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**KINESIOLOGY / POP HEALTH 955**  
**Seminar in Physical Activity Epidemiology**  
**Spring 2019**

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**Instructor:**

Dr. Lisa Cadmus-Bertram  
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Phone: (608) 265-5946 (email preferred)  
Office Hours: By appointment

**Class:** Tuesday 12:05 - 12:55, Room 3330 HSLC

**Credit allocation:** This is a 1-credit course consisting of 50 min/week of in-person instruction plus two hours per week of work outside class.

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**Course Description**

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**Overview**

The field of physical activity epidemiology has expanded rapidly over the past several decades and continues to grow with new and exciting research questions about the role of physical activity in human health and well-being. The primary goal of this course is read and analyze recent peer-reviewed papers in the field. We will focus on a wide range of very recent studies rather than using a textbook. Thus this course is not intended to provide a history of the field or a comprehensive summary of scientific knowledge on physical activity and health (we offer a 3-credit course, *KINES/PHS 791: Physical Activity Epidemiology*, which does provide that overview).

The course will begin with three sessions led by Dr. Cadmus-Bertram, in which the basic elements of physical activity epidemiology research will be covered. These include epidemiological study designs, the measurement of physical activity, physical activity recommendations, and prevalence and trends in physical activity in the US. The remainder of the semester will focus on student presentations of the scientific literature. Each student will present 3 times during the semester. All students are expected to have thoughtfully read the articles prior to class time, and arrive prepared to participate in the discussion.

**Learning Outcomes**

After taking this course, you will be able to:

1. Name and explain the basic concepts of physical activity epidemiology, including study designs, public health guidelines, surveillance, and physical activity measures
2. Critically evaluate current research on physical activity and health topics
3. Prepare a presentation and lead a group in an in-depth discussion of the methods, interpretation, and implications of recent scientific articles.

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## Assignments

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Each student will present 3 original research articles from the physical activity epidemiology literature within the past 5 years. For the first two cycles, we will generally use articles selected from the list on page 5. Using the list ensures that we cover a good breadth of study designs, measurement strategies, and health outcomes. For the 3<sup>rd</sup> presentation, students will present an article of their choice or can pick one from the list. It can be on any topic of interest to you, as long as it falls within the realm of physical activity epidemiology. Please bring your chosen paper to me (or email it) by March 16 as they will be reviewed for suitability for the class. Alternatively, you can present your own research project if applicable. All articles will be posted on the course website.

Presentations should be 7-8 minutes in length to ensure that we have adequate time for discussion of both articles. When making your slides, avoid too-small font sizes both in text and in tables/figures.

**Be sure to include the following components in your presentation:**

1. What is the relevant background?
2. What is the problem/hypothesis?
3. Brief statement of relevant methods: study design, population, measurements, etc.
4. Main results/authors conclusions. Focus on key findings, or aspects that were particularly interesting to you; no need to cover every result. Use tables/figures as needed.
5. Limitations and/or strengths. Also, what biases or confounders may be at play?
6. What do you take from this study?

**For final round, also include:**

7. Why did you choose this particular study?

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## Grading

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Letter grades will be assigned based on participation in the aspects of the course outlined above (presentation of articles, preparation for and participation in discussions). An 'A' will be given when the best effort at presenting an article is shown, articles have been read prior to attending class each week, and active, thoughtful participation in class discussion is evident. Grades will decrease as these standards are not fully met. Grades on presentations will be provided periodically throughout the semester. You will get a preview of your participation grade at Spring Break.

**Calculation of course grade**

|                 |     |
|-----------------|-----|
| Presentation #1 | 25% |
| Presentation #2 | 25% |
| Presentation #3 | 25% |
| Participation   | 25% |

**Score to letter grade conversion**

|    |         |
|----|---------|
| A  | 93-100% |
| AB | 88-92%  |
| B  | 83-87%  |
| BC | 78-82%  |
| C  | 70-77%  |
| D  | 60-69%  |
| F  | <60%    |

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## Course policies

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### **Attendance**

Regular attendance is required and will be recorded. You are allowed up to one unexcused absence. For any additional absences, your participation grade will be lowered unless you provide documentation about the circumstances preventing your attendance.

### **Reading**

Reading assignments should be completed prior to class. The quality of our discussions and the depth of the learning that can occur are highly dependent the entire group being prepared. So please do read the articles closely and take notes before class so that you are ready to discuss.

### **Participation grade**

Your participation grade is based on your attendance as well as your active and thoughtful involvement in discussion. A perfect attendance record is not sufficient to achieve a high participation grade. You must contribute substantially to class by asking and answering questions, volunteering your thoughts, and actively engaging with your classmates and instructor. This is an informal course and we are all here to learn together, so please voice your ideas and questions. Sometimes students are hesitant to ask a question because they feel that they might be the only one who doesn't understand a concept. This is rarely true – chances are there are others in class who are wondering about the same thing.

### **Website**

Our course has a Canvas website which will be used to post class materials, including the syllabus and journal articles. For the first three sessions, lecture slides will be provided in class and uploaded to the course website after class.

### **Office hours**

I am committed to giving you personal attention and helping you with whatever issues arise in this course. Feel free to contact me via email and I will reply within 2 business days (usually much more quickly). Due to the small size of this class, office hours will be offered by appointment, so do not hesitate to ask for one.

