



EPO sponsored Academic Research Programme session at EPIP2021

Organizers:

Yann Ménière, Chief Economist, EPO

Xavier Seuba, Director European Patent Academy and EQE, EPO

Summary:

The four grant recipients will present their final and interim results of their research projects done with the support of the EPO under the Academic Research Programme.

The reports present new insights into i) the analysis of standard-essential patents using semantic comparison, ii) how collaborations in science and in patents are related at regional level, iii) the interplay between universities and firms located in the same European regions, and iv) data on patents that were used as collateral in loan negotiations.

Research projects:

Approximating the standard-essentiality of patents – a semantics-based analysis

Dietmar Harhoff, Max Planck Institute for Innovation and Competition, Munich, Germany

The development of interoperability standards such as WiFi or 5G in information and communication technologies typically requires massive investments in R&D. It therefore generates large portfolios of related patents, part of which are standard-essential patents (SEPs) that are by definition infringed whenever the respective standard is implemented. This research project develops a novel method based on semantic data analysis to detect such standard essential patents. It provides valuable insights into the patent landscape around major ICT standard while enhancing transparency for the licensing of SEPs.

The role of the interplay between science and invention networks in knowledge cohesion: evidence from European regions

Semih Akçomak, Middle East Technical University, Ankara, Turkey

The project aims to analyse international collaborations in science and inventive activity and investigate how the landscape of knowledge production in Europe has changed over the past 25 years. The aim is to analyse to what extent collaborations in science and collaborations in patents are related at regional level. These collaborations can be set up by researchers, universities and firms, and governments fund such collaborative initiatives (e.g., EU's Framework Programmes). Thus, both academics and policymakers will benefit from knowing the impact of collaborations in research and patents. The project has four research questions:

1. do patent and research networks in Europe have similar dynamics?, 2. do patents have any impact on the formation and evolution of research networks?, 3. do the innovation performances of regions affect the formation and evolution of research networks?, and 4. do the innovation performances of regions affect the formation and evolution of patent networks?

University research funding, patenting and technological impact

Federico Munari, University of Bologna, Italy

This project studies the interplay between universities and firms located in the same European regions. A first line of research analyses the evolution of the technological trajectories of universities and co-localised firms. By linking evolution patterns to the overall innovation performance of the regions, it provides useful insights for smart specialisation policies in European regions. A second line of research analyses the impact of 3 697 scientific research grants awarded by the European Research Council (ERC) on the subsequent patents induced by the grant programs, thereby documenting the ability of the scheme to generate market-relevant inventions.

Patents as a source of finance to mitigate financing constraints

Dirk Czarnitzki, KU Leuven, Belgium

The purpose of this project is to collect data on patents that were used as collateral in loan negotiations in four countries (Sweden, the Netherlands, Belgium and Luxembourg) where it is mandatory to report to the local patent authority if intellectual property rights have been pledged. In addition, it is proposed to conduct an economic analysis of pledged patents in order to shed some light on 1. how frequently are patents used as collateral, 2. which patents are used as collateral, 3. which type of firms pledge patents, 4. whether we can use pledged patents to estimate their value through firms' debt levels, and 5. whether patent-pledging is effective in mitigating financing constraints of corresponding firms significantly.