Winter Quarter 2023
University of Washington

EnvH 538: Public Health and Built Environment
Dept. of Environmental and Occupational Health Sciences, UW School of Public Health
UrbDP 538: Public Health and Built Environment
Dept. of Urban Design and Planning, UW College of Built Environments
EnvH 538 and UrbDP 538 are taught concurrently

Instructor
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Office hours by appointment

Class sessions: Thursdays, 5:00pm – 6:50pm, January 5 to March 9, 2023

Location: UW Johnson Hall, Room 175, https://www.washington.edu/classroom/JHN

Course Description

This interdisciplinary course focuses on the increasing recognition that the design of communities and of buildings can impact human health, especially among disadvantaged populations. Community designs that feature parks, sidewalks, trails, public transit, access to healthy food, affordable housing, and connectivity among destinations can promote equity, encourage physical activity, help prevent obesity and its associated health consequences, and reduce dependence on automobiles whose use contributes to air pollution, motor vehicle crashes, and pedestrian injuries. Increased attention to the health implications of the built environment has led to various innovative solutions, such as mixed-use Smart Growth developments, investments in pedestrian and bicycling infrastructure, incentives to reduce gentrification and displacement, and the use of health impact assessments to convey health information to community decision-makers. The impacts on the built environment of climate change and of the COVID-19 pandemic will also be explored.

Course Learning Objectives

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

- Explain how the design of the built environment impacts public health and equity both positively and negatively
- Critique the literature regarding health and built environment including its strengths and weaknesses
- Describe the methods used to assess the built environment and its impact on health and equity
- Describe the options available to promote healthy community design decisions
- Describe the implications of climate change and of the COVID-19 pandemic on the built environment
- Summarize the benefits of and barriers to working in an interdisciplinary environment

Student Evaluation

- Class participation 15%
- Written reflections on readings 30%
- Park and street audit 20%
- 3 to 5 page paper on research topic 20%
- Two-minute oral testimony 15%

Access and Accommodations: Your experience in this class is important to me. It is the policy and practice of the University of Washington to create inclusive and accessible learning environments consistent with federal and state law. If you have already established accommodations with Disability Resources for Students (DRS), please activate your accommodations via myDRS so we can discuss how they will be implemented in this course. If you have not yet established services through DRS but have a temporary health condition or permanent disability that requires accommodations (conditions include but not limited to; mental health, attention-related, learning, vision, hearing, physical or health impacts), contact DRS directly to set up an Access Plan. DRS facilitates the interactive process that establishes reasonable accommodations. Contact DRS at disability.uw.edu.

Academic Integrity: Students at the University of Washington are expected to maintain the highest standards of academic conduct, professional honesty, and personal integrity. UW is committed to upholding standards of academic integrity consistent with the academic and professional communities of which it is a part. Plagiarism, cheating, and other misconduct are serious violations of the UW Student Conduct Code (WAC 478-120). We expect you to know and follow the university's policies on cheating and plagiarism, and the SPH Academic Integrity Policy. Any suspected cases of academic misconduct will be handled according to UW regulations. For more information, see the UW Community Standards and Student Conduct website.

Religious Accommodations: Washington state law requires that UW develop a policy for accommodation of student absences or significant hardship due to reasons of faith or conscience, or for organized religious activities. The UW's policy, including more information about how to request an accommodation, is available at Religious Accommodations Policy. Accommodations must be requested within the first two weeks of this course using the form at https://registrar.washington.edu/students/religious-accommodations-request/.

Class Schedule and Required Readings

All readings except textbook chapters are provided on **Canvas Share Space** (https://canvas.uw.edu/) under "Files".

Required Textbook (MHP):

- *Making Healthy Places: Designing and Building for Well-Being, Equity, and Sustainability*. Second Edition. Nisha Botchwey, Andrew L. Dannenberg, Howard Frumkin. Island Press. 2022. www.makinghealthyplaces.com.

January 5

A. **Introduction to course**
B. **Overview of public health and the built environment. Andrew Dannenberg, MD, MPH**

- MHP Preface
- MHP Chapter 1. Introduction to healthy, equitable, and sustainable places
- Corburn J. Equitable and healthy city planning: towards healthy urban governance in the century of the city. Chapter 2 in: E. de Leeuw, J. Simos (eds), *Healthy cities: the theory, policy, and practice of value-based urban planning*. pp. 31-41. Springer, 2017.
- Malizia EE. City and regional planning: a primer for public health officials. *American Journal of Health Promotion.* 2005; 19(5S):1–13.

