Who Changes the Status Quo?

The Role of Star Scientists in Science Intensive Industry

December 18th **2018**
Maison Suger,
16 rue Suger, 75006 Paris
9:00 - 16:00
Mandatory registration at ffj@ehess.fr

The aim of the workshop is to analyse the role of star scientist in science intensive industry such as bio/pharmaceutical and IoT/ICT industry, based on empirical studies in Japan and the European economies. Questions that are to be addressed include: How Science, Technology, and Innovation policy supports innovation ecosystem to overcome "the valley of death" in the process of product innovation, and what are the differences between Europe and Japan? What is the role of star scientist for R&D process? How star scientist recognizes prior knowledge for novel scientific discoveries? To what extent do the interplay of science and technology affect the R&D process? And what is the role of university-industry worteractions?

L'ECOLE DES HAUTES ETUDES EN SCIENCES SOCIALES

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Program

9:00 - Welcome Address

By Sebastien Lechevalier (EHESS, President of FFJ)

9:30 - Innovation Policies and Star Scientists in Japan

By Tatsuro Sasaki (GRIPS) & Kanetaka Maki (Waseda Business School)

Scientific research is a process of creating new knowledge and is an important element leading to innovation through development in an industry. Promotion of scientific research leads to innovation, and in that sense, it can also be an engine of economic growth. In this paper, we review the environment of Japan and Japanese universities that produce scientific research, and the recent reform of university education policy as well as science, technology, and innovation policy. Based on the review, we can understand the changed role required of scientists. Furthermore, because scientists are key innovators and Japan's policies encourage scientists to commit more to innovation, we propose the concept of star scientists, who have outstanding achievements in scientific research.

10:30 - *Coffee Break*

10:45 - You've Got a Heart of Star – Scale and Scope of Scientific Community and Role of Star Scientist

By Yasushi Hara (CEAFJP/Michelin Fellow; GRIPS, Waseda, Hitotsubashi University)

How to identify and identify Star Scientists who produce excellent scientific achievements and thus also economic and social impacts? In this paper, we survey the outline of previous research related to the star scientist hypothesis, then literature review of prior research about scientists' evaluation using patents and scientific papers widely used for academic evaluation. The possibility of connecting between datasets will also be described. Next, we will clarify the summary of the data sets utilized in these previous studies. Based on these results, we show the results of analyzing the characteristics of the star scientist for each scientific field based on scientific papers and patent data.

11:45 - *Lunch Break*

13:15 - Delayed Recognition in Science: Different Causes of Sleeping and Awakening of Discoveries

By Philippe Gorry (University of Bordeaux)

Nowadays, innovation and translational research concepts are commonly used in science policies. They often refer to the need to contribute to the diffusion of new scientific knowledge toward socio-economic impact. However, novelty is not exclusively related to discoveries: work can remain ignored for a long time, before being recognized (Cole S. 1970). This phenomenon of late recognition is gaining renewed interest with the scientometrics analysis of Sleeping Beauties, and their prevalence and importance in the history and sociology of science (Gorry & Ragouet, 2016). Delayed recognition has been well described in science since the pioneering observations of Garfield, and referred to today as sleeping beauties (SB). It is a phenomenon where papers do not achieve recognition in terms of citations until a few years after their original publication (Garfield 1989). The definition, introduced by Van Raan (2004), refers to an article that goes unnoticed ("sleep") for more than 10 years ("sleep" period), and then, almost suddenly receives many citations (the "awakening" period) by a ''Prince'' (PR, another article), attracting a lot of attention from there on in terms of citations (the "Kiss of the Prince"). SB have been identified in numerous research fields such as biology, chemistry, medicine and physics. The present work aims to explore, through several case studies, the reasons for SB pattern of citations and what mechanisms are in play in the "awakening" by using scientometric, historical and sociological approaches in order to explain the resistance to knowledge diffusion.

14:15 - *Coffee Break*

14:30 - Patent Rating by Predictive Indicators for the Ranking of Companies on their Innovation Potential

By Clément Sternberger (INPI/Paris Sud University)

With more than 3 million patent application across the world in 2016, patent data is a source of information as precious for research in innovation as it is complex to use. The number of patent .In collaboration of the French patent office (INPI), we are building a methodology for patent portfolio analysis based on the knowledge of academic research but also the experience of business and patent offices. Once established, this methodology will be available for all with full access to codes and databases provided. For our first sectorial study, we focus on patent technological quality and this presentation aim to present a review of various indicators from the literature but above all, we will discussed the number of patent as a proxy of innovation capacity. We will also provide some insights resulting from discussions with patent examiners and IP management experts and conclude with essential knowledge to conduct patent data based analysis.

15:30 - Conclusion

Philippe Gorry

MD-PhD, Associate Prof., has been the past-funding & executive director of the technology transfer office, administrator of the entrepreneurship incubator at University of Bordeaux, and President of the association of French university technology offices. Trained in medical genetic, his research field was on cancer-prone rare diseases and he was an inventor of several patents on stem cells. Since, he has joined the Dpt. of Economics (GREThA CNRS UMR 5113) where his main research interests are diffusion of medical innovation, using scientometrics and econometrics approaches. He is teaching mainly technology forecasting, pharma competitive intelligence, and pharma-biotech marketing & licensing. He served as an expert on gene patenting and orphan drug policy for OECD, on patent search for WIPO, and technology transfer (Academy of Finland, AGAUR, ERC, FWO). Finally, he has been visiting scholar at NCI (Frederick MD, US), NIH-OTT (Rockville MD, US), and at the Inst. of Public Policies & Goods, CSIC (Madrid, SP).

Yasushi Hara

Using his IT literacy as ex-ICT infrastructure engineers with economic and management academic discipline in his research activities, he has been conducting empirical studies relevant to policy making in the field of science, technology and innovation.

Selected as 2018 Michelin/CEAFJP fellow, he now investigate science and innovation linkage especially in pharmaceutical and ICT field, particularly by using new data such as news release and technical documents to understand innovation in ICT, where patent and scientific paper information, conventional measurement for innovation activities, are relatively a weak indicator to capture innovation output. Recent Publication: "20 Years of Human Pluripotent Stem Cell Research: It All Started with Five Lines" (*Cell Stem Cell*).

Kanetaka Maki

Associate Professor, Waseda Business School, Tokyo, Japan. Over fifteen years of in-depth experience in the business creation from a university system (IT & Biotech). Academic backgrounds to support practical activities (holds Ph.D. in Management from University of California San Diego): Research skills including but not limited to quantitative and qualitative analysis, and research synthesis. Recent Publication: Krishnan, V., Maki, KM., Castillo, EM. and Guss, DA. (2015) "Service Design for Improved Satisfaction: Decoding the Mechanism for Impact of Patient Call Back in Emergency Healthcare", *Service Science* Vol. 7 Issue 4.

Tatsuro Sasaki

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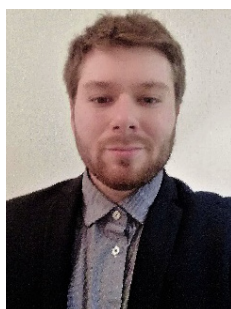
Clément Sternberger

Ph.D Student, at Paris Saclay and Paris-Sud University. Currently writting his thesis on an "Analysis of the quality of patented inventions by predictive indicators and classification of companies according to their potential of innovation" under the direction of Ahmed Bounfour.