



Tufts University, Friedman School of Nutrition Science and Policy
NUTC212— *Designing Equitable, Diverse Communities for Physical Activity*
– formerly known as *Policy, Systems, and Environmental Change for Physical Activity*
Summer 2020

Class Meetings: *Online*

Instructors: *R. Mark Fenton, MS*
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Office hours: *As needed. Please contact us by email and we will respond within 48 hours.*

Semester Hour Units: *3*

Prerequisites: *None.*

Course Description:

Behavior change interventions alone are insufficient to effect population level improvements in physical activity. This course will address the broader social, policy, and environmental approaches that are being utilized nationwide to create physical and cultural settings that support increases in physical activity, with a specific focus on routine activities such as walking, bicycling, and using public transit. Physical activity measurement, epidemiology, and recommended guidelines will be outlined, along with fundamental lessons of how individually targeted approaches to physical activity and nutrition can be used to inform larger-scale behavior change efforts. The socio-ecological model will frame the evidence for systems-based approaches to population physical activity, such as key elements of the built environment that support routine activity and healthier food systems; policies, such as land use plans and zoning, transportation networks and funding, and site design guidelines; and school policies affecting physical activity (e.g. physical education and recess, shared-use agreements, Safe Routes to School). When

appropriate, policy approaches to improved nutrition will be included as well (e.g. land use practices to preserve farmland; local ordinances supporting urban agriculture or limiting fast food establishments). The result will be a broad understanding of the evidence- and best practice-based approaches to healthy community development.

The course does *not* assume a technical background in public health or planning, and is well-suited for interested professionals in public health promotion and policy development, and health agencies; planning, public works, parks and recreation, housing, transit, and transportation; school administration; economic and community development; elected and appointed officials; and advocates and citizens concerned with the public health of their community.

Course Objectives:

The primary purpose of this course is to teach students how social, policy and environmental systems work together to influence access to, and availability and use of spaces that support physical activity. Students will learn about: the epidemiology and measurement of physical activity, how to read, interpret and use different types of evidence related to physical activity, including peer-reviewed journals, policy briefs and national guidelines; theoretical frameworks used to guide behavioral interventions, and how zoning laws impact land use. By the end of this course, students will be able to explain how various factors in their community are influencing their and others' physical activity behaviors and will have written a proposal to address a problem of either personal or professional interest related to physical activity. More specifically, students will:

- Apply tenets from the socio-ecological model to inform public health interventions related to physical activity.
- Describe four broad characteristics of environments that are supportive of routine physical activity, and the strength of the evidence base for each.
- Differentiate between the various specific and credible resources that provide guidelines, recommendations, or specific technical support for creating physical activity-supporting environments.
- Classify specific policy approaches to developing built environments that support routine walking, cycling, and transit use, and the level of evidence in support of these approaches.
- Develop specific, actionable, evidence- and best practice-based suggestions for an area or issue of personal or professional interest related to physical activity.

Texts or Materials:

All assigned readings listed on the schedule will be available for the duration of the semester on Canvas (as PDFs or via links), or via the Hirsch Health Sciences Library access system, in cases where finding the literature is not part of the assignment.

Required Materials:

Digital Pedometer - A reliable, repeatable step counter is required, but it does not need to provide distance and calorie burn estimates.

Recommended: Yamax SW200 digital pedometer or Accusplit AE120XL-xBX digital pedometer

Book: *Implementing Physical Activity Strategies: Put the National Physical Activity Plan into action with 42 proven programs*. Russell Pate and David Buchner (Eds). Human Kinetics, 2014. Available from Human Kinetics (www.humankinetics.com) and Amazon, hard-cover or digital form.

Recommended Resources: Statistics manual (accessible for free): <http://www.bmj.com/about-bmj/resources-readers/publications/statistics-square-one>. If you are unfamiliar with statistics, this small manual is a great place to begin.

Academic Conduct:

You are expected to complete all assignments independently, that is, without the assistance of another human (including fellow students, faculty, anonymous online folk, etc.), unless otherwise noted. (Discussions, obviously, are one such exemption.) All documents used in preparing your work must be properly referenced (see “Assignments and Submission Instructions” below). Please refer to the Tufts University Academic Integrity Policy (<http://uss.tufts.edu/studentaffairs/documents/HandbookAcademicIntegrity.pdf>) and to the Friedman School’s Policies and Procedures manual (<http://nutrition.tufts.edu/student/documents>). Instructors and other university personnel may request that students submit written assignments to plagiarism prevention resources, websites, or other authoritative databanks, such as (but not limited to) “turnitin.com,” or a similar site. These services compare student-produced documents with web content, newspapers, journals, magazines, books, student essays, and other data to determine the originality of student work.

