



8th ZEW/MaCCI Conference on the **Economics** of Innovation and Patenting

Mannheim, 16-17 May 2019

Conference venue: ZEW, L 7, 1, 68161 Mannheim

| PROGRAMME | Thursday, May 16, 2019 |
|---------------|--|
| 09:00 | Arrival and Registration |
| 09:30 | Room Brussels Welcome Address Georg Licht, ZEW |
| 09:45 – 10:45 | Room Brussels Keynote Measuring Artificial Intelligence (TBC) DIETMAR HARHOFF, Max Planck Institute for Innovation and Competition, Munich Chair: Georg Licht, ZEW |
| 10:45 – 11:00 | Coffee Break |
| 11:00 – 12:30 | Parallel Sessions I (see below for details) |
| 12:30 – 13:30 | Lunch |
| 13:30 – 15:00 | Parallel Sessions II (see below for details) |
| 15:00 – 15:30 | Coffee Break |
| 15:30 – 16:45 | Room Brussels Invited Session: Innovation and Public Procurement Public Procurement of Innovation: Rationale, Design and Impact ELISABETA IOSSA, University of Rome Tor Vergata and GREEN-Bocconi Procuring Innovation: A European Legislative Reform DIRK CZARNITZKI, KU Leuven and ZEW Chair: Bettina Peters, ZEW |
| 16:45 – 17:00 | Coffee Break |
| 17:00 – 18:30 | Parallel Sessions III (see below for details) |
| 19:30 | Conference Dinner |
| | |





8th ZEW/MaCCI Conference on the **Economics** of Innovation and Patenting

Mannheim, 16-17 May 2019

Conference venue: ZEW, L 7, 1, 68161 Mannheim

| PROGRAMME | | Friday, | May 17 | 2019 |
|---------------|---|---------------------|---------------|------|
| 09:00 – 11:00 | Parallel Sessions IV (see below for detai | ils) | | |
| 11:00 – 11:20 | Coffee Break | | | |
| | Room Brussels Invited Session: Artificial Intelligence an | nd Big Data in Inne | ovation Resea | rch |
| 11:20 – 12:30 | Building an Amazon.com for Data JULIA LANE, New York University | | | |
| | TBA JUAN MATEOS-GARCIA, NESTA, London | 1 | | |
| | Chair: Sandra Gottschalk, ZEW | | | |
| 12:30 - 13:30 | Lunch | | | |
| 13:30 – 15:00 | Parallel Sessions V (see below for detail | ls) | | |
| 15:00 – 15:20 | Coffee Break | | | |
| 15:20 – 16:20 | Room Brussels Keynote FRAND and Patent Damages TIM SIMCOE, Boston University Chair: Bernhard Ganglmair, ZEW | | | |
| 16:20 | Concluding Remarks Bettina Peters, ZEW | | | |
| 16:30 | Farewell Drinks and Pretzels | | | |
| 18:00 | Optional: Trip to Heidelberg | | | |
| | | | | |





