

## **Sociology 7017: POPULATION AND THE ENVIRONMENT**

Wednesdays 3:00-5:20, HLMS 196  
Fall Semester, 2014

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**OVERVIEW:** This course provides an overview of social science theory and research relating human population to environmental context. Population processes -- fertility, mortality and migration -- have reciprocal relationships with land, air, and water environments. Through the reading, writing and dialogue in this class, you will develop a strong foundational understanding of these associations.

In this course, the “environment” is defined as aspects of context associated with processes and characteristics of the natural environment. In this way, we do not focus on, for example, neighborhood contextual effects that are purely social – we do, however, examine neighborhood effects as related to toxic exposure as an environmental contaminant.

We also explore the socio-demographic dimensions of the values and perceptions which individuals hold regarding the environment, in addition to human population dynamics related to climate change, and the ways in which gender mediates human-environment associations. Specific regional research allows the opportunity to consider the ways in which demographic processes exert influences on these environmental resources, as well as the ways in which environmental characteristics exert influence on demographic processes. Finally, we spend two weeks examining aspects of the social distribution of environmental hazards, an issue termed “environmental inequality.”

The readings represent recent academic research from multiple social science disciplines but with a focus on social demographic scholarship drawn predominantly from sociology but also from geography, economics, and anthropology. Through the course of the semester, we will examine theoretical and empirical work at local, national, regional, and international scales, exploring a wide range of domestic and international issues that relate to human-environment interactions.

Another central focus is more general discussion on the dissemination of scholarly research. Each week, we'll explore ideas for communicating findings to broader audiences.

**SPECIFIC AIMS:** Following this course, students should be familiar with:

- ◆ demographic dynamics;
- ◆ several theoretical perspectives from the social sciences used to examine interactions between population dynamics and environmental context;
- ◆ specific examples of recent social science research on the social dimensions of environmental context, including connections with population processes such as fertility, mortality and migration;
- ◆ specific examples of recent social science research on the reciprocal effect of environmental factors on demographic processes;
- ◆ the role of mediating factors (e.g., technology, policy, culture) in shaping the relationship between population and the environment;
- ◆ the methodological dilemmas characterizing social and natural science linkages;
- ◆ barriers and opportunities for communicating research findings.

READINGS: The weekly readings represent journal articles and book excerpts offering a glimpse of current research on each topic. The readings are available via our D2L site.

EVALUATION: The grade for this course will be based upon:

*Percentage of final score*

Weekly Article Summaries, Discussion Board	20
Class Participation	20
1 research dissemination article (due Wed, Dec 10)	30
Final "Comprehensive" Exam (during finals week)	30

**Research Dissemination Practice: Web Articles**

A key aspect of this course is discussion and practice with research dissemination. Prof. Hunter writes regularly for the outreach group Population Reference Bureau (PRB) based in Washington DC and her experience will form the foundation for our dialogue and writing aimed at communication of scientific findings.

PRB "web articles" offer summaries of population-environment scholarship accessible to the general public. They are used by educators, policymakers and media representatives. Past students have also published their work through WorldWatch. Here are some examples:

- Lucy McAllister, [The Human and Environmental Effects of E-Waste](#)  
(42,000+ downloads)
- Michele Beach, [Urban Agriculture Increases Food Security for the Poor](#)  
(10,000+ downloads)
- Jessie Luna, [Hunting Musk Oxen and Building High Tunnels in the Arctic](#)

Students are asked to identify 2 organizations engaged in research dissemination related to population-environment topics. Your articles will be targeted at these organizations, so become familiar with the type of work they publish, both in content and form. PRB is but one example: [www.prb.org](http://www.prb.org).

On Wednesday, Sept 17, students will present 2 organizations, 3 ideas for a 800-word web summaries for submission to their identified outlets, and 2 relevant citations for each of the 3 ideas.