Assessment and Grading:

The assignments and discussion for this course are designed to allow you to practice and demonstrate that you understand the course and class objectives. They are both reflective and evaluative. Please refer to the “Schedule of Lectures, Readings, and Assignments” later in this document for details. Contributing to your final grade are:

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| 1. Assignments & activities; responses to comments on submitted work (6 total, 10points each) | 35% |
| 2. Participation in discussions – thoughtful comments on classmates’ contributions and follow-up on content discussed (e.g. sharing a discovered article or resource) | 30% |
| 3. Final paper | 35% |

Final letter grades (A+ through F) for the course will be assigned based on the following criteria (we round up at 0.05 or 0.5):

- 90–100 A range (90–<93 = A-, 93+ = A, A+ given for superlative work)
- 80–89 B range (80–<83 = B-, 83–<87 = B, 87–<90 = B+)
- 70–79 C range (70–<73 = C-, 73–<77 = C, 77–<80 = C+)
- 60–69 D range (60–<63 = D-, 63–<67 = D, 67–<70 = D+)
- <60 F

Assignments and Submission Instructions:

Written assignments should be submitted in Word or PDF, 1-inch margins, 11-point font, double-spaced. If you'd like our comments directly in your assignment, Word may be your preferred format. **All assignments, discussion postings, etc., must be submitted by Sunday the week they are assigned, no later than 12:00AM EST/EDT or your local time, whichever is later**, unless otherwise specified (e.g. term assignment has an end-of-semester due date). *Please let us know if you are taking the course in a time zone other than the eastern coast of the U.S.* Late assignments will be accepted; however, 10% will be deducted for every day late. If you would like to request an extension on an assignment, you **MUST** email or call **BEFORE** the posted due date/time to request the extension. We will be reasonably flexible in identifying an alternate due date.

Discussions

We learn through independent study, and we learn through interaction with others. Discussions are one of the best ways to get to know your colleagues and create connections that are otherwise challenging to create in the context of an online classroom. The class will be divided into two discussion groups (group assignments given in the first week of class). Discussion guidelines and questions relevant to a particular week's topic will be distributed ahead of time, as necessary. Please remember to contribute in a professional and constructive way, particularly in the face of disagreement; as you know, nutrition and social environments can become very personal, very quickly.

Discussion Grading Criteria

Substantive discussion is a critical element of this course, as it contributes to the understanding and integration of the concepts and topics covered. Students are expected to contribute to the discussion by responding to the comments of other students with thoughtful but concise questions, observations, comments, or suggestions for enhancing their application of a given subject. Students are also expected to engage with each other in ongoing discussions of their own work. We expect courtesy and thoughtful consideration of others' views. Other things we value in a posting: brevity, clarity, and evidence. You don't have to write a lot, but you should write clearly and with focus, ideally making a point. Also, we urge you to go beyond personal opinion and supposition; build a brief case for your point--cite evidence, observation, something you've read, relevant professional experience, etc. Below is a rubric describing above average and below average discussion:

| | <u>No credit</u> | <u>Partial credit</u> | <u>Full credit</u> |
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| Quality of posting | Postings are not relevant to the questions posed, or too simplistic/not thorough, or no posting at all. | Postings reflect the reading and some material from the lectures and/or textbook. | Postings reflect the assigned readings and materials from the lectures and/or textbook. |
| Quality of reply | Response not relevant to original posting, or no reply at all. | Response relevant to posting but fails to support position. | Response relevant to posting and supports position with factual information. |
| Understanding of reading and outside source material | Responds to the question posted but does not mention materials from the readings. | Responds to the question posted and makes reference to readings. | Responds to question posted and demonstrates understanding of assigned readings and materials from the lectures and/or textbook. |
| Timeliness of Posting | Posting or response was not completed on time. | Posting and response were completed on time. | |

Discussion Grading

| 0 | 1 | 2 | 3 |
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| No Post | Basic post, mostly opinion, no particularly unique insight or evidence | Multiple contributions (on others' threads) OR a somewhat unique or evidence-based contribution | Thoughtful comments on others' threads AND making unique insights and evidence-based arguments/observations |

Final Project and Presentation

Students will write a final two-page (~1,000 words) "application plan" and record an accompanying, short (~5 minutes, no longer than 6 minutes) presentation. For this plan, students will:

1. Identify a physical activity-related problem in their community that they would like to address.
2. Identify key stakeholders who will be affected by changes related to this public health problem.
3. Apply concepts and lessons learned in the class to identify specific policy or procedural steps, or specific actions that will be taken, and the anticipated outcomes, keeping stakeholders' interests in mind.

The plan should be formally written and structured, and include citations (<http://researchguides.library.tufts.edu/CitingSources>) and references to class readings or equivalent resources discovered during the course.

Grading criteria:

- Content: The plausibility of the plan, and quality of evidence and practical guidance supporting the student's approach will be evaluated, as will the student's ability to synthesize concepts learned throughout the semester, and to utilize them in a systemic way, demonstrating an impact on physical activity levels. The written document will also be evaluated for organization, clarity, and succinctness, including appropriate use of references.
- Presentation: The presentation will be considered for focus, clarity, and persuasiveness. The student is expected to frame his/her plan for the target audience (e.g. city council, school board, transit authority).
- Feedback to a fellow student. Each student will respond to another student's plan, offering a constructive critique focused on: quality of the technical content (will it work?); effectiveness of the presentation in engaging others; and the likelihood of implementation.
- Final submission: Based on classmates' feedback to their presentation, students will provide a final edited version of their paper for instructors' consideration. A second version of the presentation is not required.

Accommodation of Disabilities: Students with documented disabilities are entitled to academic accommodation appropriate to their needs. If you require accommodations for this course, please contact us confidentially prior to the end of the second week of classes.

