

Summary of SRO Project:

The Location of Inventive Activity in U.S. History, with Dr. Naomi Lamoreaux

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If we consider the United States in the late nineteenth and early twentieth century we find that levels of inventive activity are not homogeneous. They vary among regions, e.g. New England, the Mid-Atlantic, the Mid-West, and the South. They also vary between urban and rural locales. This (ongoing) research project aims to improve our understanding of the reasons behind this uneven inventive landscape. There are three general views being investigated: 1) invention is a response to issues relating to production, hence patenting activity collocates with production; 2) invention is cultured by high levels of knowledge sharing, as found in cities; 3) inventors locate where markets are conducive to the financing and selling of patentable work.

To investigate these hypotheses, I worked with a random sample of individuals patenting in the United States in the 1890s. Their patenting record, which is geographically coded, helps (in most cases) to track the inventors' locations through historical records. For instance, one may be able to find them in the US Federal Census (every 10 years), city directories (often yearly), immigration and naturalization forms, travel registers, newspapers, industry periodicals, birth and death certificates, and marriage records. By gathering these records, combining them with patent application records, and arranging them chronologically, I was able to construct a history of the inventive lives of these individuals. One can see if they migrated in their lifetime, how many times they migrated, their age at migration, if they moved before or after their first patent, and other metrics of interest. Many of these documents also contain information of the individuals' employment, including their industry, title, employer, and business ownership (employer or employee). This will allow us to ask questions regarding the assignment of patents, for instance if they assigned patents to their employers.

In order to compile these records I worked with a number of resources. My main source was Ancestry.com. For many city directories, the Fold3 database contained a more complete repository. Google Books was also tremendously helpful for finding non-official documents (town histories, industry periodicals, and other accounts). Despite these resources, it was often quite a challenge to find the inventors in the historical records. Optical character recognition remains quite imperfect and gets confused by kerning and various typefaces, so simple searches often did not find the relevant documents. Some inventors also had quite common names and so one could find inventors with the same name, in the same town, at the same time, working in the same industry (all matching what one would assume from the patent record), which required that I research multiple life histories and make judgments about the likelihood of each. Furthermore, there were many cases of erroneous entry of information even when the records were being written up (wrong birth year, name, immigration year, location of birth, location of parents' birth, and name misspelled).

In addition to creating a repository for the images of these documents, I was also tasked with designing and putting the information in a common spreadsheet format that would be more conducive to eventual analysis. Even in this format it is still quite a challenge to gain much of an

understanding of the overarching picture. Doing so will require manipulating the data in STATA and, at the very least, producing descriptive statistics.

All in all, I found this project interesting and quite helpful. I learned a great deal about the tools and challenges of compiling and analyzing the qualitative sort of information that is economic history's domain. I developed a better sense of the persistence required of academic researchers; I would often have to revisit individuals over multiple days, trying different tactics for locating their records. Professor Lamoreaux, with her wealth of experience in the field, was very helpful in this regard.

I am not yet done creating the dataset of inventors, of which there are several hundred. However, looking back I *do* feel like I accomplished quite a lot, learned much about the research process, and discovered many fascinating individuals, from Bernhard Baron, the rags to riches tobacco magnate, to Adolph Berrenberg, who was instrumental in designing the vacuum pumps for better light bulbs. The fact that such people turned up among a random and relatively small (when compared to the entire extent of patenting activity in the period) sample was a constant source of inspiration.

Which is to say that I found the SRO program to be valuable and would encourage any economics major to apply. Hopefully I will have time this term to work some more on this project and eventually enter the data analysis stage!