Weekly updates will be provided until Wed, Oct 22nd, when students will commit to a topic by submitting to Lori an outline with at least 3 core references. On Wed, Nov 12th, students will submit a first draft for comment – Lori will return these Nov 19<sup>th</sup>. On Wed, Dec. 10th, students will submit a final version and a presentation based on the short paper and including discussion of the process through which the paper evolved, challenges faced, and strategies for completion.

**Final "Comprehensive" Exam:**

On a pre-arranged date during finals week -- of your choice -- students will be given two questions, each to be answered within 4-5 pages, double-spaced. The questions will be handed out at 8:00 a.m., to be returned by 5:00 p.m. The format is designed to reflect what could be expected from a doctoral comprehensive examination -- as such, the questions will be 'big-picture' requiring synthesis across weekly material and critique.

**Weekly Article Summaries / Provocations:**

Each student is responsible for a *brief* (no more than 1-paragraph) commentary on *each* of the assigned readings -- this will be submitted to the D2L dropbox for that week prior to the 3:30 start of class.

In addition, we will engage the D2L discussion board through the week -- 3 posts are required through the week, each on a different reading. They should be posted by Fri, Sun, and Tues -- 10pm deadline each day.

Students are also required to respond to at least 2 other postings through the course of the week.

**Class Participation:**

Intellectual discourse is central to the learning process and to this course. However, class participation is not based strictly on *quantity*, but also *quality*. Remember to ground your comments in the material we are reading, and to respect other points of view.

*Please come see me, call me, or send an E-mail, if you have any questions, concerns, or problems!*

**University Policies**

If you qualify for accommodations because of a disability, please submit to your professor a letter from Disability Services in a timely manner (for exam accommodations provide your letter at least one week prior to the exam) so that your needs can be addressed. Disability Services determines accommodations based on documented disabilities. Contact Disability Services at 303-492-8671 or by e-mail at [dsinfo@colorado.edu](mailto:dsinfo@colorado.edu).

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## DETAILED SCHEDULE

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### WEEK 1 AUG 27

#### INTRODUCTION AND OVERVIEW

- ◆ Review syllabus
- ◆ Review pages 3-12 of McFalls (Fertility, Mortality)

Read, and we'll review, pages 3-12 of McFalls, Joseph A., Jr. 2007. "Population: A Lively Introduction." *Population Bulletin* 62(1).

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### WEEK 2 SEPT 3

#### THE BASICS OF POPULATION DYNAMICS

*McFalls offers a very basic introduction to demographic processes and population patterns as exhibited across the globe -- useful background for our semester. In your paragraph for this, note a few points that were new to you.*

- McFalls, Joseph A., Jr. 2007. "Population: A Lively Introduction." *Population Bulletin* 62(1)1-31.
  - <http://www.prb.org/pdf07/62.1LivelyIntroduction.pdf>

*In your paragraph for the data sheet, please pull out three contrasts you identify that are of particular interest, especially as related to environmental issues. Put forward a hypothesis for each, and discuss how you might investigate these differences*

- Population Reference Bureau. 2013 *World Population Data Sheet*, plus 1-page of key findings.

[http://www.prb.org/pdf13/2013-population-data-sheet\\_eng.pdf](http://www.prb.org/pdf13/2013-population-data-sheet_eng.pdf)

<http://www.prb.org/Publications/Datasheets/2013/2013-world-population-data-sheet/data-sheet.aspx>

#### DEMOGRAPHY AND THE ENVIRONMENT

*Demography, as a science, does not have a strong history of integrating environmental dimensions. These two readings represent Presidential addresses to the Population Association of America, each calling for more integration of context within population research. Please read these "calls to action", and in your paragraph, briefly discuss the reasons why demographers have historically sidelined environmental issues – and explore possible new futures.*

- Pebley, Anne R. 1998. "Demography and the Environment." *Demography*. Vol. 35, No. 4, November: 377-389.
- Entwisle, Barbara. 2007. "Putting People into Place." *Demography*. Volume 44-Number 4, November 2007: 687-703.