January 12

A. **Physical activity; injury. Steve Mooney, PhD,** Assistant Professor, UW Dept. of Epidemiology, Harborview Injury Prevention and Research Center, sjm2186@uw.edu
B. **Discussion of TED talk shown in class:** Jason Roberts, community activist in Oak Cliff, Texas, https://youtu.be/ntwqVDzdqAU

- MHP Chapter 2. Physical activity and the built environment
- MHP Chapter 5. Injuries, violence and the built environment
- Mooney SJ, DiMaggio CJ, Lovasi GS, et al. Use of Google Street View to assess environmental contributions to pedestrian injury. *American Journal of Public Health*. 2016; 106(3):462-469.
- Aboelata M. Evergreen Cemetery Jogging Path, Boyle Heights CA. From *Built Environment and Health: 11 Profiles of Neighborhood Transformation*. Prevention Institute, Oakland CA, 2004. [**Note**: Read the 1 profile on Evergreen Cemetery Path, not all 11 profiles]. http://www.preventioninstitute.org/component/jlibrary/article/id-114/127.html?tmpl=component&print=1
- Cerin E, Sallis JF, Salvo D, et al. Determining thresholds for spatial urban design and transport features that support walking to create healthy and sustainable cities: findings from the IPEN Adult study. *Lancet Global Health* 2022; 10:e896-e906. https://doi.org/10.1016/S2214-109X(22)00068-7

January 19

A. **Climate change and community resilience. Helen Pineo, MRTPI,** Associate Professor in Healthy and Sustainable Cities, University College London Institute for Environmental Design and Engineering, helen.pineo@ucl.ac.uk
B. **Food and nutrition. Discussion of TED talk shown in class**: Ron Finley, guerrilla gardener in Los Angeles, https://www.youtube.com/watch?v=EzZzZ_qpZ4w

- MHP Chapter 3. Food, nutrition, and community design
- MHP Chapter 17. Climate change, cities, and health
- MHP Chapter 18. Community resilience and healthy places
- Dannenberg AL, Frumkin H, Hess JJ, Ebi KL. Managed retreat as a strategy for climate change adaptation in small communities: public health implications. *Climatic Change*. 2019; 153(1), 1-14. https://doi.org/10.1007/s10584-019-02382-0
- Satterthwaite D, Archer D, Colenbrander S, Dodman D, Hardoy J, Mitlin D, Patel S. Building resilience to climate change in informal settlements. *One Earth*. 2020; 2(2):143-156. https://doi.org/10.1016/j.oneear.2020.02.002

January 26

READING REFLECTIONS FOR WEEKS 1 TO 4 DUE by 5:00pm

NAME OF PARK AUDIT PARTNER DUE by 5:00pm (send email to instructor)

A. **Balancing health, equity, and development decisions in planning. Gene Duvernoy, JD, MBA**, President and CEO Emeritus, Forterra, geneduvernoy@hotmail.com
B. **Water and air quality and the built environment; contact with nature**

- MHP Chapter 4. The built environment and air quality
- MHP Chapter 6. Water, health, and the built environment
- MHP Chapter 16. Contact with nature
- Sokolow S, Godwin H, Cole BL. Impacts of urban water conservation strategies on energy, greenhouse gas emissions, and health: Southern California as a case study. *American Journal of Public Health*. 2016; 106(5):941-948. https://ajph.aphapublications.org/doi/pdf/10.2105/AJPH.2016.303053
- South EC, Hohl BC, Kondo MC, et al. Effect of greening vacant land on mental health of community-dwelling adults: a cluster randomized trial. *JAMA Network Open*. 2018; 1(3):e180298. https://jamanetwork.com/journals/jamanetworkopen/issue/1/3

February 2

PARK AND STREET AUDIT DUE by 5:00pm

A. **Data science and designing healthy places. Tzu-Hsin Karen Chen, PhD,** Donnelley Postdoctoral Associate, Yale University School of the Environment, karen.t.chen@yale.edu
B. **Using metrics in the built environment. Arthur Wendel, MD, MPH**, Medical Officer, Environmental Medicine and Health Systems Intervention Section, Office of Capacity Development and Applied Prevention Science, Agency for Toxic Substances and Disease Registry, Seattle, dvq6@cdc.gov
C. **Mental health and social capital**
D. **Discussion of park audit and research paper assignments**