Schedule of Lectures, Readings, and Assignments

Lectures, readings, and assignments (including discussions) are to be completed in the week they are assigned and are due by Sunday, midnight, of that week, unless specific assignment deadlines are indicated. Assigned readings are posted on Canvas, and lectures are 10-20 minutes long.

| Sess. | Week | Lectures (Watch) | Canvas Resources (Review) | Assignments (Do) |
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| 1 | 5/20 | <p>1. Introduction to the course & “netiquette”</p> <p>2. Using a PA recall diary.</p> <p>LIVE Lecture: Friday, 5/22, 12:00pm – 1:00pm EDT (will be recorded)</p> | <p>1. PA one-week recall diary</p> | <p>1. Assignment 1: Watch introduction videos. <i>Finish by 5/24.</i></p> <p>2. Assignment 2: Complete the “Getting to Know You” Zee Map. <i>Finish by 5/24.</i></p> <p>3. Assignment 3: Complete the PA one-week recall diary. <i>Finish by 5/31, Submit to Canvas 6/14</i></p> <p>DISCUSSION: For the most part, do you think Americans are sufficiently physically active? If not, what are the big reasons they aren't? And if you think they are, what gets them there?</p> |

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| 2 | 5/25 | <p>3. Physical Activity 101</p> <p>4. Using a pedometer and recording activity.</p> <p>LIVE Lecture: Wednesday, 5/27, 8:00pm – 9:00pm EDT (will be recorded)</p> | <p>1. One week pedometer daily step total recording sheet</p> <p>2. Readings</p> | <p>4. Assignment 4: Wear a pedometer for one week <i>and</i> write a reflection about similarities/differences compared with the one-week recall from week 1. <i>Finish by 6/7, Submit to Canvas 6/14</i></p> <p>DISCUSSION: Why do you think the Physical Activity Guidelines for Americans frames the PA recommendations for children as per day and for adults as per week? Do you think behaviors would change if the recommendation for adults was per day? How do you think the method of PA measurement influences the type and quality of data you get? When would you choose to measure PA using subjective (recall, questionnaire, journal), objective (pedometer, accelerometer), observation (audit, checklist) or community-level (policy/regulation, environmental) methods?</p> |
| 3 | 6/1 | <p>5. Reading & Interpreting the Evidence</p> | <p>1. Review the extensive course library resources page (LINK).</p> <p>2. Readings</p> | <p>5. Assignment 5: Write a one page evaluation of a popular press article about physical activity. Find the original research study (or gray literature) the article is based on, and include that in your analysis. <i>Submit to Canvas 6/21.</i></p> <p>DISCUSSION: What are the challenges of translating research and gray literature into popular articles? What are the pros and cons to translating complex topics into language for lay audiences? What are the implications for behavioral and policy recommendations for physical activity?</p> |

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| 4 | 6/8 | <p>6. Socio-Ecological Approaches – how they influence PA</p> <p>LIVE Lecture: Thursday, 6/11, 8:00pm – 9:00pm EDT (will be recorded)</p> | 1. Readings | <p>NO NEW ASSIGNMENT.</p> <p>ASSIGNMENT DUE: Reflection of PA recall questionnaire vs. pedometer measure.</p> <p>DISCUSSION: List two or three health risk factors that have been successfully reduced through socio-ecological changes, providing an historic benefit to public health? What were the socio-ecological changes? (Do NOT include changes for increased physical activity—consider other risk factors such as infectious disease, accidental injury, nutrition, tobacco, etc.)</p> |
| 5 | 6/15 | <p>7. Physical Activity Behavioral Interventions – the Stickiness Problem</p> <p>LIVE Discussion: Wednesday, 6/17, 8:00pm – 9:00pm EDT (will be recorded)</p> | <p>1. List of acronyms, without definitions</p> <p>2. Readings</p> | <p>6. Assignment 6: Definitions & Acronyms – post acronym definitions & applicability to PA to Canvas using the Glossary, found under Discussions. <i>Submit in Glossary 6/21.</i></p> <p>ASSIGNMENT DUE: Summary of two types of PA evidence.</p> <p>DISCUSSION: Do you have experience in a behavioral, educational, and/or promotional program to promote physical activity, and if so; do you believe it was effective? Are you aware of any research or evidence on behavioral, educational, and/or promotional programs that have successfully created sustained increases in physical activity? Do you know of anything like this that has worked on a scale greater than just volunteers in a research study?</p> |

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| 6 | 6/22 | 8. Environment & Physical Activity | 1. Walkscore [LINK] 2. Readings | 7. Assignment 7: Obtain Walkscores for three real locations; compare scores and comment on their similarities/differences. <i>Finish by 6/28, Submit to Canvas 7/5</i> ASSIGNMENT DUE: Definitions & Acronyms DISCUSSION: Why do you believe real estate web sites are now often linking to the WalkScore web site? What evidence supports this idea that it's worth making this link? |
| 7 | 6/29 | 9. Land Use & Density – Varied & Nearby is Key LIVE Lecture: Thursday, 7/2, 8:00pm – 9:00pm EDT (will be recorded) | 1. City Master Plans [LINKS] 2. Readings 3. Class resource summaries | 8. Assignment 8: Skim completed definitions/acronyms list on Canvas. <i>Finish by 7/5.</i> ASSIGNMENT DUE: Post Walkscores and comments on Canvas. <i>Finish by 7/5.</i> DISCUSSION: Please share at least one piece of research or information you have found (not on the reading lists, etc.) that is an evidence-based or practice-based resource that you think can inform and guide community designs and policies for increased physical activity. <i>Important:</i> What leads you to believe this is a credible or reliable source of information or design or practice guidance? |

