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## THE UNIVERSITY OF BRITISH COLUMBIA



Geography 450, Section 201  
**Urban Research**  
January-May 2012, 3 credits

Tuesdays, 9:00 AM to Noon, Geog 115  
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<http://www.geog.ubc.ca/~ewyly/g450.html>  
Office hours: Mondays 9:00-12:00, Tuesdays 12 noon after class

*Calendar description:* Individual or group primary research. Instructor and content vary and it may be offered over 2 terms. Details available from Geography Undergraduate Advisor from April 1 preceding the course. Not necessarily offered each year.

*A bit more detail:* This is a research-intensive, combined **seminar** and **workshop** devoted to the study of urban social and spatial inequality. Some of our work will be designed as seminar: we will read and discuss articles analyzing such topics as urban housing affordability, transport and commuting dynamics, racial-ethnic and gender divisions in urban employment, and mortgage lending and foreclosures in what is now widely regarded as the worst economic crisis since the Great Depression of the 1930s. But for each of these topics we go beyond reading and discussion: much of our work will be designed as a research methods workshop -- a detailed exploration of the specific techniques that researchers actually use to do certain kinds of urban research.

One way to describe our goal involves a musical metaphor. Some courses are organized as grand symphonies in large concert halls: the orchestra (the professor and the famous names in the textbook) performs the movements of the sonata, and you listen carefully to the composition as it builds to the dramatic crescendo. Then the performance ends (classes end) and you write your reviews (exams, papers, course evaluations).

This course is different. We're more like a struggling garage band looking for our first big break. We don't have time to waste. On the first day, when you walk in, introduce yourself, grab an instrument, and we'll start writing songs and rehearsing. We have a lot of instruments in this garage: you can grab one that you already know, or you can take one that you've always wanted to learn. We'll all make plenty of mistakes -- but we'll correct each other and gradually find a sound and rhythm that works for us. We may have a few solos, but we'll only be successful if we rehearse together.

To put it another way: from day one, start working on an urban question, problem, or issue that interests you. I'll get us started with introductions of some fascinating and urgent questions explored by current and recently-completed graduate students and other colleagues. Throughout the course, I'll use these projects to illustrate simple, systematic methods to analyze secondary datasets in ways that engage with important urban debates over social change, social inequality, and public policy.

### **A Few Thoughts on Methods in Urban Research**

Urban research involves both quantitative and qualitative methods and data. We can use both qualitative and quantitative approaches in this course. There are only two significant restrictions on what we can do. **First**, we will only consider those methods that can be tied to specific methodological traditions that have achieved widespread acceptance for their demonstrated rigor and value. We need to follow in the footsteps of previous generations of researchers who built an intellectual infrastructure for certain types of inquiry -- even if (perhaps *especially* if) we wish to critique the limitations of that infrastructure. It is also important that we be careful about the fit between methods, evidence, and interpretations. Many quantitative researchers like to work with equations, crunch numbers, and calibrate detailed statistical models, but then they make serious mistakes when they draw too many inferences about human meanings, perceptions, interpretations, choices, and subjectivities. You can't do that. Quantitative methods and other "extensive" approaches are suitable only for certain kinds of questions: how common is a particular urban process? Where does it happen most often? Under what kinds of circumstances does it seem more likely to happen? What are the observable characteristics of the people most affected by the process? Sometimes, the quantifiers get lost in their equations.

[Image removed because of Copyright Thugs®. The image shows two scientists at the chalkboard, with two monstrous equations separated by a timid note that says, "and then a miracle occurs." One scientist says to the other: "I think you need to be more specific here in step 2."]

**"Then a Miracle Occurs."** Mathematical and quantitative folks sometimes forget the obvious -- that it's better to be generally right than precisely wrong. Danny Dorling, a quantitative geographer, puts it this way: "Statistics are dull because they are so general -- because so many things can be turned into a percentage; because similar techniques can be used to study so many different processes." Danny Dorling (2003). "Using Statistics to Describe

and Explore Data.” In Nicholas J. Clifford and Gill Valentine, eds., *Key Methods in Geography*. Thousand Oaks, CA: Sage Publications, 369-382, quote from p.370. Cartoon by Sidney Harris, published in *The New Yorker*.

On the other hand, many qualitative researchers dive deeply into theoretical literatures or archival sources, or explore the nuances of a single case study, or the voices of just a handful of people who agreed to be interviewed; this is valuable, but sometimes these researchers make terrible mistakes when they try to draw sweeping generalizations from that single case study or those very few interviews. You can't do that, either. Individual feelings and interpretations matter, but some things require common standards. Qualitative methods and “intensive” approaches are suited to their own distinctive kinds of questions. How does a general urban process work out in the unique circumstances of this particular place, at this particular time? What are these particular people willing to say that might help us learn about how they understand and interpret their urban experience, based on their individual histories, perspectives, and social circumstances?