*Also as part of this week's reflection prior to class, please take your insight from Pebley and Entwisle and return to the PRB website. Review some recent web articles and identify two that illustrate, in your opinion, interesting linkages between population dynamics and environmental factors. Bring these ideas to class.*

## ENVIRONMENTAL ACTIVISM AND THE POPULATION “DEBATE”

The Sierra Club’s longstanding challenge with if/how to integrate population issues into its programming offers an excellent example of the “hot potato” nature of population-environment issues. Here, I ask you to review material on two sides of this debate, and we’ll engage in a class discussion on the challenges population poses to environmental organizations. Please also craft a short paragraph that reflects your perception of the Sierra Club’s stand.

<http://www.sierraclub.org/population/>

<http://www.susps.org/history/history.html>

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WEEK 3

WED, SEPT 10

### THEORETICAL FRAMEWORKS:

#### DIFFERING PERSPECTIVES ON POPULATION-ENVIRONMENT INTERACTIONS

These pieces offer an overview of a variety of approaches – in your short paragraph summaries of the articles, please note approaches that particularly appeal to you, and why. Also note limitations you see in others.

#### Prof. Andrew Jorgenson will visit (by SKYPE) for Q&A for 20 minutes

- Diana Hummel, Susana Adamo, Alex de Sherbinin, Laura Murphy, Rimjhim Aggarwal, Leo Zulu, Jianguo Liu, Kyle Knight. 2013. “Inter- and transdisciplinary approaches to population– environment research for sustainability aims: a review and appraisal.” *Population and Environment*. 34(4), 481-509.
- Lepczyk, Christopher A., Marc Linderman, and Roger B. Hammer. 2012. Integrating ecology and demography to understand the interrelationships between environmental issues and rural populations. Chapter 23 in *International Handbook of Rural Demography*.

#### Methodological examples

In your summary of these research examples, please simply note the key points of each approach – and note what theoretical perspective as reviewed by Hummel et al, the method best speaks to – but again, offer a critical reflection. Does the approach appear useful to you? What might be its limitations?

Also, please find an ABM on a different pop-env question to bring as an example to class! Write a 1-para summary for submission to D2L along with the other writings for this week.

- Jorgenson, A. K., & Clark, B. (2013). The relationship between national-level carbon dioxide emissions and population size: an assessment of regional and temporal variation, 1960–2005. *PloS one*, 8(2), e57107.
- Miller, Brian W., Ian Breckheimer, Amy L. McLearty, Liza Guzman-Ramirez, Susan C. Caplow, Jessica C. Jones-Smith, and Stephen J. Walsh. 2010. Using stylized agent-based models for population–environment research: a case study from the Galapagos Islands. *Population and Environment*. 31:401–426.

**ENVIRONMENTAL DIMENSIONS OF HEALTH & MORTALITY**

**Students briefly present 2 dissemination organizations, 3 ideas for research dissemination article, and at least 2 citations for each.**

*There is a vast literature in environmental health, spread across many disciplines such as Public Health, Epidemiology, Geography, Demography. These pieces offer just a small glimpse into this literature. In your review, please note other arenas of health and mortality that might benefit from a demographic perspective.*

**Prof. Sanyu Mojola will visit for Q&A for 20 minutes**

- Excerpts from Ichiro Kawachi and S.V. Subramanian. 2005. Health Demography, Chapter 26 in Handbook of Population. Poston and Micklin (Eds). New York : Kluwer Academic/Plenum.
- van Vuuren, C. L., Reijneveld, S. A., van der Wal, M. F., & Verhoeff, A. P. 2014. Neighborhood socioeconomic deprivation characteristics in child (0–18 years) health studies: A review. *Health & place*, 29, 34-42.
- Powell, L. M., Wada, R., & Kumanyika, S. K. 2014. Racial/ethnic and income disparities in child and adolescent exposure to food and beverage television ads across the US media markets. *Health & place*, 29, 124-131.
- Mojola, Sanyu A. 2011. "Fishing in Dangerous Waters: Ecology, Gender and Economy in HIV Risk." *Social Science & Medicine* 72:149-56.
- Hunter, L. M., W. Twine, and A. Johnson. 2011. "Adult Mortality and Natural Resource Use in Rural South Africa: Evidence From the Agincourt Health and Demographic Surveillance Site." *Society & Natural Resources* 24:256-275.