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| 8 | 7/6 | <p>10. Network of Facilities for Active Transportation</p> <p>11. How to Lead a Walk Audit – 4:00 min YouTube [LINK]</p> <p>12. How to do a photo-voice & upload</p> | <p>1. Walk Audit Handout</p> <p>2. Complete Streets Summary Document</p> <p>3. NACTO Urban Street Design Guidelines – Executive Summary</p> <p>4. America Walks – Getting the Community on Board</p> <p>5. America Walks – Practice Brief</p> <p>6. America Walks – Additional Resources</p> <p>7. National Physical Activity Plan [LINK]</p> <p>8. Rails to Trails Conservancy [LINK]</p> <p>9. American Trails [LINK]</p> | <p>9. Assignment 9: Create a photo-voice (photos with captions) of a walk audit of an actual walking route that is or could be part of your life. <i>Submit to Canvas 7/26.</i></p> <p>DISCUSSION: This week, we're going to ask you to respond to a recent article about bike lane sponsorships. Here is the link to the article: http://www.bicycling.com/culture/bike-lanes/dallas-bike-lanes-get-juiced.</p> <p>Discussion questions: Should we consider this as a way of funding non-motorized facilities like multi-use pathways? Are there precedents for private sector support of public infrastructure like this? What types of constraints might be put in place? What's our experience, for example, with billboards? Please remember to cite evidence to support your statements.</p> |
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| 9 | 7/13 | 13. Site Design & Transportation Demand Management (TDM): Details Matter | <ul style="list-style-type: none"> 1. Project for Public Spaces [LINK] 2. Walkable & Livable Communities Institute [LINK] 3. WHO-HEAT Development Summary [LINK] 4. Walk & Bike Suitability Assessment 5. PBIC Walkability & Bike-ability Checklist | <p>NO NEW ASSIGNMENTS/NO ASSIGNMENT DUE.</p> <p>DISCUSSION: If you were going to do what Ray Sharp did in the book chapter reading, how would you make your case to the officials in your community? Who would you talk to, and what would the conversation look like/ how would you compel them to action? Would you threaten to run for public office? Or commend them for doing great work? Which resources would you use?</p> |
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| 10 | 7/20 | <p>14. Schools – An Intervention Challenge & Opportunity</p> <p>LIVE Discussion: Wednesday, 7/22, 8:00pm – 9:00pm EDT (will be recorded)</p> | <p>1. National Center for Safe Routes to School & National Safe Routes to School Partnership [LINKS]</p> <p>2. Readings</p> | <p>10. Assignment 10: Develop a memo (~1,000 words) outlining how you will utilize what you have learned from this class in your work and/or advocacy. Record a 4-5 minute (6min max) video presentation summarizing your plan. <i>Submit DRAFT in Discussions 8/2.</i></p> <p>ASSIGNMENT DUE: Post photo-voice of your walk audit. Comment on at least one other and/or comment on overall themes you see from the postings.</p> <p>DISCUSSION: Offer substantive ideas on how to change social norms regarding walking and bicycling to school, like they were in the 1950s and 1960s, so these become a normal behavior again.</p> <p>Keep in mind, we know the shortcomings of behavior change alone - think about the stickiness problem.</p> <p>Use the concepts of the socio-ecological model and systems science to inform your answer.</p> |
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| 11 | 7/27 | 15. National Initiatives & Movements – The Economics | <ul style="list-style-type: none"> 1. EPA SmartGrowth Documents 2. NYC Dept of Transportation: Economic Benefits of Sustainable Streets 3. Protected Bike Lanes Mean Business 4. League of American Bicyclists [LINK] 5. Pedestrian & Bicycle Information Center [LINK] | <p>11. Assignment 11: Review your partner’s draft memo and provide written comments (you will post this so that others can learn from your drafts and responses). ASSIGNMENT DUE: Exchange your first drafts, including references, of your “implementation memos” with your partner.</p> <p>DISCUSSION: Do you believe some type of Health Impact Analysis should be included during the new and redevelopment permitting process? Should it be recommended or required? Should it be advisory or regulatory (e.g. if certain standards aren’t met, a permit will not be granted, as with Environmental Impact Analyses)? Who should be responsible? Respond to Fenton’s HEAT discussion wrap-up.</p> |
| 12 | 8/3 | 16. Intervention Approaches LIVE Lecture: Tuesday, 8/4, 8:00pm – 9:00pm EDT (will be recorded) | <ul style="list-style-type: none"> 1. 3 P’s Summary Memo 2. How to Pay for Sidewalks 3. Every Body Walk – Make Walking Routine 4. Michigan Active Community Environment checklist & design toolkit [LINK] | <p>12. Assignment 12: Utilizing classmate input, finalize your “implementation memo” and video presentation. ASSIGNMENT DUE: Have provided your comments (and received your partner’s comments) on your memo.</p> <p>OPTIONAL DISCUSSION: Do you have questions for your peers as you're developing your final proposal? Use the discussion forum to exchange challenges, questions, ideas, etc.</p> |

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| 13 | 8/10 | 17. Your Plans & Relevant Case Studies 18. Winning Battles, Losing the War | No new readings | ASSIGNMENT DUE: Final two-page memo and accompanying video presentation. <i>DUE by 8/16.</i> OPTIONAL DISCUSSION: Share what you are doing in your personal life or career to increase physical activity. |
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Course Sessions, Learning Objectives, and Readings

Session 1. Course Orientation

During this class we will make sure all students can access the Canvas course site. We will introduce ourselves to students, and likewise, ask them to introduce themselves. We will also explain how to use a physical activity (PA) recall diary.

Learning Objectives. Students will:

- Identify, explain and use a weekly PA recall diary.

Assignments.

