PROPOSAL: "THE DYNAMIC EFFECTS OF COLLABORATIVE EXPERIENCE IN RESEARCH NETWORKS: EVIDENCE FROM INNOVATION AND R&D IN THE PHARMACEUTICAL INDUSTRY."

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Firms often collaborate in innovation, and R&D. For example, Toyota (Corolla) and Chevrolet (Geo Prizm) collaborated on a compact sedan in the mid-1990s. There are several reasons for such collaboration in product design and development, e.g., pooling of complementary knowledge and technology that is proprietary to one or more firms. However, there are disadvantages as well, such as lack of trust or confidence about transfer of technology from the joint venture or corporate espionage. There remains a paucity of evidence about whether such collaboration between firms is beneficial and leads to successful outcomes. Moreover, there is even less evidence about the dynamic effects of such collaboration on future research productivity, e.g., do firms get better at collaborating as they gain experience in such joint ventures over time. There are two important reasons for lack of such evidence. (1) First there is often censoring in data. Frequently, collaborations that are unsuccessful are not disclosed to avoid bad publicity. On the other hand, collaborations that are successful may also be sometimes kept confidential in order to protect trade secrets and competitive advantage. (2) Even if collaborations are revealed and information about these is available publicly, a second reason the value of the alliance may be difficult to evaluate is because it is often not possible to measure and quantify the outcome of the joint venture, and hence, its success or failure. Understanding the effects of such firm collaboration is of critical importance not just for managers, entrepreneurs and investors but also for regulators and policy makers. Using a unique panel data set constructed from multiple sources that documents the outcomes of all FDA trials from 2000 to 2011 this research project will examine the role of collaboration in research networks in product development and market entry in the pharmaceutical industry.

The undergraduate student(s) will help organize and structure the data, and perform preliminary statistical analyses. The student(s) will also help with a general literature review. The skills required will be familiarity with Excel and STATA (or some other comparable statistical software package). Additional knowledge of computer programming (e.g., MATLAB) or a willingness to acquire such a skill is desirable but not necessary.

The student(s) will learn how to use and manage very large datasets. The student(s) will also learn how to conduct a literature review, perform statistical analyses (e.g., regression analysis) and interpret results of such analyses. These skills will be valuable preparation for a research project in any area of economics, and especially a senior essay or thesis.