- MHP Chapter 7. Built environments, mental health, and well-being
- MHP Chapter 8. Social capital and community design
- MHP Chapter 22. Measuring, assessing, and certifying healthy places
- Rundle AG, Bader MDM, Mooney SJ. Machine learning approaches for measuring neighborhood environments in epidemiologic studies. *Current Epidemiology Reports*. 2022;9(3):175-182. http://doi.org/10.1007/s40471-022-00296-7
- Schwartz AJ, Dodds PS, O'Neil-Dunne JP, Danforth CM, Ricketts TH. Visitors to urban greenspace have higher sentiment and lower negativity on Twitter. *People and Nature.* 2019; 1(4), 476-485. http://doi.org/10.1002/pan3.10045

February 9

A. **Gentrification and displacement. Donald King, FAIA/NOMA,** Affiliate Professor, Dept. of Architecture, University of Washington, donald@mimarpacific.com
B. **Redevelopment of Yesler Terrace. Terry Galiney,** Director of Development, Seattle Housing Authority, terry.galiney@seattlehousing.org
C. **Healthy homes**

- MHP Chapter 9. Inequity, gentrification, and urban health
- MHP Chapter 12. Healthy homes
- Dsouza N, Serrano N, Watson KB, et al. Exploring residents' perceptions of neighborhood development and revitalization for active living opportunities. *Preventing Chronic Disease* 2022; 19:220033. https://doi.org/10.5888/pcd19.220033

- Serrano N, Realmuto L, Graff KA, et al. Healthy community design, anti-displacement, and equity strategies in the USA: A scoping review. *Journal of Urban Health*. 2023. https://doi.org/10.1007/s11524-022-00698-4
- Aboelata MJ, Bennett R, Yañez E, Bonilla A, Akhavan N. Healthy development without displacement: realizing the vision of healthy communities for all. Prevention Institute. 2017. 27 pages. https://www.preventioninstitute.org/publications/healthy-development-without-displacement-realizing-vision-healthy-communities-all

February 16

RESEARCH PROJECT PAPERS DUE by 5:00pm

A. Jobs in healthy community design. Richard Gelb, MES, Environmental Planner, Public Health - Seattle & King County, Richard.Gelb@kingcounty.gov; **Cailin Henley, MPH,** Safe Routes to School Coordinator, City of Tacoma**,** CHenley@cityoftacoma.org**; Keri Moore, MPH**, Healthy Communities Specialist, Snohomish Health District, kmoore@snohd.org; **Cindy Haverkamp**, **MA**, Climate and Health Coordinator, Social, Economic, and Environmental Conditions for Health, Tacoma Pierce County Health Department, CHaverkamp@tpchd.org

B. Healthy places across life span, policy and legislation, community engagement

- MHP Chapter 10. Healthy places across the life span
- MHP Chapter 20. Legislation, policy, and governance for healthy places
- MHP Chapter 21. Community engagement for health, equity, and sustainability
- Jernigan DH, Sparks M, Schwartz R. Using public health and community partnerships to reduce density of alcohol outlets. *Preventing Chronic Disease*. 2013; 11(10):E53.
- Seattle Office of Planning and Community Development. *Equitable Development Implementation Plan*. 2016. Read pages 1-14; skim through rest of 55-page document. https://www.seattle.gov/Documents/Departments/OPCD/OngoingInitiatives/EquitableDevelopmentInitiative/EDIImpPlan042916final.pdf

February 23

A. Transportation and land use. Mark Hallenbeck, MS, Director, Washington State Transportation Center; tracmark@uw.edu

B. Behavioral choices and the built environment

- MHP Chapter 11. Transportation, land use, and health
- MHP Chapter 19. Healthy behavioral choices and the built environment
- Boehmer TK, Wendel AM, Bowers F, et al. U.S. Transportation and Health Tool: data for action. *Journal of Transport and Health*. 2017; 6:530-537.
- Dumas BL, Harris DM, McMahon JM, et al. Prevalence of municipal-level policies dedicated to transportation that consider food access. *Preventing Chronic Disease* 2021; 18:210193. https://doi.org/10.5888/pcd18.210193
- Whitehurst DGT, DeVries DN, Fuller D, Winters M. An economic analysis of the health-related benefits associated with bicycle infrastructure investment in three Canadian cities. *PLoS ONE* 2021; 16(2): e0246419 https://doi.org/10.1371/journal.pone.0246419

March 2

A. Green architecture, healthy buildings. Heather Burpee, M Arch, Research Associate Professor, UW Department of Architecture; Integrated Design Lab; burpeeh@uw.edu; **Marissa Rainbolt, MPH**, Health Scientist/Project Manager, 9 Foundations, marissa.rainbolt@9foundations.com