- Watch instructor/TA introduction videos.
- Complete one-week PA recall; estimate typical daily energy expenditure.
- Complete the “Getting to Know You” Zee Map by submitting a brief (one phrase each) summary of your name, position, why you’re taking the course, your earliest fond recollection of being physically active as a young child, your location, and posting to the Zee Map.

Canvas Resources.

PA one-week recall diary

Session 2. Physical Activity 101

During this class, students will learn more about PA as an area of study, including definitions, measurement, surveillance, epidemiology and recommendations.

Learning Objectives. Students will:

- Define various forms of physical activity - recreation, exercise, functional, transportation.
- Differentiate between different methods for estimating/measuring PA - questionnaires, accelerometers, observation.
- Explain national epidemiologic surveillance programs and changes in routine energy expenditure over human history.
- Describe national PA recommendations for health, weight loss and fitness.
- Use a pedometer and compare results with those from weekly PA recall diary.

Assignments.

Wear a pedometer for one week, recording daily step totals. Estimate daily energy expenditure. Compare data from this to weekly recall from first week, and analyze/discuss similarities/differences. Were they different, if so why, and which do you think was more accurate for you? Also comment on physical activity in your life.

Canvas Resources:

One week pedometer daily step total recording sheet

Readings.

Required

- Ainsworth BE, Haskell WL, Whitt MC, Irwin ML, Swartz, AM, et. al. (2000) Compendium of physical activities: an update of activity codes and MET intensities. Official Journal of the American College of Sports Medicine, 32(9 Suppl), S498-504.
- Church TS, Thomas DM, Tudor-Locke C, Katzmarzyk PT, Earnest CP, et al. (2011) Trends over 5 decades in U.S. occupation-related physical activity and their associations with obesity, PLoS ONE 6(5), e19657.
- Morris, JN, Kagan A, Pattison DC, Gardner, MJ, et. al. (1966) Incidence and Prediction of Ischemic Heart Disease in London Busmen. The Lancet, September 10, 553-559.
- 2018 Physical Activity Guidelines for Americans

Recommended

- American College of Sports Medicine. Quantity and Quality of Exercise for Developing and Maintaining Cardiorespiratory, Musculoskeletal, and Neuromotor Fitness in Apparently Healthy Adults: Guidance for Prescribing Exercise
- Dietary Guidelines for Americans, 2015-2020
- Physical Activity and Health: A Report of the Surgeon General
- Bassuk SS and Manson JE. (2005) Epidemiological evidence for the role of physical activity in reducing risk of type 2 diabetes and cardiovascular disease. Journal of Applied Physiology, 99, 1193-1204.

Session 3. Reading & Interpreting the Evidence

Data can be collected, analyzed, interpreted and reported differently for different audiences. It can be published in peer-reviewed journals, synthesized in executive summaries and referenced to inform policy efforts. In this class, students will learn about different types of evidence, how to identify the strengths and weaknesses of each, and when various formats can be utilized for maximum impact.

Learning Objectives. Students will:

- Differentiate between types of evidence - peer-reviewed journal articles, meta-studies, reviews, White papers, and research summaries.
- Explain how evidence is used to inform national recommendations, guidelines, advocacy documents, position papers, and rankings and ratings.

- Describe the strengths and weaknesses of each type of evidence; how to access; how and when to use.

Assignments.

Read this *New York Times* popular press article, "[The Stoner as a Gym Rat.](#)" Find and read the original research article upon which the *New York Times* article is based. Write a 1-2 page analysis of the article. Summarize key findings/recommendations presented in the popular press article and compare it against what was in the original source. Are they the same? Different? Offer a critical analysis of the relative merits of the two sources. What is the plausibility of the findings from the popular press article based on what was in the research study (or gray literature)? Is it an accurate representation? Which did you find more compelling & helpful to your work?

Canvas Resources:

Readings.

Required

- Troiano R et.al., Physical Activity in the US, Measured by Pedometer, *MSSE* 40(1), pp181-188, 2008.
- Litman, T. (2012). Evaluating Research Quality. Victoria Transport Policy Institute.
- Book Ch. 27: Isaac F; Bringing Physical Activity, Fitness, & Movement to the Workplace.

Recommended

- Qualitative and Quantitative Research (2006). Grants and Evaluation Office, Imperial COE.
- Altermatt, B. (2010). Evaluating Research, Types of Research: How can you tell the good research from the bad?

Session 4. Socio-Ecological Approaches

In public health, there are several different theoretical frameworks that may be used to guide behavior change interventions. One such framework is the socio-ecological model (SEM), which is commonly employed to inform changes at the community-level. During this class, students will learn more about the history and premise of the SEM, as well as possible applications for its use.

Learning Objectives. Students will:

- Draw and describe the SEM, and summarize different examples of its use in public health promotion.
- Explain how the SEM can be used to inform approaches to changing PA behavior.

Assignments.

Continue review and summary of two different types of evidence.

ASSIGNMENT DUE: Reflection of PA recall questionnaire vs. pedometer measure.

Canvas Resources:

Readings.

- Leuschner, S et. al. (2004). Cholera Epidemic Associated with Raw Vegetables. *MMWR* 53(34): 783-786.