[Image removed because of Copyright Thugs®. The image shows a little boy at the front of the class, looking up to his teacher. He's just written on the chalkboard, “ $7 \times 5 = 75$ ,” and he says to his teacher, “It may be wrong, but it's how I feel.”

**It's How I Feel.** Individual feelings and interpretations matter, but some things require common standards. There are humorous ways to make this point, and there are serious ones. Elizabeth Warren is a Professor of Law at Harvard who is now serving as the chair of a panel overseeing the \$700-billion bailout passed by the U.S. Congress to deal with the worst global financial crisis since the Great Depression. In a speech several years ago describing an effort by lobbyists to misuse statistics so that Congress would change bankruptcy laws to make things better for banks and worse for consumers, Warren put it this way: “Good studies and bad studies are not ‘mutually canceling.’ Regardless of what some advocates may claim, there are some objective facts and, hence, some objective truths. Whether public policy reflects that reality is not a choice left to those in the academy, but producing and protecting the research itself is our choice and our moral obligation.” Elizabeth Warren (2002). “The Market for Data: The Changing Role of Social Sciences in Shaping the Law.” *Wisconsin Law Review* 2002, 1-34, quote from p. 17. Cartoon by David Sipress, published in *The New Yorker*, January 5.

Our **second** limitation is imposed by UBC and nearly all other educational institutions operating in the Global North. Research ethics rules require that if we wish to do any kind of research that involves human subjects -- for example, doing surveys, interviews, or focus groups -- we must prepare a detailed proposal, research design, questionnaires and/or interview protocols, and submit an ethics review application well before we actually seek out any people to participate. Our schedule makes it impossible to meet the relevant deadlines. Therefore, we will limit ourselves to anonymized, *secondary* data -- data with no personal identifiers that has already been collected by other researchers and/or institutions. Given our limited time, we will focus on the analysis of existing data rather than in-the-field creation of new, primary data. If you're interested in interviews and other kinds of qualitative field research, I highly recommend *Geography 371*.

### *Mixed Methods*

If quantitative methods must be confined to certain kinds of research questions, and qualitative methods have their own limits, how can we see all of the complexity of contemporary cities and urban life? The logical answer to this question involves ‘mixed methods,’ a phrase that is now widely used throughout the humanities and social sciences. Mixed-methods research involves the use of carefully-crafted combinations of quantitative and qualitative methods to understand a

particular process: the different strengths and limitations of various approaches are used to complement one another. One approach picks up where another leaves off, for example: quantitative models can be used to identify and measure particular linkages, or to select specific cases that stand out as distinctive and unusual in certain ways; then qualitative inquiry can be used for an in-depth analysis of those cases. Mixed-methods research is now deeply influential in some disciplines, and is especially popular in interdisciplinary research. It's quite valuable. But it's important to remember three important caveats. First, much of the best work in the social sciences has *always* been mixed-method, long before there were specific books and articles devoted to this new buzzword. It just makes sense to use complementary methods whenever and wherever you can. Second, however, it's easier said than done. It's easy to agree that we should use complementary methods to draw on the distinctive strengths and weaknesses of various approaches. But mixed-methods work sometimes risks superficiality. Learning rigorous qualitative methods takes a lot of time and hard work, just like it takes significant effort to learn quantitative analysis. Rigor, quality, and credibility require expertise. Expertise requires specialization and concentration.

This brings us to the third crucial issue on mixed-methods research. The most common misunderstanding of mixed-methods research is the assumption that one person should be able to do it all. It's true that the best analyses often come from a judicious combination of methods. But it's not true that every individual needs to become an expert in different methods. Indeed, some methodologies are so closely associated with opposing theories of how to acquire knowledge (epistemologies) that it is sometimes impossible to avoid irreconcilable differences or contradictions. But it is often possible for individuals with different backgrounds and skills to come together on common ground, to study a particular issue using their distinctive and complementary approaches. This is the spirit behind the workshop, and the garage-band metaphor.

## **Books**

The methods we'll explore in this course are covered in a variety of texts. Below is a small sample of the books that I've found most useful. These are on reserve at the Geographic Information Centre, Room 112 of the Geography Building. Book purchase is entirely optional.

Ronald Abler, John S. Adams, and Peter Gould (1971). *Spatial Organization: The Geographer's View of the World*. Englewood Cliffs, NJ: Prentice-Hall.

David Harvey (1969). *Explanation in Geography*. London: Edward Arnold.

Martin Cadwallader (1996). *Urban Geography: An Analytical Approach*. Upper Saddle River, NJ: Prentice-Hall.