**ENVIRONMENTAL DIMENSIONS OF FERTILITY**

**Students provide an update on their research dissemination article ideas.**

*Fertility has not received a tremendous amount of attention by Environmental Demographers. As you review these pieces, consider why. Are there aspects of fertility (substantive or methodological), as outlined in the McFalls overview from the first week, that might make it particularly challenging for demographers to link to environmental context? What do the empirical pieces included here have to offer with regard to understanding the fertility-environment connection? What are their limitations?*

- CLASSIC: Easterlin, Richard. 1971. Does Human Fertility Adjust to the Environment? *The American Economic Review*, Vol. 61, No. 2, Papers and Proceedings of the Eighty-Third Annual Meeting of the American Economic Association (May): 399-407.
- Brauner-Otto, Sarah R. 2014. Environmental quality and fertility: the effects of plant density, species richness, and plant diversity on fertility limitation. *Population and Environment*. Vol. 36(1): 1-31.
- Biddlecom, Ann E., William G. Axinn, and Jennifer Barber. 2005. Environmental Effects on Family Size Preferences and Subsequent Reproductive Behavior in Nepal. *Population and Environment*. Vol. 26, No. 3: 183-206.
- Shreffler, Karina M. and R. Nii-Amoo. DoDoo. 2009. The role of intergenerational transfers, land, and education in fertility transition in rural Kenya: the case of Nyeri district. *Population and Environment*. 30:75–92

- Arnocky, Steven, Darcy Dupuis, and Mirella L. Stroink. 2012. Environmental concern and fertility intentions among Canadian university students. *Population and Environment*. 34:279–292.
- Hahn, Sigrid, Natasha Anandaraja, and Leona D’Agnes. 2011. Linking population, health and the environment: an overview of integrated programs and a case study in Nepal. *Mount Sinai Journal of Medicine*. 78:394–405.

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## WEEK 6      OCT 1

### ENVIRONMENTAL DIMENSIONS OF MIGRATION I

**Students provide an update on their research dissemination article ideas.**

*Demographic scholarship on migration has blossomed in the past few years. What factors might have led to this intensified attention? What do you see as key strengths of the approaches/data/research outlined below? What limitations?*

- Excerpts from Weeks, John R. 2012. Migration, Chapter 7 in *Population: An Introduction to Concepts and Issues*. Wadsworth Publishing: Belmont CA.
- Black, Richard, W. Neil Adger, Nigel W. Arnell, Stefan Dercon, Andrew Geddes, D.S.G. Thomas. 2011. The effect of environmental change on human migration. *Global Environmental Change*. 21S (2011) S3–S11.
- Fussell, E., Hunter, L. M., & Gray, C. L. 2014. Measuring the Environmental Dimensions of Human Migration: The Demographer’s Toolkit. *Global Environmental Change*. Vol. 28(September): 182-191.
- Warner, K. 2011. Environmental change and migration: methodological considerations from ground-breaking global survey. *Population and environment*, 33(1), 3-27.
- McLeman, Robert A. and S. Kate Ploeger. 2012. Soil and its influence on rural drought migration: insights from Depression-era Southwestern Saskatchewan, Canada. *Population and Environment*. 33:304–332.
- Watch: *Climate Refugees*

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## WEEK 7      OCT 8

### ENVIRONMENTAL DIMENSIONS OF MIGRATION II

**Students provide an update on their research dissemination ideas.**

*This cluster of work represents the many empirical studies coming out in the past few years linking various aspects of the environment to migration. What challenges are faced by regional/national case studies? How would you suggest the field move forward?*

