

Innovation and Venture Formation in Agricultural Biotechnology

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A recent interest of academics and policymakers alike has been the importance of firm clustering as a mechanism for both generating and attracting new high technology firms into a region. It is generally assumed that firms with similar or complimentary knowledge requirements tend to locate proximately in order to benefit from any spillovers associated with each other's assets. As more firms collocate the attractiveness to firms, presumably, increases. These assumed forces of attraction have lead policy makers to actively support nascent industry clusters in pursue of economic development. This project examines key hypotheses relating to the spillover effects and the drivers of firm clustering within the context of agricultural biotechnology.

A key property of clusters that is of particular interest to this study is the amount of venture capital firms receive. It is often assumed that venture capital clusters in biotech as much as research firms do. And, it is often suggested that the apparent scarcity of venture capital firms (VCFs) in the Midwest limits the commercial success of agricultural biotechnologies in the region despite the presence of significant research. This study tests the relationship between biotech firms and VCFs and examines the impacts of spillover effects on venture capital funding of such firms.

Preliminary analysis of a national sample of smaller biotech firms indicates that spatial collocation of biotech firms has a positive spillover effect on the amount of venture financing available to these firms. We estimate that a 1 percent increase in the amount invested in biotech firms located within a 10 miles radius from a particular firm raises the amount invested in the particular firm by approximately 0.50 percent. Similarly, a 1 percent increase in the funding of biotech firms located within a 10 to 20 miles radius from a particular firm raise venture financing available to the particular firm by about 0.10 percent. We also examine whether collocation of biotech and VCFs results in above average funding chances and funding levels.