James E. Burt, Gerald M. Barber, and David L. Rigby (2009). *Elementary Statistics for Geographers*. New York: Guilford Press.

Richard P. Greene and James B. Pick (2011). *Exploring the Urban Community: A GIS Approach*. Upper Saddle River, NJ: Prentice-Hall.

I will be posting additional recommendations on the course schedule, at

<http://www.geog.ubc.ca/~ewyly/g450schedule.html>

## Evaluation and Deadlines

This is an interdisciplinary, research-intensive workshop -- not a transactional information-processing enterprise with infinite emails and electronic messages substituting for real, live, human scholarly discussion and exploration. This means you should read stuff, show up, and work together in a friendly, constructive, and intellectually rigorous manner, and meet the deadlines that are necessary to accomplish (your, our) course objectives. Email maximization is not a course objective (at least not for *me*). If  $A$  is the attention span available for human thought and reflection unmediated by electronic devices and commercial advertising infrastructures, and if  $E$  is the proportion of time spent on electronic substitution of face-to-face communication, then

$$A = \lim_{E \rightarrow \infty} \left( \frac{1}{E} \right)$$

Send me an email if it's necessary, and by all means, set up your own network if you want to have constant contact with your colleagues in the class. Just consider that in the last decade, the ratio ( $R$ ) of unproductive, transactional emails to useful, productive communication has come to be defined as

$$R = \left( \frac{E}{A} \right)$$

Course marks are based on seminar participation (25 percent) and a final paper (75 percent). The final paper should be about twenty-five pages double-spaced, not counting references, tables, maps, and other supporting materials. It is due, with no exceptions, on the last day of examinations as specified in the UBC Academic Calendar. I recommend that you start reading, thinking, and taking notes on ideas for this paper on the very first day we meet. One suggested sequence (among other possibilities) begins with a freewrite/brainstorm, then a topic description, problem statement, literature review, research design, methodological description, presentation of results, and then however many drafts it takes you to achieve a final paper that accomplishes (your, our) objectives. Beginning in the second week, each time we meet, I have a "deadline" and you have an "opportunity": I will read whatever is placed on the table in front of me at the very beginning of class, typed, on one side only of standard 8.5" x 11.0" paper, and I will return it with comments as soon as possible. (I also encourage, but do not require, that you bring a few additional copies to circulate to a few of your colleagues in the seminar for their comments and recommendations). Please familiarize yourself with my guidelines and expectations on the craft of writing, at

<http://www.geog.ubc.ca/~ewyly/guidelines.html>

The weekly deadlines are firm and non-negotiable, but there is no positivist, Comtean observable-measurable penalty for failure to submit. The penalty will be your own self-imposed, Foucauldian phenomenological experience late at night before the day the final grades are being prepared, when you realize your freedom as an individual consumer to disregard the optional deadlines has left you confronting that last, final, non-negotiable final deadline while feeling isolated and fearful in a scholarly enterprise that should be collective, shared, exciting, and transformative. That's what it *will* be if you remind yourself what Peter Gould taught me: "learn" is not a transitive verb.

Various resources and other information will be posted to the course schedule, at

<http://www.geog.ubc.ca/~ewyly/g450schedule.html>

### **Working Groups**

In the first few weeks of the course, we will organize ourselves into several working groups, each focusing on one of the research paths described above. The working groups are designed to provide opportunities for you to share ideas, information, and expertise with your colleagues -- and, if you choose, to work with them as co-authors. Final papers can be completed as collaborative projects -- in which case all co-authors receive the same mark -- or as individual, sole-authored papers. You can choose whether to work individually or as part of a group for your final paper/project. But if you make promises to your colleagues, you must deliver. At its best, collaborative research is an enjoyable and rewarding way to combine the distinctive interests and skill sets of different colleagues and friends in order to do the kind of research that would be difficult or impossible for any individual. But this approach only works when everyone does what they've promised to do, on time. Do not choose the group project option as a strategy to minimize your time commitment to the course: there's a very high probability that you'll be bitterly disappointed if you approach the decision this way. Join a collaborative project if it make sense: collaboration works best when you see the opportunity to combine very different skills, to create something that is qualitatively different from what people working separately could accomplish. But collaboration usually requires more, not less, time to accomplish goals on deadline.

Until the statement of authorship deadline, you have complete freedom in deciding whether to do your final project as an individual or collaborative paper. After the statement of authorship deadline, if you change your mind and wish to withdraw from a group (or join one), you must submit a signed statement in which all of the affected group members agree to your proposed change of plans.