B. Healthy workplaces, healthcare settings, and schools

- MHP Chapter 13. Healthy workplaces
- MHP Chapter 14. Healthy healthcare settings
- MHP Chapter 15. Healthy schools
- Chauvin J, Pauls J, Strobl L. Building codes: an often overlooked determinant of health. *Journal of Public Health Policy*. 2016; 37(2):136-148.
- McArthur JJ, Powell C. Health and wellness in commercial buildings: Systematic review of sustainable building rating systems and alignment with contemporary research. *Building and Environment.* 2020; 171: 106635. https://doi.org/10.1016/j.buildenv.2019.106635

March 9:

READING REFLECTIONS FOR WEEKS 5 TO 10 DUE by 5:00pm

A. Student presentations in class: Two-minute testimony

B. Innovative technologies; COVID and the built environment; future built environments

- MHP Chapter 24. Innovative technologies for healthy places
- MHP Chapter 26. COVID and the built environment: lessons learned
- MHP Chapter 27. Healthy, equitable, and sustainable built environments for the future
- Rollings KA, Dannenberg AL, Frumkin H, Jackson RJ. Built environment and health: 20 years of progress. Submitted to *American Journal of Public Health,* February 2023
- Giles-Corti B, Moudon AV, Lowe M, et al. What next? Expanding our view of city planning and global health, and implementing and monitoring evidence informed policy. *Lancet Global Health*. 2022; 10:e919-e926. https://doi.org/10.1016/S2214-109X(22)00066-3

Optional course readings

- MHP Chapter 23. Training the next generation of healthy placemakers (includes discussion of job opportunities in the field)
- MHP Chapter 25. Healthy places research: emerging opportunities
- MHP Glossary
- Urban Land Institute. *Building Healthy Places Toolkit: Strategies for Enhancing Health in the Built Environment*. Washington, DC: Urban Land Institute, 2015. 95 pages. http://uli.org/wp-content/uploads/ULI-Documents/Building-Healthy-Places-Toolkit.pdf
- American Planning Association. *Planning for Equity Policy Guide*. 2019. 29 pages. https://planning.org/publications/document/9178541/
- ChangeLab Solutions. Preserving, protecting, and expanding affordable housing. Executive Summary. 2015. http://www.changelabsolutions.org/sites/default/files/Preserving_Affordable_Housing-EXECUTIVE_SUMMARY_FINAL_20150401_0.pdf

Class discussions of readings

All assigned readings should be completed prior to class. We plan to allow time for discussion of the readings in the second hour of our class sessions. For the *MHP* book chapters, there are Discussion Questions at the end of each chapter that we may discuss as time permits.

Class activities/requirements

Reading Reflections: **DUE DATES: January 26 and March 9**

For **each** of the five assigned readings each week (chapters and articles), write one paragraph (typically ¼ to ½ page long, single-spaced) responding to the following questions:

"Considering the focus of the class on health and built environment issues,

a. Should the reading be used in this course next year, using scale of 1 (definitely delete) to 5 (definitely keep)? Put this score on a line by itself, not in the text of the reflection.
b. What information in the reading was new to you?
c. How does the information in the reading relate to your background and interests?
d. How might the information in the reading be useful to you in your future work?"

Deliverables: Set of reading reflections accumulated into a file (Part 1 and Part 2) uploaded to Canvas. Within each set of reading reflections, use MHP chapter number and title or article author and title as subheadings to clearly identify the reading to which the reflection belongs.

DUE January 26: Reflections Part 1 covering weeks 1 to 4 of readings

DUE March 9: Reflections Part 2 covering weeks 5 to 10 of readings

Field exercise: Park and Street Audit DUE DATE: February 2

1. Review combined park and street audit tool posted on Canvas under "Files".
2. Email instructor with student names in working pairs no later than **January 26**.
3. Work in pairs with a classmate from another college or school (such as CBE and SPH) to conduct an audit of one local park and an adjacent street that leads to the park. **Please wear masks and keep appropriate social distancing with your partner.**
4. Deliverables to be uploaded in a single file to Canvas, clearly labeled to indicate who worked in your pair:
   a) Map of park and adjacent street with key features noted. The map can be from the web, or hand-drawn, or a photo of a map found in the park.
   b) Completed audit tool for that park and street, including recommendations for how that park and street could be improved.
   c) Up to 10 digital photographs highlighting important features – please use low resolution photos. Include brief captions with each photograph.

