

Scientist Entrepreneurs: The Sleeping Giant of University Commercialization
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This study examines the prevalence and determinants of the commercialization of research by university scientists funded by grants from the National Cancer Institute (NCI). Because the two publicly available modes of scientist commercialization – patents and Small Business Innovation Research (SBIR) grants – do not cover the full spectrum of commercializing activities undertaken by university scientists, the study also includes two additional measures obtained from detailed scientist interviews: licensing of intellectual property and starting a new firm. These measures are used to assess both the prevalence and determinants of scientist commercialization of research. In particular, the empirical findings suggest that:

- Scientists receiving funding from the National Cancer Institute exhibit a robust propensity to commercialize their research. However, the prevalence of commercialization depends highly upon the actual mode of commercialization. Some modes of commercialization, such as patents, are more prevalent, while other modes, such as funding by the SBIR program are rarely used.
- Scientist entrepreneurship is the sleeping giant of commercializing university research. More than one in four patenting NCI scientists have started a new firm.
- Two paths for commercialization of scientist research are identified - the *TTO route* and the *entrepreneurial route*. Scientists who select the *TTO route* by commercializing their research through assigning all patents to their university TTO account for 70 percent of NCI patenting scientists. Scientists who choose the *entrepreneurial route* to commercialize their research, in that they do not assign patents to their university TTO, comprise 30 percent of patenting NCI scientists.
- Social capital enhances the propensity for scientists to commercialize their research. The impact of social capital is particularly high for the commercialization mode of scientist entrepreneurship.
- Technology Transfer Offices are found to be helpful for the mode of commercialization involving licenses. There is less evidence suggesting that they promote scientist entrepreneurship.
- For scientists who perceive that they are helped by their Technology Transfer Office, licensing is not only the most prevalent mode of commercialization, but it also is a substitute for entrepreneurship. For scientists who perceive that they are not helped by their Technology Transfer Office, entrepreneurship emerges as a much more important mode of commercialization and is complementary to licensing.
- Scientists choosing the *entrepreneurial route* to commercialize their research, by not assigning patents to their university to commercialize research, tend to rely on the commercialization mode of entrepreneurship. By contrast, scientists who select the *TTO route* by assigning their patents to the university tend to rely on the commercialization mode of licensing.