- Frieden, T. (2010). A Framework for Public Health Action: The Health Impact Pyramid. *American Journal of Public Health*. 100 (4): 590-595.
- Sallis, J.F., Owen, N. and Fisher, E. (1996). Ecological models of health behavior. (Chapter 20) pp. 465-482. In K. Glanz, F.M. Lewis, and B.K. Rimer (Eds.), *Health Behavior and Health Education: Theory, Research, and Practice*, second edition. San Francisco: Jossey-Bass.
- Book Ch. 40 – Kappagoda M, et.al. Using Legal & Policy Muscles to Support Physically Active Communities

Session 5. Physical Activity Behavioral Interventions – the Stickiness Problem

Much contemporary physical activity intervention has focused on individual or group-level behavior change programs, education, and encouragement. This has increased our understanding of how to motivate people to be physically active, but also the immense challenges associated with increasing population physical activity rates. This session will outline what we've learned about encouraging physical activity, and why behavior change programs actually "stick" so rarely.

Learning Objectives. Students will:

- Describe typical behavior-focused physical activity interventions, and their relative strengths and weaknesses.
- Explain how a socio-ecological approach moves beyond pure behavior change.
- Identify the multiple disciplines that must be engaged for a broader socio-ecological approach to physical activity promotion.

Assignments.

Definition and acronym homework. Each student will be assigned 3-4 acronyms to define (what the letters mean, what it actually is); and its importance to our work. Post to Canvas by next class for an active class glossary.

ASSIGNMENT DUE: Post short summaries of two different types of PA resources, including key findings/points; any recommendations for action; your view of the strengths/weaknesses of the source.

Canvas Resources:

List of Acronyms, without definitions.

Readings.

Required

- Jakicic, JM, Marcus, BH, Gallagher, KL, Napolitano, M & Lang, W. (2003). Effect of exercise duration and intensity on weight loss in overweight, sedentary women. *JAMA*, 290(10): 1323-1330.
- Jakicic, JM, Davis, KK, Rogers, RJ, King, WC, Marcus, MD. (2016). Effect of wearable technology combined with a lifestyle intervention on long-term weight loss: The IDEA randomized clinical trial. *JAMA*, 316(11):1161-1171.
- Diane Hesel, PhD, RD; Amy D. Rickman, PhD, RD, LDN; Abdus S.Wahed, PhD; Steven H. Belle, PhD
- Book Ch 9 Reger-Nash B, *Wheeling Walks: A Targeted Mass Media-Led Physical Activity Campaign.*

Recommended

- Book Ch 10: Bauman A, Mass Media Campaigns to Promote Physical Activity; Australia & New Zealand Case Studies. (SKIM)
- Davison, K., Jurkowski, J., Li, K., Kranz, S., Lawson, H. A childhood obesity intervention developed by families for families: Results from a pilot study. 2013. International Journal of Behavioral Nutrition and Physical Activity, 10(3).
- Dishman, R., et al. Using constructs of the Transtheoretical Model to predict classes of change in regular physical activity: A multi-ethnic longitudinal cohort study. 2010. Annals of Behavioral Medicine 40(2): 150-163.
- Dunn, A., et al. Comparison of lifestyle and structured interventions to increase physical activity and cardiorespiratory fitness. 1999. JAMA, 281(4).
- Marcus, B., et al. Physical activity interventions using mass media, print media, and information technology. 1998. Am J Prev Med. 15(4): 362-378.
- Thomas, J. et al. Weight-loss maintenance for 10 years in the national weight control registry. 2014. Am J Prev Med;46(1):17-23.

Session 6. Environment & Physical Activity

A growing body of evidence suggests that built and social environments have strong influences on routine physical activity. Four broad elements characterize settings that support routine physical activity, and these should be the focus of truly integrated approaches to PA promotion.

Learning Objectives. Students will:

- Summarize the current evidence connecting physical activity and the environment.
- Describe four key environmental elements that support routine walking, cycling, and transit use.
- Explain, interpret and apply a Walkscore rating, including strengths and shortcomings.
- Discuss health equity issues related to transit availability & segregation; housing & gentrification.

Assignments.

Obtain Walkscores (www.walkscore.com) of three real locations you know (ideally one is your home, second is another place you frequent such as work, third is an area you find noteworthy because of high or low walkability). Compare scores and why you think they are different. Also identify shortcomings of Walkscore. Write a one-page discussion answering these questions: what felt more “walkable” to you, and why? Did Walkscore capture all the factors of walkability? What did it do well, what poorly?

ASSIGNMENT DUE: Post your two acronym glossary entries.

Canvas Resources:

Walkscore web site: www.walkscore.com

Readings.

Required

- Fenton, M. Community design and policies for free-range children: Creating environments that support routine physical activity. 2012. Childhood Obesity; 8(1).

- Frank, L., Kavage,S. 2009. A national plan for physical activity: The enabling role of the built environment. *Journal of Physical Activity and Health*;6(Suppl 2):S185-S195.
- Harris,J., et al. 2013. Mapping the development of research on physical activity and the built environment. *Preventive Medicine*. 57:533-540.
- McCormack,G., Shiell,A. In search of causality: A systematic review of the relationship between the built environment and physical activity among adults. *International Journal of Behavioral Nutrition and Physical Activity*. 2011;8(125).

Recommended

- Saelens ,B., Sallis, J., Frank,L. Environmental correlates of walking and cycling: Findings from transportation, urban design, and planning literatures. 2003. *Annals of Behavioral Medicine*; 25(2):80-91.

Session 7. Land Use & Density - Varied and nearby is key

A proximate mix of land uses is one of the most consistently identified attributes of settings that support routine physical activity. Yet most modern zoning ordinances and development practices actually undermine mixed-use design. This session will focus on the policy and practice opportunities to create more mixed-use settings in new development and redevelopment efforts.

