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Supervisor Expression of Interest MSCA-IF Marie Sklodowska Curie Action-Individual Fellowship

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Department Name: Research topic: (https://www.polimi.it/en/scientific-research/research-structures/departments/)	Department of Management, Economics and Industrial Engineering (DIG) <i>Applied Economics</i> The role of individual characteristics in innovation processes
MSCA-IF Research Area Panels	<input type="checkbox"/> CHE_Chemistry <input checked="" type="checkbox"/> ECO_Economic Sciences <input type="checkbox"/> ENG_Information Science and Engineering <input type="checkbox"/> ENV_Environmental and Geosciences <input type="checkbox"/> LIF_Life Sciences <input type="checkbox"/> MAT_Mathematics <input type="checkbox"/> PHY_Physics <input type="checkbox"/> SOC_Social Sciences and Humanities
Politecnico di Milano Areas:	<input type="checkbox"/> Cultural Heritage <input type="checkbox"/> Smart Cities <input type="checkbox"/> Territorial Fragilities <input checked="" type="checkbox"/> Health <input type="checkbox"/> Industry 4.0
Brief description of the Department and Research Group (including URL if applicable): http://www.dig.polimi.it www.dig.polimi.it/fileadmin/user_upload/docenti/massimo.../EFI_group.pdf	The Department of Management, Economics and Industrial Engineering (DIG) of Politecnico di Milano was established in 1990. The Department's main mission is to impact on society by creating and sharing knowledge at the intersection between engineering, management and economics through outstanding research, top quality education and serving the community. DIG is one of the largest Departments of Politecnico di Milano, with around ninety tenured professors. DIG research aims to produce excellent science through a tailored approach characterized by multidisciplinary, mastering of multiple methodologies and intense connections with practitioners and policymakers. The Department is part of the School of Management of Politecnico di Milano, established in 2003 together with MIP Politecnico di Milano Graduate School of Business which focuses on post-experience education. The School is EQUIS and AMBA accredited and is ranked by Financial Times and QS among the best European Business Schools. The School is member of PRME, Cladea, ACE and QTEM. This project aligns with the research agenda of the



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	<p>Entrepreneurship, Finance and Innovation (EFI) Research group, coordinated by Massimo G. Colombo, aims to investigate leading-edge themes on entrepreneurship, finance, and innovation pursuing both rigor and relevance of results through advanced statistics and econometrics techniques.</p>
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<p>Brief project description: (max 1 page)</p>	<p>Innovation is a key engine of economic growth and productivity, two of the main objectives of today economic policy. The experimental nature inherent to innovation implies high risk and uncertain outcomes making it challenging the realization of the potential value associated with innovation. The pharmaceutical industry represents a typical example of an innovation setting characterized by high technological and regulatory uncertainty with organizations facing high failure rates and extensive development costs.</p> <p>The purpose of this project is to gain a deeper understanding of the inventive process and the resultant performances within the pharmaceutical sector. In particular, this project aims to provide deeper insights into two general topics. The first objective is to dig deeper into the effects of learning from previous R&D development efforts by emphasizing the role of individual characteristics (i.e gender, education, previous work experience). The innovation process within this sector is marked by repeated trials and long development projects representing a key source of tacit and codified knowledge on which inventors can build further in following trials. However, learning alone is not sufficient since key organizational arrangements and team composition are also crucial factors to stimulate and facilitate innovation. Compared to existing works focusing on patent citations, this study will link patents to pharmaceutical projects considering thus not only the performance at the patent level but also the outcome of the actual drug development process.</p> <p>The second objective is to assess the potential role of regulatory changes related to innovation policy and other regulatory instruments on the innovation outcome.</p> <p>To explore these two objectives this projects will draw on a combination of database of pharmaceutical projects and inventor level characteristics. The Pharmaceutical Industry Database (PHID) contains detailed information on pharmaceutical R&D projects including their Anatomical Therapeutic Chemical (ATC) classification, the indication on the treated disease, the company leading the project, the development history and the patents protecting the projects. This data will be linked to micro level dataset at the level of the inventor. The availability of detailed information on the pipeline of pharmaceutical firms and on the inventive team allows to construct multiple indicators of performances as for example the number of compounds moving to successive development phases, number of dismissed and marketed products, number of running projects, sales associated with marked drugs. The outcome of this project will inform policymakers and practioners on the relative importance of organization arrangement and individual characteristics for the innovation process in the pharmaceutical industry.</p>
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