Research project paper: DUE DATE: February 16

Review research topics and methods listed in:

a. *Making Healthy Places* Chapter 25. Healthy places research: emerging opportunities
b. Dannenberg AL, Rodriguez DA, Sandt LS. Advancing research in transportation and public health: a selection of twenty project ideas from a U.S. research roadmap. *Journal of Transport and Health.* 2021; 21:101021. https://doi.org/10.1016/j.jth.2021.101021

Select a topic of interest from these sources. Write a 3 to 5 page single-spaced paper first describing briefly why the topic is important, and then describing in more detail how you would design a research project to add to our knowledge about this topic. References are allowed but are not necessary. Paper should include:

- Proposed study design
- Types of skills research team would need
- Characteristics of a study population (and of comparison group if needed)
- Data sources
- Methods such as surveys, informant interviews, use of existing datasets
- Types of analyses
- Ethics concerns (if any); need for human subjects approval
- Types of results that might be found in such a study
- Possible implications of such results.

Deliverable: 3 to 5 page single-spaced paper uploaded to Canvas.

Two-minute testimony: DUE DATE: March 9

1. Pick a current topic related to a proposed change in the built environment (locally or elsewhere) that has health implications.
2. Prepare a two-minute oral testimony that might be delivered to a city council, legislature, zoning board, or other decision-making group conveying the health concerns about the project and how it might be improved to promote health or mitigate adverse health impacts.

   Deliverable: Upload the topic of your testimony to Canvas (one sentence or less) and give a timed 2-minute oral presentation **during March 9 class**. Do not submit a written version of what you present to the class.

The topic you pick may be a real or fictional and may be from Seattle or your hometown or elsewhere. You may find a topic in the local newspaper. The proposed project may be favorable to health that you want to support or could be harmful for health that you want to discourage. Your task is to convey to the decision-makers in 2 minutes the impact of the proposal on health and urge them to consider health as part of their decision. Feel free to be creative on your topic. Some examples of possible topics –

- A Stay Healthy Streets bill to permanently designate 100 miles of local streets for use by pedestrians and bicyclists while banning through traffic
- A bill to close three nearby community schools and build one large new school on inexpensive land farther from the students it serves
- A bond issue to provide more funding for new parks and for maintaining existing parks
- A bill to build a new sports stadium and demolish homes of 1000 low-income persons
- A bill requiring 10% of city transportation funds be used to improve bicycle and pedestrian infrastructure
- A proposal to allow e-scooters on all roads, trails, and sidewalks in the city
- A bill to set aside land for more community gardens (P patches) in the city
- A proposal to remove minimum parking standards for all new residential and commercial construction in the city of Seattle

The format of your 2 minute testimony should be as follows:

- First introduce yourself: “I am [*your real name*] representing XYZ organization (real or fictional) or speaking as a public health professional or as a concerned citizen”
- State that the location today is Seattle City Council or wherever
- State that the topic today is the proposed bill to do …… (one sentence maximum)
- State succinctly how the proposed bill affects health and the built environment
- Mention and respond to arguments made by those who disagree with your position
- Conclude with how you are urging the decision-maker to vote or to improve the proposal

WINTER QUARTER RESPIRATORY ILLNESSES - PROTOCOLS AND SAFETY

Winter quarter is a time of increased risk of acquiring respiratory illnesses including COVID, RSV, cold, and flu. If you feel ill or exhibit respiratory or other symptoms, you should not come to class. Seek medical attention if necessary and notify your instructor(s) as soon as possible by email.

Please check your email daily BEFORE coming to class. If we need to conduct class remotely because the instructor or a guest speaker is unable to attend in person, we will send all registered students an email with a Zoom link for remote instruction or a plan for making up the class.

Additional recommendations include:

1. **Get boosted with the updated COVID-19 vaccines.** These vaccines are available at clinics and pharmacies, as well as through UW Medicine and local health agencies.
2. **Get your annual flu shot.**
3. **Wear a high-quality mask in indoor public spaces and while traveling. Masks are strongly recommended the first two weeks of winter quarter.** High-quality masks help protect against a range of respiratory viruses, and are available for free in locations on each UW campus.
4. **Take a coronavirus test if you have symptoms or have been exposed. R**apid antigen tests are widely available for free in at on campus locations linked here. The Husky Coronavirus Testing voluntary research study is also available for UW students.
5. **Activate WA Notify on your phone** to receive exposure notifications and so that you can anonymously let others know of their exposure if you test positive.

LAND ACKNOWLEDGEMENT

The University of Washington acknowledges the Coast Salish people of this land, the land which touches the shared waters of all tribes and bands within the Duwamish, Suquamish, Tulalip, and Muckleshoot nations.