### **Accommodation statement**

I will try to ensure that all students are fully included in the course activities. Please let me know if you have a McBurney visa or are otherwise in need of any special accommodations in the curriculum, instruction, or assessments of this course to enable you to participate fully. I will make every effort to maintain the confidentiality of the information you share. If you need accommodations due to religious observances, please let me know within the first 2 weeks of the semester which dates you will need adjustment.

### Weekly Schedule

| WEEK | DATE   | SPEAKER                     | TOPIC / PAPER                             |
|------|--------|-----------------------------|---|
| 1    | Jan 22 | Lisa Cadmus-Bertram         | Introduction to epidemiological concepts  |
| 2    | Jan 29 | Lisa Cadmus-Bertram         | Measurement of physical activity          |
| 3    | Feb 5  | Lisa Cadmus-Bertram         | Public health guidelines and surveillance |
| 4    | Feb 12 | Presenter TBD               | Round 1 article                           |
|      |        | Presenter TBD               | Round 1 article                           |
| 5    | Feb 19 | Presenter TBD               | Round 1 article                           |
|      |        | Presenter TBD               | Round 1 article                           |
| 6    | Feb 26 | Presenter TBD               | Round 1 article                           |
|      |        | Presenter TBD               | Round 1 article                           |
| 7    | Mar 5  | NO CLASS (At-home activity) |   |
| 8    | Mar 12 | Presenter TBD               | Round 2 article                           |
|      |        | Presenter TBD               | Round 2 article                           |
| 9    | Mar 19 | SPRING BREAK                |   |
| 10   | Mar 26 | Presenter TBD               | Round 2 article                           |
|      |        | Presenter TBD               | Round 2 article                           |
| 11   | Apr 2  | Presenter TBD               | Round 2 article                           |
|      |        | Presenter TBD               | Round 2 article                           |
| 12   | Apr 9  | Presenter TBD               | Round 3 article                           |
|      |        | Presenter TBD               | Round 3 article                           |
| 13   | Apr 16 | Presenter TBD               | Round 3 article                           |
|      |        | Presenter TBD               | Round 3 article                           |
| 14   | Apr 23 | Presenter TBD               | Round 3 article                           |
|      |        | Presenter TBD               | Round 3 article                           |
| 15   | Apr 30 | Wrap up                     |   |

## List of Papers

|                   |  |
|-------------------|--|
| Altoff (2017)     | Large-scale physical activity data reveal worldwide activity inequality  |
| Arem (2014)       | Pre- and post-diagnosis physical activity, television viewing, and mortality among patients with colorectal cancer in the National Institutes of Health – AARP Diet and Health Study   |
| Beets (2018)      | Economic evaluation of a group randomized trial on healthy eating and physical activity in afterschool programs  |
| Carson (2017)     | Cross-sectional associations between sleep duration, sedentary time, physical activity, and adiposity indicators among Canadian preschool-aged children using compositional analysis   |
| Davis (2012)      | Exercise dose and diabetes risk in overweight and obese children   |
| Hara (2018)       | Genomewide association study of leisure-time exercise behavior among Japanese adults   |
| Harmon (2017)     | Rethinking physical activity for children: Implications for the working poor   |
| Holtermann (2018) | The physical activity paradox: Six reasons why occupational physical activity (OPA) does not confer the cardiovascular health benefits that leisure-time physical activity does  |
| Keum (2016)       | Association of physical activity by type and intensity with digestive system cancer risk   |
| Khalili (2013)    | Physical activity and risk of inflammatory bowel disease: prospective study from the Nurses' Health Study cohorts  |
| Lewis (2016)      | Future directions in physical activity intervention research: Expanding our focus to sedentary behaviors, technology, and dissemination  |
| Lubans (2018)     | School physical activity intervention effects on adolescents' performance in mathematics   |
| Lynch (2014)      | Sedentary behavior and prostate cancer risk in the NIH–AARP Diet and Health Study  |
| Menke (2014)      | Association between trends in race-ethnicity, aging, and body mass index with diabetes prevalence in the United States   |
| Miranda (2015)    | Frequent physical activity may not reduce vascular disease risk as much as moderate activity: Large prospective study of UK women  |
| O'Donovan (2017)  | Association of “weekend warrior” and other leisure-time physical activity patterns with risk for all-cause, cardiovascular disease, and cancer mortality (see also the editorial by Hamer: The ‘weekend warrior’ physical activity pattern: How little is enough?) |
| Okonkwo (2013)    | Physical activity attenuates age-related biomarker alterations in preclinical AD   |
| Roberts (2014)    | The association of ambient air pollution and physical inactivity in the United States  |
| Saelens (2014)    | Relation between higher physical activity and public transit use   |
| Smith (2017)      | Systematic literature review of built environment effects on physical activity and active transport – an update and new findings on health equity  |
| Teo (2013)        | Prevalence of a healthy lifestyle among individuals with cardiovascular disease among high-middle-, and low-income countries: The Prospective Urban Rural Epidemiology (PURE) Study  |
| Thornton (2016)   | Physical activity in older adults: An ecological approach  |
| Tsenkova (2017)   | Childhood socioeconomic disadvantage, occupational, leisure-time, and household physical activity, and diabetes in adulthood   |
| Zahrt (2017)      | Perceived physical activity and mortality: Evidence from three nationally representative U.S. samples  |