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The National Bureau of Economic Research
1050 Massachusetts Ave.
Cambridge, MA 02138

Sir or Madam:

I write to express my interest in the NBER's Post-Doctoral Fellowship. I am a Ph.D. candidate in economics at Boston University, where my research focuses on Economic History as well as Innovation, Labor, and Urban/Regional Economics.

My job market paper, "Dense Enough To Be Brilliant: Patents, Urbanization, and Transportation in Nineteenth Century," examines how the geographical distribution of patenting—a measure of innovative activity—changed in response to the dramatic increases in access to transportation that occurred in the nineteenth century United States. I construct a new geographic database of patents, combining it with new data on the location of both transportation and patents to compute number of patents per capita at the county level from 1790 to 1900. In addition, using digitized texts of patents, I have constructed a novel measure of information flows. My broader research focuses on how information and transportation networks affect economic organization. This has many analogies in the modern world, as my interest was inspired by growing alongside the Internet and mobile technology and watching the world become seemingly smaller and more cohesive. In addition to my job market paper, I have numerous projects ongoing and completed, including a paper in the second round at the *Journal of Economic History*.

As a Ph.D. student, I have learned to thrive when asking my own questions about economic topics, and very much want to continue exploring questions that engaged me personally. The most gratifying parts of being a Ph.D. student have been exploring and analyzing data, understanding how results fit into a larger framework of economic understanding, and interacting with other researchers exploring topics of mutual interest.

While my research to date has mostly focused on the nineteenth century United States, I am interested in a diverse range of institutional settings. Other projects explore several topics of importance for the understanding of economic development: the effect of infrastructure development on innovation, education, and political engagement; how intellectual property regimes affect patenting activity; and the importance of geographical and historical context to developmental outcomes. I am working on a number of projects investigating the effects of transportation and infrastructure on rural areas. The Postal Savings System and the migration of inventors are of particular note as topics I hope to work on in the upcoming year.

Through my research I have personally digitized archival data, and have supervised research assistants collecting new data and performing quality control on data derived from OCR'd documents. I have used a variety of programs to work with and link together many different types of data. I performed the textual analysis of my patent dataset in Python using a range of natural language processing and machine learning tools, and am comfortable with a wide range of analysis techniques.

I am available for an interview at your convenience or at the ASSA meeting in San Francisco in January. I am happy to provide any other materials you may require upon request. Thank you for your consideration; I look forward to hearing from you.

Sincerely,

Elisabeth Ruth Perlman