

Fall 2012 SYLLABUS for **Eco 323S: Cities as Incubators of Growth**

Professor Neil De Marchi.

How to address me? Neil is fine, as is Prof.

Email: demarchi@econ.duke.edu

Office hours. I do not keep formal office hours but am to be found Tuesdays, Thursdays and portion of most Fridays in the Perk Coffee Shop, in the Von der Heyden Pavilion. If TTh doesn't suit you or you can't find me in the Perk I am pretty flexible and we can arrange a meeting easily enough (I prefer email). I would like to see each of you several times in the course of the semester, especially in regard to the short class presentations I will ask of each of you (in pairs) and in regard to the research paper I ask that you write.

Structure, mechanics and approach

The course comprises roughly two months of reading and discussion organized by topic (August 30 through October 30), excluding October 11 and 16), followed by preliminary presentations of your research papers.

You are asked to team up with one or two others for the first portion. My suggestion is that you also write your research papers as teams, though if you prefer you may write alone.

Your teams should be formed immediately. Each team will be asked to make two short presentations based on designated readings. These must be analytical statements, loaded with criticism of the reading(s) and focused on one or two specific issues that I shall spell out, ideally complemented by others you yourselves identify. These presentations are meant to create a basis for group discussion, the class being a seminar.

In-class short presentations will count 20% of your grade, the research paper 45% (max. 15 typed sides of text. Diagrams, charts other appendixes do not count within the 15-page limit). Papers are due December 7, at 5 pm, preferably sent me as attachments.

A further 20% will be based on specific team research you undertake. One of two options I offer you involves a team *choosing a pair of cities*, both from the same country, but one having suffered sustained decline, the having experienced renaissance following some challenges and setbacks. In the US, Detroit fits the former description, New York City – or Durham NC, the latter. Your second option is to *choose a pair of districts*, one of which has succeeded and the other failed or at least succeeded much less well. Silicon Valley fits the successful type, Route 128 around Boston, the relatively short-lived success type.

The remaining 15% will be based on my subjective assessment of the commitment, flair and substance of in-class interventions you contribute.

My grade scale is: 65-74, C-range; 75-89, B-range; 90+, A-range.

Note that there are no mid-terms nor will there be a final exam.

Focus. The focus of the course is on cities as generators of innovation and thus growth. In the 1920s Henry Ford declared the inner city “doomed” and somewhat later the famous architect Frank Lloyd Wright declared the city superseded and without a future. In both cases the automobile was thought of as the undoing of the city. For a few decades such nay-sayers appeared to be in the right. A third, more recent challenge, was the internet, which supposedly would make face-to-face contact, the essence of a city, irrelevant. As of now all three predictions have failed. Cities have come back. It is thought that about half the world’s population now lives in cities; moreover, movement to the city continues apace. Why?

I am of course interested in the “why?” question, but it is linked to a “how”? *How* it is economically possible for cities to overcome their many disadvantages, including crowds, the discomforts of public transport, high rents and high-priced services. We know that they do, and that they do it by generating more innovation and greater productivity gains than centers of less density. But what is it about density that seems to enable this? That is my central interest and I hope you will come to share it, at least in some degree.

A small clarification is in order. This is not a course in urban architecture, much less in urban planning or urban policy, though those are all important areas of study

in their own right. It is instead a course focused on how density lends itself to innovation.

Schedule of topics and readings

August 28. Five approaches to cities, in declining order of abstraction:

- (i) *super-linear scaling* (Geoffrey West, Santa Fe Institute);
- (ii) *spatial equilibrium* and the *no arbitrage principle* (Ed Glaeser, Kennedy School, whose *Triumph of the City* is our text, though you should read it yourselves for background and insights);
- (iii) *serendipity and F2F encounters generating positive externalities to density* (Glaeser, though also Michael Storper, (LSE) and Anthony Venables, (ditto);
- (iv) *the city as attractor of creative people* (Richard Florida, U. Toronto);
- (v) *diversity of uses and users as sustainers of vibrancy at the neighborhood level; and new products growing out of old as the source of novelty and productivity* (Jane Jacobs, wonderfully insightful author of *The Death and Life of Great American Cities* and *The Economy of Cities*).

