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Abstract

Biomedical Academic Entrepreneurship through the SBIR Program

The design of effective entrepreneurship policies, particularly those aimed at setting up incentive structures to draw academic scientists and their ideas into the private sector, would benefit from a better understanding of how this process currently operates. Existing research on academic entrepreneurship, however, is severely limited by an almost complete lack of data that identify individual researchers and link these people to the process of commercialization. Data from the U.S. Small Business Innovation Research (SBIR) program, however, provide a unique opportunity to track individuals as they venture from research into business. The SBIR program is the largest Federal incentive program designed to promote the commercialization of new technologies through the use of financial grants to small businesses. Many of the principal investigators (PIs) on these SBIR awards were researchers at universities and other non-profit institutions.

This paper will explicitly identify individual academic entrepreneurs and develop a descriptive profile of their characteristics. The analysis will focus on biomedical academic entrepreneurs. Using a unique database covering the population of all NIH supported academic researchers, entrepreneurs are identified by matching these PIs by name to the SBIR database. While some academic researchers may pursue commercialization outside the SBIR program, initial matching identified over 450 individuals, a fairly large sample.

The richness of the information contained in the NIH database and the SBIR database will permit an interesting and informative descriptive profile of academic entrepreneurs. When possible, the group of academic entrepreneurs will be compared to a randomly selected group of non-SBIR biomedical researchers drawn from the NIH database. The first objective is to characterize where academic entrepreneurs are from. Using the NIH database, the analysis will make comparisons across institutional type (non-profit hospital, university, research institute), institutional characteristics (public vs. private, Carnegie classification) and geographic region (high-tech area, etc.). The second objective is to ask if these entrepreneurs are “star” scientists as suggested in recent work by Darby and Zucker. This will be done by comparing the distribution of cumulative awards to academic entrepreneurs to the distribution of cumulative awards for the comparison group of non-SBIR PIs. With this method, NIH awards are used as the star criterion. The third objective is to characterize where these academic entrepreneurs commercialized their ideas. This section will group commercialization outlets into new firm creation versus established firm and further identify if these firms were backed by venture capital.

The analysis will conclude with a short overview of the implications of the findings for academic entrepreneurship policy. Moreover, because commercialization takes place through the SBIR program, the findings will also provide some prima facie evidence on the effectiveness of this program to foster commercialization.