Thursday, May 16, 2019

| 11:00 – 12:30 Parallel Session I | | | |
|--|---|---|---|
| Room Brussels I.A: EU Innovation Policy Chair: Rainer Widmann (MPI for Innovation and Competition) | Room 1 I.B: IPRs Chair: Christian Helmers (Santa Clara University) | Room 2 I.C: Science 1 Chair: Fabian Gaessler (MPI for Innovation and Competition) | Heinz-Koenig-Hall (HHK) I.D: Inventors, Firm Size & Innovation Chair: Annette Becker (TU Munich) |
| Innovation Performance and Signal Effect: Quasi-Experimental Evidence from European Program Nadine Levratto (EconomiX-CNRS) and Aurelien Quignon (EconomiX-CNRS) Discussant: Ilia Samarin (Ghent University) | Visibility of Technology and Cumulative Innovation: Evidence from Trade Secrets Laws Bernhard Gangelmair (ZEW, MaCCI & University of Mannheim), Imke Reimers (Northeastern University) Discussant: Paul Hünermund (Maastricht University) | Publish or Perish: Selective Attrition as an Unifying Explanation for Patterns in Innovation Over the Career Huifeng Yu (University at Albany), Gerald Marschke (University at Albany), Matthew Ross (New York University), Joseph Staudt (U.S. Census Bureau), Bruce Weinberg (Ohio State University & NBER) Discussant: Stefano Baruffaldi (University of Bath) | Incubators, Innovation and Productivity Olof Ejermo (Lund University & CIRCLE Discussant: Richard Bräuer (IWH Halle) |
| Innovation, Subsidies and Heterogeneity in Firm Performance: Evidence from Horizon 2020 Klaas Mulier (Ghent University), Ilia Samarin (Ghent University) Discussant: Øivind A. Nilsen (Norwegian School of Economics) | Post-Grant Review, Invalidation, and Subsequent Patenting Markus Nagler (LMU Munich), Stefan Sorg (MPI for Innovation and Competition) Discussant: Alan Marco (Georgia Tech) | Truly Legendary Freedom: Funding, Incentives, and the Productivity of Scientists Matthias Wilhelm (LMU Munich) Discussant: Felix Poege (MPI for Innovation and Competition) | The Importance of Tacit Knowledge: Dynamic Inventor Activity in the Commercialization Phase Per Maurseth (Norwegian School of Management), Roger Svensson (IFN Stockholm) Discussant: Pere Arqué-Castells (Northwestern University) |
| The Geographic Proximity to European Commission and the Likelihood to be Granted with a Subsidy from EU Cem Ermagan (KU Leuven) and Dirk Czarnitzki (KU Leuven & ZEW), Peter Teirlinck (KU Leuven) Discussant: Rainer Widmann (MPI for Innovation and Competition) | Submarine Trademarks Carsten Fink (WIPO), Andrea Fosfuri (Bocconi University), Christian Helmers (Santa Clara University), Amanda F. Myers (USPTO) Discussant: Imke Reimers (Northeastern University) | Science Quality and the Value of Inventions Fabian Gaessler (MPI for Innovation and Competition), Dietmar Harhoff (MPI for Innovation and Competition), Stefano Baruffaldi (MPI for Innovation and Competition), Felix Poege (MPI for Innovation and Competition) Discussant: Elodie Carpentier (GREThA, CNRS & University of Bordeaux) | Labor Division in R&D? Firm Size and Specialization in Corporate Research Annette Becker (TU Munich), Hanna Hottenrott (TU Munich) Discussant: Jeroen Van den Bosch (KU Leuven) |





| 13:30 – 15:00 Parallel Session II | | | |
|---|--|--|--|
| Room Brussels II.A: Public Research Institutes Chair: Maikel Pellens (Ghent University & ZEW) | Room 1 II.B: Patent System Chair: Alexander Donges (University of Mannheim) | Room 2 II.C: International Markets & Innovation Chair: Hanna Hottenrott (TU Munich) | Heinz-Koenig-Hall (HHK) II.D: Web Mining, Deep Learning & Innovation Chair: Jan Kinne (ZEW & University of Salzburg) |
| Do Companies Benefit from Public Research Organizations? The Impact of the Fraunhofer Society in Germany Diego Comin (Dartmouth College), Georg Licht (ZEW), Maikel Pellens (Ghent University & ZEW), Torben Schubert (Lund University) Discussant: Matthias Wilhelm (LMU Munich) | Strategic Citation: A Reassessment Jeffrey Kuhn (University of North Carolina), Kenneth Younge (EPFL), Alan Marco (Georgia Tech) Discussant: Alexander Donges (University of Mannheim) | Spillovers from International Knowledge Activities Spyros Arvanitis (KOF ETH Zurich), Florian Seliger (KOF ETH Zurich), Martin Wörter (KOF ETH Zurich) Discussant: Bastian Krieger (ZEW) | Predicting Innovative Firms using Web Mining and Deep Learning Jan Kinne (ZEW & University of Salzburg David Lenz (Justus-Liebig-University Gießen) Discussant: Hector de Wazières (Télécon ParisTech & Dauphine University) |
| The Innovation Effect of the Introduction of Universities of Applied Sciences: Interdependencies Between Different Types of Research Institutions Patrick Lehnert (University of Zurich), Curdin Pfister (University of Zurich), Dietmar Harhoff (MPI for Innovation and Competition), Uschi Backes-Gellner (University of Zurich) Discussant: Elizabeth Webster (Swinburne University of Technology) | Universal Intellectual Property Rights: Too Much of a Good Thing? Emmanuelle Auriol (Toulouse School of Economics), Sara Biancini (Université de Cergy-Pontoise), Rodrigo Paillacar (Université de Cergy-Pontoise) Discussant: Emanuele Tarantino (University of Mannheim) | Competition from China in the Product and Factor Markets and Innovation in Germany Philipp Böing (Peking University & ZEW), Loren Brandt (University of Toronto), Pierre Mohnen (Maastricht University), Elisabeth Müller (German Graduate School of Management and Law) Discussant: Hanna Hottenrott (TU Munich) | Firm Website Characteristics and Firm Innovativeness - Which Website Characteristics can Identify whether a Firm is Innovative? Janna Axenbeck (ZEW) Discussant: Lorenz Brachtendorf (MPI for Innovation and Competition) |
| Knowledge Lost in Capital Stefano Baruffaldi (University of Bath), Fabian Gaessler (MPI for Innovation and Competition) Discussant: Maikel Pellens (Ghent University & ZEW) | The Consequences of Radical Patent-Regime Change Alexander Donges (University of Mannheim), Felix Selgert (University of Bonn) Discussant: Markus Nagler (LMU Munich) | Defining and Measuring the Innovativeness of Firms <u>Giuliana Battisti</u> (University of Warwick), Paul Stoneman (University of Warwick) Discussant: Pierre Mohnen (Maastricht University) | Deep Learning, Deep Change? Mappin the Development of the Artificial Intelligence General Purpose Technology Joel Klinger (Nesta), Juan Mateos-Garcia (Nesta), Konstantinos Stathoulopoulos (Nesta) Discussant: Jan Kinne (ZEW & University of Salzburg) |