August 30. There is an extraordinary July 2011 lecture by West available as a video, which you can and should access and view prior to class. Try getting this via *GeoffreyWest_2011G.mp4* (*video/mp4 Object*). If this doesn't work you can just Google Geoffrey West and click on the title of his lecture, "The surprising math of cities and companies."

West and a team of colleagues has spent years gathering data on all sorts of biological metrics and on cities and companies. Briefly, the bio-data show that there are economies of scale: e.g., the larger the animal the more efficient it's use of energy. But for metrics such as incomes, wages, patents, the numbers of creative people in the population, and a host of other things, *cities scale super-linearly*: those "outputs" grow geometrically as the size of cities increases.

This is startling and it is also amazing that it seems to hold for all cities, everywhere.

Of course exponential growth cannot continue forever, unless we constantly innovate and unless the pace of change – of fresh innovations – itself constantly increases.

Another surprise: this statistical result holds for cities but not for companies. Their growth is better described by an ogive: starting slowly, increasing exponentially for a while, and then stagnating or actually collapsing.

Come to class prepared to discuss the West et. al. findings. The case for accepting their results as statistical regularities is strong, but the message is mixed: yes, there may be super-linear growth (a positive, maybe) but this does not prevent cities also being places of slums, disease, pollution, etc.). It seems the two go together. Moreover, the discovery of such regularities doesn't explain where the super-linearity comes from. West alludes to networks of people as the likely cause, but exactly what he has in mind is not clear. Come with your own thoughts on all this.

It might help to check out what fractal geometry is and why it has led a life on the fringes of mathematics. It is interesting that Glaeser – the Mister Incredible of the economics of cities – does not mention West in his *Triumph*, and we will soon see that this is in line with his own special emphases: (a) spatial equilibrium, which puts the stress not on places but on people, their incentives and choices; and (b) what he calls the zero arbitrage principle, which enables us to scale up coherently from individual choices to aggregative outcomes.

September 4. These two emphases will occupy us on September 4. By way of preparation, read Glaeser, “The Economic Approach to Cities,” 2007 (get the pdf of this by Googling *Harvard Economics Department – Edward Glaeser – Papers.*) All Glaeser's papers* are available as pdf's. I warn you that they are also all very long – 50 pages or more – and, while they begin in a discursive, intuitive way, quickly move into algebraic modals and heavy econometrics. We will not go into the technical details of his methods but take them as a given and thus accept the results as valid analyses of data. But we should come away with an intuitive sense of the issues, why the modeling takes the form it does and what the takeaway message is. Glaeser's papers collectively establish a whole series of empirical realities concerning cities,

and his findings become the basis for the chapters in *Triumph*. You should reflect on the difference between Glaeser's approach to empirical verities and West's.

* Glaeser usually co-authors but I omit the full lists of authors in this syllabus.

I will post a former student's paper that applies Glaeser's spatial equilibrium notion to Charlotte, NC. I will ask *two groups to volunteer* to present aspects of the Glaeser reading.

From here on I will continue the syllabus in more summary fashion. I do not wish to set things up, class by class, from the start; rather, I want to leave room for alterations of pace, pauses, sidesteps, etc., as seems appropriate. So I list our focus by date but just to facilitate your identifying, as groups, which sessions you wish to take charge of.

September 6. Download and read Glaeser et. al. "Did the Death of Distance hurt Detroit and Help New York" (2007). This is a dual analytical narrative, one of sustained decline and one of challenges overcome, respectively. See also Chapter 2 of *Triumph*. Read both, and try to identify strengths and weaknesses in this account from your own more immediate acquaintance with one or more different cities. You should also consult Glaeser "Reinventing Boston: 1640-2003," 2005 and be familiar with the sections in *Triumph* on Bangalore and Silicon Valley (ch.1), plus almost the whole of ch.9. Glaeser also has a paper on "Buenos Aires and Chicago," though I have not seen it.

September 11. Read Glaeser's paper on "The Rise of the Skilled City," 2003 and link the findings to the ability of cities to revive following challenges. Compare with Richard Florida's recent finding that Durham,NC is now the #1 city in the US for creative people. Check out Florida's earlier *The Rise of the Creative Class* to see how membership in the creative class is defined and measured. Identify the mechanism for revival and growth in Glaeser versus that of Florida.