Learning Objectives. Students will:

- Describe systems science as it relates to public health.
- Discuss how systems science can be used to inform public health policy, programming, planning, and education efforts.
- Identify and distinguish between the various types of planning documents and policies and their importance (e.g. master/comprehensive plans, Long-Range Transportation Plans, Transportation Improvement Plans, Pedestrian/Bicycle Plans, Open space/trail plans).
- Develop ordinance recommendations that will address segregated vs. mixed uses; Euclidian vs. Form-based code; open space & farmland preservation.
- Identify ordinance influences on population nutrition behavior such as community gardens & related activities (urban composting, bees, chickens, goats, pigs); drive-through & fast food zoning.
- Explain relevant movements in the land use field, such as Traditional Neighborhood Design (TND); Transit Oriented Development (TOD); New Urbanism, Smart Growth.

No New Assignments.

ASSIGNMENT DUE: Post your Walkscores and comments on three locations.

Canvas Resources:

Readings.

Required

- Seattle, WA Pedestrian Master Plan

- Ewing,R. et al. 2003. Relationship between urban sprawl and physical activity, obesity, and morbidity. American Journal of Health Promotion;18(1):47-57.
- Ding, D. et al. 2011. Neighborhood environment and physical activity among youth: A review. American Journal of Preventive Medicine;41(4):442-455.
- Frank, L., et al. 2004. Obesity relationships with community design, physical activity, and time spent in cars. American Journal of Preventive Medicine; 27(2):87–96.
- King, W., et.al. 2003. The relationship between convenience of destinations and walking for older women. American Journal of Health Promotion. 18(1).
- Your classmates’ Glossary submissions – Skim them.

Recommended

- Coppell, TX City Master Plan

Session 8. Network of facilities for active transportation

Studies demonstrate that a connected network of facilities is critical to routine walking and bicycling, and transit use. This session will frame what a comprehensive network entails, the national movements and guidelines supporting development of pedestrian, bike, and transit networks, and techniques of community engagement and collaborative planning, such as walk audits and design charrettes.

Learning Objectives. Students will:

- Classify key transportation network elements for routine active transportation (walking, cycling, and transit use).
- Categorize key guidelines and manuals used in network construction, such as the AASHTO guide to design; Manual on Uniform Traffic Control Devices (MUTCD), NACTO Urban Street Design Guide.
- Define Complete Streets, both the movement, and actual design approaches such as traffic calming and road diets.
- Distinguish attributes of trails & multi-use pathways for transportation vs. recreation.
- Design and implement a Walk Audit for community engagement, education & practical planning.

Assignments.

Create a photo-voice of a walk audit of an actual walking route that is or could be part of your life. Post photos with one-sentence captions: two photos of appealing/supportive elements; two photos of discouraging/unsupportive, and one photo of an interesting, intriguing, surprising or curious element. (Outline: opening two sentence description of the route and why it’s important, five photos with captions, and two concluding sentences on possible low-cost remediation or improvements).

Canvas Resources:

Required

- Book Ch. 37 – Selby J, A Road Diet for Increased Physical Activity; Safer Walking, Bicycling, and Transit Use

- Book Ch. 39 – Peterson K, Leveraging Public and Private Relationships to Make Omaha Bicycle Friendly
- Video - Prevention Speaks: Fenton on How to Lead a Walk Audit; Walk audit in Oak Park, IL.
- Fenton walk audit handout (one-pager)
- Complete Streets - Summary document (what is it), model policy statement
- NACTO urban street design guidelines - executive summary
- National Physical Activity Plan - Rails-to-Trails Conservancy website
- American Trails website

Session 9. Site Design & Transportation Demand Management (TDM): Details Matter

Though a destination is nearby and connected by a sidewalk, people still won't walk there if the design details are discouraging or dangerous. Planners, architects, and landscape architects understand the attributes of a setting that rewards rather than punishes those using active (walk, bike) transportation. Further, policies can encourage those active modes, through both incentives and disincentives (carrots and sticks).

Learning Objectives. Students will:

- Characterize “carrots and sticks” in transportation demand management, such as congestion charges (London, others), HOV lanes; pricing of parking; bike share systems using performance and impact data.
- Distinguish differing roles of key stakeholders such as architects, landscape architects, planners, engineers, and elected and appointed boards.
- Describe the key protections and requirements of the Americans with Disabilities Act and its benefits.

Assignments.

- Continue to work on photo-voice.

Canvas Resources:

- Book Ch. 36 – Sharp R, Local Public Health Leadership for Active Community Design: An approach for year-round PA in Houghton, MI
- Book Ch. 38 – Meehan L, Incorporating Physical Activity and Health Outcomes in Regional Transportation Planning
- Project for Public Spaces (PPS) website
- Walkable and Livable Communities Institute
- Walk and Bike Suitability Assessment (WABSA)
- PBIC Walkability Checklist; Bike-ability checklist

Session 10. Schools - an intervention challenge and opportunity

Schools have been identified as one potential location for implementing behavior change strategies focusing on youth. Several different research and policy efforts have been introduced, which target various aspects of the school day, including recess, physical education, transport to/from

school, and school food. In this class students will learn about several different initiatives and research studies that are seeking to learn more about the impact of these efforts on improving the health of students.

