on academic integrity and academic misconduct can be found at the COAM web pages (<https://oaa.osu.edu/academic-integrity-and-misconduct>[Links to an external site.](#)). Students must recognize that failure to follow the rules and guidelines established in the University's *Code of Student Conduct*, the *Student Handbook*, and in the syllabi for their courses may constitute "Academic Misconduct."

The Ohio State University's *Code of Student Conduct* (Section 3335-23-04) defines academic misconduct as: "Any activity that tends to compromise the academic integrity of the University, or subvert the educational process." Examples of academic misconduct include (but are not limited to) plagiarism, collusion (unauthorized collaboration), copying the work of another student, and possession of unauthorized materials during an examination. Please note that the use of material from the Internet without appropriate acknowledgement and complete citation is plagiarism just as it would be if the source were printed material. Further examples are found in the *Student Handbook*. Ignorance of the *Code of Student Conduct* and the *Student Handbook* is never considered an "excuse" for academic misconduct.

If I suspect a student of academic misconduct in a course, I am obligated by University Rules to report these suspicions to the University's Committee on Academic Misconduct. If COAM determines that the student has violated the University's *Code of Student Conduct* (i.e., committed academic misconduct), the sanctions for the misconduct could include a failing grade in the course and suspension or dismissal from the University. If you have any questions about the above policy or what constitutes academic misconduct in this course, please contact me.

It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term "academic misconduct" includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee ([Faculty Rule 3335-5-48.7 \(B\)](#)). For additional information, see the [Code of Student Conduct](#)

Intellectual Diversity

Ohio State is committed to fostering a culture of open inquiry and intellectual diversity within the classroom. This course will cover a range of information and may include discussions or debates about controversial issues, beliefs, or policies. Any such discussions and debates are intended to support understanding of the approved curriculum and relevant course objectives rather than promote any specific point of view. Students will be assessed on principles applicable to the field of study and the content covered in the course. Preparing students for citizenship includes helping them develop critical thinking skills that will allow them to reach their own conclusions regarding complex or controversial matters.

Week / class	Topics, Readings, Assignments	Learning Objectives
WK1/ Class: 8/28 Module: LOI	Class overview and introduction of students and their disciplinary areas. Overview of the collaborative group assignment.	1, 2
WK2/Class: 9/4 Module: Translational Science	Dr. Michael Grever: What is clinical science?	1, 2
WK3 Class: 9/11		1,2
Module: IRB and Research Ethics WK4Class: 9/18	Dr. Ryan Nash: Introduction to Bioethics Objectives	1,2,3
Module: Translational Science	Dr. Seuli Brill: Community Engagement Research; In class assignment/activity: elements of building community-based research;	1,2
WK5/Class: 9/25 Module: Translational Science	Dr. Binkley: What is Translational Science part 1 Assignment: personal written reflection submitted on carmen describing the differences between clinical and translational science and the different domains of translational science; how does the student's own research fit into this spectrum and how it might change?	1,2
WK6/Class: 10/2	Reading: Papers in Translational Science Module including "Saving the NIH from the Roadmap," and the "Research Prenuptial." Dr. Binkley: Translational Science 2 Readings in Module Translational Science	1,2

Week / class	Topics, Readings, Assignments	Learning Objectives
Module: Translational Science	Dr. Binkley: Translational Science Communication	
WK7/Class: 10/9	Assignment: In class, discuss your area of science in terms your partner will understand and teach back to the class	
Module: Translational Science Communication	Written assignment describing your research in terms understandable to other disciplines and to the lay public Readings in Module Translational Science Communication including speaking without power point.	1,2
WK8/Class: 10/16	Autumn Break : No Class	
WK9/Class: 10/23	Dr. Courtney Hebert: Basics of Biomedical Informatics	
Module: Data Archival	Readings in Module Data Archival	4
WK10/Class:10/30	Dr. Kathleen Dungan: Your clinical research project from A to Z	
Module: Conducting a Clinical Trial	Readings in Module Conducting a Clinical Trial Deception at Duke: Class Video	1, 2,
WK11/Class:11/6	Readings in Module Bioethics 1 including “falsification of Beta Blocker Data,” “Ivory-tower-lies,” “Men and Research Conduct.” Assignment: Reflective writing in response to questions regarding the factors that can promote academic misconduct and how this is a risk in team and translational science	3
Module: IRB and Bioethics	Student Presentations of LOI in response to Team and Translational Science RFA	
WK12/Class: 11/13	Assignment: In addition to class presentation, each student submits a written description of their discipline’s contribution to the project,	1, 2,3,4
Module: LOI		

Week / class	Topics, Readings, Assignments	Learning Objectives
	how the collaborative problem of interest was chosen and how the project may advance science in their own field.	
WK 13/	Student Presentations of LOI in response to Team and Translational Science RFA	
Class: 11/20	Assignment: In addition to class presentation, each student submits a written description of their discipline's contribution to the project, how the collaborative problem of interest was chosen and how the project may advance science in their own field.	1.2.3.4
Module: LOI		
WK14/Class 11/27	NO CLASS--Thanksgiving	
	Student Presentations of LOI in response to Team and Translational Science RFA	
WK15/Class 12/4	Assignment: In addition to class presentation, each student submits a written description of their discipline's contribution to the project, how the collaborative problem of interest was chosen and how the project may advance science in their own field.	1,2,3,4
Module: LOI		

	Essays	In Class Discussion	Class Presentation
CPH Core Competencies			
1. Apply systems thinking tools to visually represent a public health issue in a format other than standard narrative	X	X	X
2. Assess population needs, assets and capacities that affect communities' health	X		X

3. Select quantitative and qualitative data collection methods appropriate for a given public health context	x	X	X
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MPH in CTS Specialization Competencies	X		
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1. Prepare a letter of intent for a translational/team science RFA.	X	X	X
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2. Communicate scientific research and ideas to diverse audiences and through different modalities	X	X	X
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3. Recognize ethical issues that are likely to arise in clinical investigations and the procedures for handling them appropriately.	X	X	
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4. Demonstrate understanding of the difference between clinical science and translational science; demonstrate understanding of the different domains of translational science	X	X	
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