- Gray, C., & Bilsborrow, R. 2013. Environmental influences on human migration in rural Ecuador. *Demography*, 50(4), 1217-1241.
- Nawrotzki, R. J., Riosmena, F., & Hunter, L. M. 2013. Do rainfall deficits predict US-bound migration from rural Mexico? Evidence from the Mexican census. *Population Research and Policy Review*, 32(1), 129-158.
- Morrissey J.W. 2013. Understanding the relationship between environmental change and migration: The development of an effects framework based on the case of northern Ethiopia. *Global Environmental Change*. 23(6), 1501-1510.

- Scheffran, J., Marmer, E., & Sow, P. 2012. Migration as a contribution to resilience and innovation in climate adaptation: Social networks and co-development in Northwest Africa. *Applied Geography*, 33, 119-127.
- Carr, E. R. 2005. Placing the environment in migration: environment, economy, and power in Ghana's central Region. *Environment and Planning*, 37(5), 925-946.
- Hunter, LM, J. Luna and R. Norton. Under review. The environmental dimensions of migration. *Annual Review of Sociology*.

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**WEEK 8**

**OCT 22**

### **SOCIO-DEMOGRAPHIC DIMENSIONS OF ENV PERCEPTIONS, VALUES**

**Students commit to a topic for PRB article, with 3 peer-reviewed research manuscripts included.**

*The literature examining environmental concern, values, and trends in these, began to emerge in the 1980s-1990s. As the years progressed, research became more nuanced in its exploration of socio-demographic determinants. These papers represent a collection of that branch of scholarship. Do you find the demographic perspective useful as related to this topic. What could you see as the next step(s) in this line of inquiry?*

- Dunlap, Riley E. and Robert Emmet Jones. 2002. "Environmental Concern: Conceptual and Measurement Issues." Pp. 482-524 in R.E. Dunlap, W. Michelson (eds.) *Handbook of Environmental Sociology*. Westport, CT: Greenwood Press.
- Seager, J. 2003. Rachel Carson Died of Breast Cancer: The Coming Age of Feminist Environmentalism. *Signs*: 28(3): 945-972.
- McCright, Aaron M. 2010. The effects of gender on climate change knowledge and concern in the American public. *Population and Environment*. 32(1): 66-87.
- Howell, R. A. 2013. It's not (just) "the environment, stupid!" Values, motivations, and routes to engagement of people adopting lower-carbon lifestyles. *Global Environmental Change* 23(1), 281-290.
- Feinberg, M. & Willer R. 2013. The moral roots of environmental attitudes. *Psychological Science* 24(1): 56-62.

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**WEEK 9**

**OCT 29**

### **ENVIRONMENTAL INEQUALITY I**

*Environmental inequality takes a variety of forms, but these forms tend to fall along socio-demographic lines. As you read this collection, consider next steps – with the emerging (emergent?) literature documenting environmental disparities, what should be the next step for the demographic research community?*

**Prof. Jill Harrison will visit for Q&A for 20 minutes**

- Schlosberg, D. 2013. Theorising environmental justice: the expanding sphere of a discourse. *Environmental Politics*, 22(1), 37-55.
- Chakraborty, Jayajit, Juliana A. Maantay, and Jean D. Brender. 2011. Disproportionate Proximity to Environmental Health Hazards: Methods, Models, and Measurement. *American Journal of Public Health*. Dec: pS27-236.



- Crowder, Kyle and Liam Downey. 2010. Interneighborhood Migration, Race, and Environmental Hazards: Modeling Microlevel Processes of Environmental Inequality. *American Journal of Sociology*. 115(4): 1110-1149.
- Harrison, Jill. 2008. Abandoned bodies and spaces of sacrifice: Pesticide drift activism and the contestation of neoliberal environmental politics in California. *Geoforum*. Volume 39, Issue 3, May 2008, Pages 1197-1214.
- Altman, Rebecca Gasior, Rachel Morello-Frosch, Julia Green Brody, Ruthann Rudel, Phil Brown, and Mara Averick. 2008. "Pollution Comes Home and Gets Personal: Women's Experience of Household Chemical Exposure." *Journal of Health and Social Behavior*. 49: 417-435.