The final paper deadline is firm. This date is as late as possible under UBC regulations. I can't grant any further extensions: as the saying goes, that's above my pay grade. I will submit final grades as soon as I finish reading all submissions received by the final deadline. You can submit to me in person, typed on standard letter-sized paper, or you can submit to [ewyly@geog.ubc.ca](mailto:ewyly@geog.ubc.ca). If you submit by email, you must prepare your submission as a single \*.pdf document, and include "Geog 450 final paper" in the subject line.

All co-authors on collaborative projects must submit separate, confidential notes to me, describing the division of labor amongst all participants. Under most circumstances, all coauthors on collaborative projects will receive the same mark for the final paper; please tell me if there are legitimate reasons to assign marks differently. You can send this by email to ewyly@geog.ubc.ca; you must include “Geog 450 Coauthorship Note” in the subject line.

Statement of authorship deadline	9:00 AM, March 6
Final paper deadline	5:00 PM, Last day of exam period
Coauthorship note	5:00 PM, Last day of exam period

## Schedule

For most of our meetings, we will divide our time between three activities: talking about things we’ve read, learning about a particular technique (with a short lecture by me), and working collaboratively on research projects. The first two activities are important, but only insofar as they support the third.

Below is a tentative schedule for my lectures. You’ll notice that the topics are dominated by quantitative and statistical material. If you’re not quantitatively inclined, do not panic. There are no tests, and so you will not have to memorize how to calculate confidence intervals. You will not have to extract eigenvalues, or derive maximum-likelihood solutions, or memorize the assumptions for the best linear unbiased estimates (BLUE) for an ordinary least-squares regression. But this is an opportunity for you to learn just a little bit about some of these techniques, which are widely used (and abused) throughout the social sciences, in the corporate world, and throughout government organizations as well. Remember that metaphor of the garage band? The schedule below is something like the notes I’ve scrawled on a bar napkin for my instrument. (There the metaphor collapses, because I can’t read music, I can’t play an instrument, and I can’t offer you any of the recreational drugs that are so common in the music biz.)

Keep in mind that this is the tentative schedule for my lectures. If we decide that we need short lectures on other techniques and methodological traditions, then we may very well ask you to consider giving a short presentation. Again, remember that this is a workshop.

Suggested readings and other resources will be posted to the class schedule, at

<http://www.geog.ubc.ca/~ewyly/g450schedule.html>

1. **Introduction.** Course purpose; getting to know your colleagues; inventory of interests and expertise.
2. **Urban Questions.** Epistemological and methodological foundations; urban research questions, presented by mentors, collaborators, current and former students.

3. **Data.** Facts, assumptions, and starting points. Primary and secondary data; institutional considerations; units of observation; summary data vs. microdata; cross-sectional vs. longitudinal data; unique features of spatial data; critical data; the politics of data; introduction to STATA.
4. **Simple Descriptive Statistics.** *de+scribere* (to write). Frequencies, sums, percentages; measures of central tendency; location quotients, growth quotients, and other standardized indices; contingency tables and the simple chi-square test; creating tables and charts in Excel.
5. **Sampling.** Purposes of sampling; anecdotes, case studies, representation, and generalization; types of samples; sampling strategies; the central limit theorem.
6. **Inferential Statistics.** Drawing inferences about a population from a sample. Probability distributions; hypothesis tests and confidence intervals; simple hypothesis tests in STATA.
7. **Correlation and Regression.** Measuring the association between an outcome (dependent variable) and one or more influences (independent variables). Scatterplots, positive correlation, negative correlation, and non-linearity; correlation coefficients; bivariate ordinary least-squares (OLS) regression; multiple regression. Correlation and regression in STATA.
8. **Logistic regression.** Measuring the association between a *binary* outcome and one or more influences (independent variables). Natural logs; the logistic function; maximum likelihood estimation; assessing model fit; odds ratios. Logistic regression in STATA.
9. **Somewhat Less Ordinary Versions of Regression.** Partial decomposition analysis; interaction terms; the expansion method; local indicators of spatial association (LISA) and spatial regression. LISA and spatial regression in GeoDA.
10. **Principal Components Analysis and Factor Analysis.** Measuring the association between many characteristics (variables). Purposes of PCA and factor analysis; geometric illustration of principal components; eigenvalues, eigenvectors, loadings, and scores; rotations. PCA and factor analysis in STATA.
11. **Classification and cluster analysis.** Epistemologies, applications, and implications of classification; the distance measure of similarity; linkage rules; assessing accuracy and meaning in cluster solutions. Cluster analysis in STATA.
12. **Graphical Rhetoric.** Cartographic communication; default=disaster; map interpretation and thick description; power corrupts, but PowerPoint corrupts absolutely; Tufte's principles for graphical communication.
13. **Group and individual presentations.**