| 17:00 – 18:30 Parallel Session III | | | |
|--|--|--|--|
| Room Brussels III.A: R&D Policy 1 Chair: Paul Hünermund (Maastricht University) | Room 1 III.B: Standards Chair: Gaétan de Rassenfosse (EPFL) | Room 2 III.C: Technology Transfer Chair: Patrick Lehnert (University of Zurich) | Heinz-Koenig-Hall (HHK) III.D: Start-ups & Innovation Chair: Lorna Syme (Frankfurt School of Finance and Management) |
| The Effect of Government Research Grants on Firm Innovation: Theory and Evidence from Austria Rainer Widmann (MPI for Innovation and Competition) Discussant: Roger Svensson (IFN Stockholm) | Approximating the Standard Essentiality of Patents – A Semantics- Based Analysis Lorenz Brachtendorf (MPI for Innovation and Competition), Fabian Gaessler (MPI for Innovation and Competition), Dietmar Harhoff (MPI for Innovation and Competition) Discussant: Maddalena Agnoli (MINES ParisTech) | Public University Research Funding and local University-Firm Cooperation: An Analysis of the German Excellence Initiative Bastian Krieger (ZEW) Discussant: Fabian Gaessler (MPI for Innovation and Competition) | Using Al to Analyze and Predict the Success of Startups When Raising Funds Based on the Characteristics of Their Previous Investors Hector de Wazières (Télécom ParisTech & Dauphine University), Jean-Michel Dalle (Sorbonne Université), Clément Gastaud (Sorbonne Université) Discussant: Marius Berger (ZEW) |
| Effectiveness and Efficacy of R&D Subsidies: Estimating Treatment Effects with One-sided Noncompliance Philipp Boeing (Peking University & ZEW), Bettina Peters (ZEW, MaCCI & University of Luxembourg) Discussant: Jordi Jaumandreu (Boston University & CEPR) | The Effect of Standardization on Innovation: A Machine Learning Approach Maddalena Agnoli (MINES ParisTech), Petyo Bonev (Swiss Institute for Empirical Economic Research) Discussant: Justus Baron (Northwestern University) | Do University-Industry Collaborative Research Grants Have an Effect on the Industry Partners? Paul Jensen (University of Melbourne), Alfons Palangkaraya (Swinburne University of Technology), Russell Thomson (Swinburne University of Technology), Elizabeth Webster (Swinburne University of Technology) Discussant: Nicolas Carayol (GREThA, CNRS & University of Bordeaux) | Can Owner-Inventors Help Capture Digital Opportunities in Young Firms? Lorna Syme (Frankfurt School of Finance and Management), Elisabeth Müller (German Graduate School of Management and Law) Discussant: Hans Lööf (KTH Stockholm) |
| The Impact of Internationally Co- Funded Public Technology Transfer Programs on Academic Productivity, Collaboration, and Commercialization Paul Hünermund (Maastricht University), Cindy Lopes Bento (Maastricht University), Maikel Pellens (Ghent University & ZEW) Discussant: Aurelien Quignon (EconomiX- CNRS) | Joining Standards Organizations: The Role of R&D Expenditures, Patents, and Product-Market Position Justus Baron (Northwestern University), Cher Li (University of Nottingham), Shukhrat Nasirov (De Montfort University) Discussant: Gaétan de Rassenfosse (EPFL) | Public Policy, Learning and the Evolution of Technology Transfer Nicolas Carayol (GREThA, CNRS & University of Bordeaux), Elodie Carpentier (GREThA, CNRS & University of Bordeaux) Discussant: Patrick Lehnert (University of Zurich) | Outside Board Directors and Start-Up Firms' Innovation Christopher Baum (Boston College), Hans Lööf (KTH Stockholm), Andreas Stephan (Jönköping International Business School), Ingrid Vikl und-Ros (KTH Stockholm) Discussant: Lorna Syme (Frankfurt School of Finance and Management) |





