

Who Patents at Universities and Why? Evidence from a Large French University **Nicolas CARAYOL**

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The paper aims to analyze the patenting patterns of academic scientists which is a raising concern for both policy makers and economists in the US (Henderson et al., 1999) and Europe (Geuna and Nesta, 2003). More precisely, we study the determinants of patenting behaviors of more than nine hundred academic scientists over the period 1995-2000 over which they were employed by a large French University which is ranked first among French universities (in terms of impact) by the European Report on Science and Technology (2003).

This study has three main original features. The first originality of our work resides in that it goes down to the individual academic researcher level while the specialized literature usually investigates this issue at the university level – Coupé, 2003; Foltz et al. 2000; Payne and Siow, 2003. To the best of our knowledge, there has been no previous econometric analysis of individual academic patenting behaviors to the exception of Agrawa and Henderson (2002) who focused on the effects of publication and past patenting on present one – they found positive relations. Wallmark (1998) studied inventors' profiles at Chalmers universities. Even if no econometric evidence is provided, they found skew productivity distribution and a peak about 35-40 of age. The second originality of our study is that our data allow for introducing the laboratory effects on individual researchers. Previous analyses on the same sample as ours, but at the laboratory level of analysis, Carayol and Matt (2003a) and Azagra et al. (2003) exhibited the importance of lab level variables. Mairesse and Turner (2003) and Carayol and Matt (2003b) clearly exhibited the importance of lab determinants on academic publication behaviors.

One may thus expect such collective effects arise for patenting behaviors. The last originality of our study is that it is based on all patents invented by university scientists while usually, studies restrict to the ones owned by the universities. The importance to rely on such data has been highlighted by Balconi et al (2003), Meyer (2003) and Saragossi and van Pottelsberghe de la Potterie (2003) who tend to point out that, in Europe, the set of patents invented by university researchers is much broader than the ones they own. Our data concern all permanent academic researchers and scholars employed by the Université Louis Pasteur. We have collected data on all patents (French, EU, US) applications these researchers have invented. By restricting our sample to all researchers that we are surely employed over the period from 1995 to 2000, we finally have a sample of 908 researchers, who have invented 211 patents which correspond to 507 occurrences of ULP inventions – since co-invention between researchers is frequent. The collection of raw data for the independent variables have been the result of a long standing of efforts from a team of researchers at BETA which allow us to rely on detailed information on individuals as determinants of patenting: age, status – teaching-&-research or full-time positions), publication counts, impact factor, domains of publication, co-publications with industry. Moreover, we can also rely on detailed evidence concerning labs and colleagues in labs: number of colleagues, their publication intensity and quality, quantities of non permanent researchers – PhD, post-docs –, interdisciplinarity, public and private funding.