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## WEEK 10

NOV 2

### ENVIRONMENTAL INEQUALITY II

*This week focuses on one setting and through an explicitly gendered lens. Again, what should be the next step for the demographic research community? What are relevant policies/programs?*

- Bell, S. E. 2013. *Our Roots Run Deep as Ironweed: Appalachian Women and the Fight for Environmental Justice*. University of Illinois Press.

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## WEEK 11

NOV 5

### POPULATION DYNAMICS AND CLIMATE CHANGE

*Only recently have demographic dynamics begun to be considered as an element of climate futures. This cluster of papers illustrates how population dynamics matter to climate as well as exploring some specific ways they're being integrated into climate projections. Why do you think demography was left behind in early climate modeling? In addition to the ways reflected by the paper's below, can you think of other avenues through which the demographic perspective can be more centrally integrated in the future?*

- Jiang, Leiwen and Karen Hardee. 2011. How do recent population trends matter to climate change? *Population Research and Policy Review*. 30(2): 287-312.
- Zagheni, Emilio. 2011. The Leverage of Demographic Dynamics on Carbon Dioxide Emissions: Does Age Structure Matter? *Demography*. 48:371-399.
- O'Neill, Brian C., Michael Dalton, Regina Fuchs, Leiwen Jiang, Shonali Pachauri, and Katarina Zigov. 2010. Global demographic trends and future carbon emissions. *Proceedings of the National Academy of Sciences (PNAS)*. 107, 41: 17521-26.
- Curtis, K. J. and A.M. Schneider. 2011. "Understanding the demographic implications of climate change: estimates of localized population projections under future scenarios of sea-level rise." *Population and Environment*. 33: 28-54.
- Hunter, LM & O'Neill, BC 2014. Enhancing engagement between the population, environment, and climate research communities: shared socio-economic pathway process. *Population and Environment*, 35(3), 231-242.

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## WEEK 12

NOV 12

- Topic to be determined based on student interests!
- **Students submit first draft of research dissemination article.**

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**WEEK 13      NOV 19**

**DEMOGRAPHY OF DISASTERS**

*The disaster research community is vast and widely interdisciplinary. Here are some papers that have a demographic dimension. In what other ways you can imagine social demographers contributing to our understanding of disaster vulnerability, impacts, and recovery processes?*

**Prof. Beth Fussell will visit via SKYPE for Q&A for 20 minutes.**

- Tierney, Kathleen. 2014. Chapters 1-3 in *The Social Roots of Risk*. Stanford University Press, Palo Alto CA.
- Fussell, E., & Lowe, S. R. 2014. The impact of housing displacement on the mental health of low-income parents after Hurricane Katrina. *Social Science & Medicine*, 113, 137-144.
- Ford, James D. 2012. Indigenous Health and Climate Change. *American Journal of Public Health*. Vol. 102 Issue 7: 1260-1266.
- Chen, W., Cutter, S. L., Emrich, C. T., & Shi, P. (2013). Measuring social vulnerability to natural hazards in the Yangtze River Delta region, China. *International Journal of Disaster Risk Science*, 4(4), 169-181.
- Neumayer, E., Plümper, T., & Barthel, F. 2014. The political economy of natural disaster damage. *Global Environmental Change*, 24, 8-19.

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**WEEK 14      THANKSGIVING BREAK**

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**WEEK 15      DEC 3**

- Work week for research dissemination articles and presentations

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**WEEK 16      DEC 10      ARTICLE PRESENTATIONS**

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**FINAL EXAM WEEK**

- Take home exam, date to be determined by each student