PARALLEL SESSIONS Friday, May 17, 2019

| 09:00 – 11:00 Parallel Session IV | | | |
|--|--|--|--|
| Room Brussels IV.A: R&D Policy 2 Chair: Christian Rammer (ZEW) | Room 1 IV.B: Technology Markets Chair: Pere Arqué-Castells (Northwestern University) | Room 2 IV.C: Research Cooperation & Networks Chair: Florian Seliger (KOF ETH Zurich) | Heinz-Koenig-Hall (HHK) IV.D: Labor Market & Innovation Chair: Bettina Peters (ZEW) |
| The Sensitivity of R&D to Financing Constraints of Firms as Well as of Their Banks Before, During and After the Financial Crisis Marek Giebel (TU Dortmund), Kornelius Kraft (TU Dortmund) Discussant: Giuliana Battisti (University of Warwick) | Patent Transfers, PAEs and Seller's Innovation Activities. Evidence from the U.S. <u>Gianluca Orsatti (University of Bordeaux), Valerio Sterzi (University of Bordeaux)</u> Discussant: Laurie Ciaramella (MPI for Innovation and Competition) | Can You Know Too Much to Learn? The Relationship Btw. Internal Research Capa-bilities and External Knowledge for Innovation <u>Cindy Lopes-Bento</u> (Maastricht University), Markus Simeth (Copenhagen Business School) Discussant: Bart Leten (KU Leuven) | Digitization and the Demand for Physical Works: Evidence from the Google Books Project Abhishek Nagaraj (UC Berkeley), Imke Reimers (Northeastern University) Discussant: Bruce Weinberg (Ohio State University & NBER) |
| Public R&D Support and Firms' Performance Øivind A. Nilsen (Norwegian School of Economics), Arvid Raknerud (Statistics Norway), Diana Cristina lancu (Statistics Norway) Discussant: Philipp Boeing (Peking University & ZEW) | On and Off the Shelf: The Licensing and Selling of Inventions by US Universities Federico Caviggioli (Politecnico di Torino), Antonio De Marco (Politecnico di Torino), Fabio Montobbio (Università Cattolica del Sacro Cuore) Discussant: Dirk Czarnitzki (KU Leuven & ZEW) | Coopetition, Formal and Informal Appropriation Mechanisms and the Role of Environmental Dynamism and Competition Intensity Nina Karthaus (Maastricht University), Boris Lokshin (Maastricht University), Wilko Letterie (Maastricht University) Discussant: Relinde Colen (Hasselt University) | Labor Supply and Automation Innovation Alexander Danzer (KU Eichstätt-Ingolstadt), Carsten Feuerbaum (KU Eichstätt-Ingolstadt), Fabian Gaessler (MPI for Innovation and Competition) Discussant: Bettina Peters (ZEW, MaCCI & University of Luxembourg) |
| Tax Credits and Small Firm R&D Spending Ajay Agrawal (University of Toronto), Carlos Rosell (Canadian Department of Finance), Timothy Simcoe (Boston University & NBER) Discussant: Benjamin Balsmeier (University of Luxembourg) | Distance and the Timing of Licensing Laurie Ciaramella (MPI for Innovation and Competition), Gaétan de Rassenfosse (Swiss Federal Institute of Technology Lausanne) Discussant: Fabio Montobbio (Università Cattolica del Sacro Cuore) | Classifying European Research Networks Patrick Wolf (ZSW Center for Solar Energy and Hydrogen Research Stuttgart), Tobias Buchmann (ZSW Center for Solar Energy and Hydrogen Research Stuttgart) Discussant: Florian Seliger (KOF ETH Zurich) | Labour Market Reform and Innovation: Evidence from Spain María García-Vega (University of Nottingham), Richard Kneller (University of Nottingham), Joel Stiebale (DICE & Heinrich Heine University Düsseldorf) Discussant: Carsten Feuerbaum (KU Eichstätt-Ingolstadt) |