For September 13. Do some field work in Durham (*walk* around; drive here and there; combine these eyeballing ventures with poking into city-provided

information and maps – available digitally (digitalnc.org/collections/durham); and ask Glaeser-type questions!). I will post a piece by former students giving some background on Durham’s long decline and more recent revival. But for yourselves, obtain a map of where development has occurred and is occurring in Durham. And bother yourselves with questions. What was the role of transforming existing tobacco warehouses into apartments close to the center? Of the American Tobacco Complex? What is the role of Scientific Properties? Can Golden Belt be self-sustaining? How come Starbuck’s lasted just 6 months in downtown Durham? How does RTP fit in? What role is played by the local universities? Check out the new COO of Scientific Properties, Gary Kuebler and the vision of the former head of Scientific Properties Andy Rothschild (interviewed by WUNC’s Frank Stasio, May 19, 2008. I would like you to leave this class feeling you understand more of what caused Durham’s revival, so we might come back to the subject at a later point. Indeed, Gary Kuebler has agreed to meet the class on September 25th for a Q & A.

September 18. Continuation of September 13. Complementing educated people and worker skills in a vibrant city must be consumer amenities. This has long been a sore point with Duke students. Read Glaeser “Urban Resurgence and the Consumer City,” 2006, and familiarize yourselves with some of Florida’s pronouncements on what makes a city attractive to young, creative people. I will post a paper by a former member of the seminar comparing the local area with Charlotte and Greensboro on a number of metrics.

September 20. Read two pieces I shall post from Jane Jacobs, ch. 2 of *The Economy of Cities* (1970) on innovation, and ch’s 8 and 9 of *The Death and Life of Great American Cities*, the former on “the need for mixed primary uses’ and the latter on “the need for small blocks.” Jacobs was an opponent of top-down city planning. Her epic struggles with Robert Moses, creator of the various freeways linking Manhattan with other places across the Hudson and East rivers and proponent finally of a final 8-lane elevated N-S Freeway through Greenwich Village and the Washington Square Park – a proposal successfully opposed by Jacobs and her neighborhood “troops” –

is documented in Anthony Flint, *Wrestling with Moses*. What was “wrong” with the Moses proposal (and similar projects in other cities – Boston offers a useful comparison)? Contrast the failed freeway for vehicular traffic with the extraordinary success of the Highline walkway from the meatpacking district (ca. 13th St.) to about 38th street? Why does the walkability of a city matter?

September 25. Meeting with Gary Kueber, COO of ScientificPropertiesLLC.

September 27. Buzz, F2F contact, serendipity and sharing: why do rivals share information? Under what conditions? Here we arrive at the people networks and positive externalities of density that everyone – from West to Glaeser to Jacobs to Robert Lucas and the most recent urban theorists – insists is what lies behind super-linearity and the sustained growth and economic riches of cities. As a reminder of the sort of thing at issue here, read Carlino et. al. on “Urban Density and the Rate of Invention” (city size and numbers of patents), esp. the chart at the end showing the empirical relationship (cf. West et. al.). Read also Michael Storper and Anthony Venables, “Buzz:face-to-face contact and the urban economy” (available as pdf; Google Storper and Buzz, or some variant of that). Pay particular attention to the game-theoretic examples given, with diagrams in an appendix. I shall post a paper by a former student treating these issues in simple terms: how to secure cooperation among the participants in prisoner dilemma-type games. Try to come up with real-world examples where sharing of valuable information does occur and why it happens. Read posted scanned sections from Annalee Saxenian, *Regional Advantage. Culture and Competition in Silicon Valley and Route 128*, find out about the Googleplex and the 20% own-project provision and its payoff (I will post a piece on “Google’s off-hours wizardry”); about Steve Jobs’s siting of the toilets in the Apple headquarters; about 3-M; and Pixar and other brilliantly creative organizations and how they facilitate it. Remember, *we are talking about sharing that generates real wealth, but wealth that cannot be fully appropriated by any one of the sharers.*

October 2, 4, 9, 18, 23, 25 and 30. Reviewing old issues, revisiting solutions, tying up loose ends and first-round airings of likely team research projects.