Learning Objectives. Students will:

- Summarize major research and policy efforts targeting school-related physical activity and nutrition.
- Explain how these research and policy efforts fit within the SEM, specifically utilizing the 5E framework (evaluation, education, encouragement, engineering, enforcement).
- Discuss how efforts can/cannot effectively increase physical activity, improve nutritional quality and/or result in target benefit.
- Explain possible challenges and solutions associated with shared-use agreements.

Assignments.

Write a two-page (~1,000 words) “implementation memo” and

1. Identify a physical activity-related problem in their community that they would like to address.
2. Identify key stakeholders who will be affected by changes related to this public health problem.
3. Apply concepts and lessons learned in the class to identify specific policy or procedural steps, or specific actions that will be taken, and the anticipated outcomes, keeping stakeholders’ interests in mind.

The memo should be formally written and structured, and include citations and references to class readings or equivalent resources discovered during the course. Also develop a brief video presentation summarizing your plan for the class (4-5 minutes; no longer than 6 minutes).

ASSIGNMENT DUE: Post your “photo-voice” of your walk audit. Comment on at least one other and/or comment on overall themes you see from the postings.

Canvas Resources:

Readings.

Required

- Book Ch. 35 – Thomas I., Institutionalizing Safe Routes to School in Columbia, MO.
- Davison, K., Werder, J., Lawson, C. 2008. Children’s active commuting to school: Current knowledge and future directions. Preventing Chronic Disease: Public health research, practice and policy;5(3).
- Ham, S., et al., Changes in the percentage of students who walk or bike to school-United States, 1969 and 2001, J Phys Act Health. 2008;5(2):205-15.
- National Center for Safe Routes to School website
- National Safe Routes Partnership website
- EPA - School Siting Recommendations

Recommended

- Book Ch. 3 - Yancey T., Role of Recess and Physical Activity Breaks During the School Day

Session 11. National initiatives & movements; the economics

Many national movements come at the healthy community design movement from different perspectives, but with fundamentally similar outcome goals. This session will familiarize students with those movements and campaigns to assure greater success when collaborative opportunities arise.

Learning Objectives. Students will:

- Identify the focus and strengths of many of the key campaigns supporting healthy community design such as Complete Streets; Transportation Trails (Rails-to-Trails conservancy); Crime Prevention through Environmental Design (CPTED), New Urbanism, and Transportation Demand Management
- Utilize the assessment tools of the Walk Friendly Community & Bike Friendly Community Awards to assess community success.
- Identify and compellingly present the economic benefits of healthy community design principles.
- Utilize the Health Economic Analysis Tool (HEAT) for walking & cycling to ascertain the dollar value of bicycle and pedestrian improvements, and understand the adjustable defaults on the tool.

Assignments.

Review your partner's draft, and provide written comments (you will post this so that others can learn from your drafts and responses).

ASSIGNMENT DUE: Exchange your first drafts of your "implementation memos" with your partner, including references.

Canvas Resources:

Required

- WHO - HEAT website
- EPA Smartgrowth summary documents on:
 - Economic benefits to Developers
 - Economic benefits to Businesses
- NYC Dept. of Transportation: The Economic Benefits of Sustainable Streets
- League of American Bicyclists website
- Pedestrian and Bicycle Information Center website

Recommended

- National Physical Activity Plan. The 2014 United States Report Card on Physical Activity for Children and Youth

Session 12. Intervention Approaches

Local, regional, and state health department are increasingly investing effort and resources to institutionalize healthy design principles, such as Complete Streets or updated zoning ordinances. This session will introduce a community engagement approach that can be used for settings at very different levels of readiness for change.

Learning Objectives. Students will:

- Design a community engagement process from initial contact through a site visit with field audits and facilitated planning sessions.
- Utilize a simple assessment of community readiness, examining:
 - Public health understanding of true PSE
 - Allied disciplines engagement (planning, public works, housing transit)
 - Policy-maker embrace & implementation
- Explain and give real examples of the 3-P framework for community planning and public design charrettes (programs, projects, and policies).

Assignments.

Utilizing classmate input, finalize your concluding “implementation memo” and video presentation.

ASSIGNMENT DUE: Have provided your comments (and received your partners’ comments) on your implementation memo by this time.

Canvas Resources:

- Sliwa, S. et.al. (2011) Using the Community Readiness Model to Select Communities for a Community-Wide Obesity Prevention Intervention. Preventing Chronic Disease: Public Health Research, Practice, and Policy 8(6): 1-9.
- Fenton - Three P summary memo (program, project, & policy)
- Fenton - How to Pay for Sidewalks
- Michigan Active Community Environment checklist and design toolkit

Session 13. Your Plans and Relevant Case Studies & Last Class

Communities across the country are utilizing healthy community design principles. In this class we will present current examples from across the country of public health practitioners, planners and researchers applying concepts learned in this class in the “real world.”

Learning Objectives. Students will:

- Critique their own and others’ implementation ideas to utilize healthy design approaches.
- Synthesize key implementation lessons from varied case studies, and succinctly summarize these key takeaways (e.g. Shape Up Somerville, Nashville MPO, etc.)

- Utilize a Health Impact Assessments (HIA) to make the case for healthy design, such as in Boston’s Metropolitan Area Planning Council HIA of proposed MBTA service and fare changes.

Assignments.

ASSIGNMENT DUE: Final two-page “implementation memo,” and brief video presentation explaining your plan. This must be based on evidence and best practices presented or discovered by you in this class, with the goal of increasing population level physical activity (possibly in a specific target location or group).

Canvas Resources:

- Fenton - Winning battles, losing the war video.