Table continues on next page

ZEW



R&D Tax Credits: Mechanisms of Private and Public Value

Benjamin Balsmeier (University of Luxembourg), Maria Kurakina (UC Berkeley), Lee Fleming (UC Berkeley), Joel Stiebale (DICE & Heinrich Heine University Düsseldorf)

Discussant: Christian Rammer (ZEW)

| Measuring the Private and Social |
|---------------------------------------|
| Returns to R&D: Unintended Spillovers |
| Versus Technology Markets |

<u>Pere Arqué-Castells</u> (Northwestern Universi-ty), Daniel Spulber (Northwestern University)

Discussant: Christian Helmers (Santa Clara University)





| | 13:30 – 15:00 Parallel Session V | | | |
|--|--|--|---|--|
| Room Brussels V.A: Public Policies Chair: Cindy Lopes-Bento (Maastricht University) | Room 1 V.B: Innovation, Competition & Productivity Chair: Mark Roberts (Pennsylvania State University & NBER) | Room 2 V.C: Knowledge Diffusion Chair: Florence Blandinieres (ZEW) | Heinz-Koenig-Hall (HHK) V.D: Teams/Employees & Innovation Chair: Elisabeth Müller (German Graduate School of Management and Law) | |
| Buyers' Role in Government R&D Procurement Francesco Decarolis (Bocconi University), Gaétan de Rassenfosse (EPFL), Leonardo M. Giuffrida (ZEW), Elisabetta Iossa (University of Rome Tor Vergata), Vincenzo Mollisi (University of Rome Tor Vergata), Emilio Raiteri (EPFL), Giancarlo Spagnolo (SITE-Stockholm School of Economics) Discussant: Gianluca Orsatti (University of Bordeaux) | The Impact of Innovation on Productivity: Profitability and Technical Efficiency Jeroen Van den Bosch (KU Leuven), Bruno Cassiman (KU Leuven), Joep Konings (KU Leuven), Stijn Vanormelingen (KU Leuven) Discussant: Markus Trunschke (ZEW) | A Firm Scientific Community Stefano Baruffaldi (University of Bath), Felix Pöge (MPI for Innovation and Competition) Discussant: Stijn Kelchtermans (KU Leuven) | Is Assortative Matching to Blame for Slowing Technology Diffusion? Eric Bartelsman (VU Amsterdam), Richard Bräuer (IWH Halle) Discussant: Olof Ejermo (Lund University & CIRCLE) | |
| R&D and Market Size: Who Benefits from Orphan Drug Regulation? Simona Gamba (University of Verona), Laura Magazzini (University of Verona), Paolo Pertile (University of Verona) Discussant: Van Anh Vuong (Maastricht University) | Prices Under Innovation: Evidence from Manufacturing Firms Jordi Jaumandreu (Boston University & CEPR), Shuheng Lin (Xiamen University) Discussant: Richard Kneller (University of Nottingham) | Knowledge Diffusion Through the Patent System: Evidence from the Invention Secrecy Act Gaétan de Rassenfosse (EPFL), Gabriele Pellegrino (EPFL), Emilio Raiteri (Eindhoven University of Technology) Discussant: Bernhard Gangelmair (ZEW, MaCCI & University of Mannheim) | The Effect of High-Skilled Migrant Hires and Integration Capacity on Firm-Level Innovation Performance: Is There a Premium? Keld Laursen (Copenhagen Business School), Bart Leten (KU Leuven), Han Nguyen (Hasselt University), Mark Vancauteren (Hasselt University) Discussant: Annette Becker (TU Munich) | |
| Capabilities, Incentives, Institutions and National Innovation Performance: A Cross-Country Study Xiaolan Fu (University of Oxford), Jing Zhang (University of Nottingham) Discussant: Cindy Lopes-Bento (Maastricht University) | International Trade and Innovation Dynamics with Endogenous Markups Laurent Cavenaile (University of Toronto), Pau Roldan-Blanco (Banco de Espana), Tom Schmitz (Bocconi University) Discussant: Mark Roberts (Pennsylvania State University & NBER) | Many Are Called, Few Are Chosen: The Role of Science in Drug Development Decisions Relinde Colen (Hasselt University), René Belderbos (KU Leuven), Stijn Kelchtermans (KU Leuven), Bart Leten (KU Leuven) Discussant: Florence Blandinieres (ZEW) | Teams, Interdisciplinarity and the Rising Complexity of Research Nicolas Carayol (Université de Bordeaux), François Maublanc (Université de Bordeaux) Discussant: Elisabeth Müller (German Graduate School of Management and Law) | |