European Meeting on Applied Evolutionary Economics 2019 (EMAEE)

Economics, Governance and Management of AI, Robots and Digital Transformations

3-5 June 2019

Held at the Attenborough Centre for the Creative Arts

SPRU - Science Policy Research Unit
University of Sussex Business School

Event Programme

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Contents

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Programme Overview

Monday 3 June

Time	Activity	Location
08:15 - 09:15	Registration	Cafe
09:15 - 09:30	Welcome address & introduction	Amphitheatre
09:30 - 10:30	Keynote **Maarten Goos** *Automatic reaction – what happens to workers at firms that automate?*	Amphitheatre
10:30 - 11:00	Coffee Break	Cafe
11:00 - 13:00	Parallel Sessions 1	Breakout rooms
13:00 - 14:00	Lunch	Cafe
14:00 - 16:00	Parallel sessions 2	Breakout rooms
16:00 - 16:30	Coffee break	Cafe
16:30 - 17:30	Keynote **Francesca Bria** *Building smart cities based on data sovereignty for citizens: The case of Barcelona*	Amphitheatre
17:30 - 18:30	Special Sessions	Breakout rooms
18:30 - 20:30	Drinks reception	Cafe

Tuesday 4 June

Time	Activity	Location
08:30 - 9:30	Registration	Cafe
09:30 - 10:30	Keynote **Katy Börner** *Visualizing skill discrepancies between research, education, and jobs*	Amphitheatre
10:30 - 11:00	Coffee break	Cafe
11:00 - 13:00	Parallel sessions 3	Breakout rooms
13:00 - 14:00	Lunch - Demonstration; Intelligent robots in action	Cafe
14:00 - 16:00	Parallel sessions 4	Breakout rooms
16:00 - 16:30	Coffee break	Cafe
16:30 - 17:30	Keynote **Geoff Mulgan** *Realising the full public value of AI: options for governance, research and action*	Amphitheatre
17:30 - 18:30	Special sessions	Breakout rooms
20:00 - 23:00	Conference Dinner Announcing winners of *International J.A. Schumpeter Society* (Best innovation paper), and *European Association for Evolutionary Political Economy - EAEPE* (Best political economy paper)	Bill's Brighton

Wednesday 5 June

Time	Activity	Location
08:30 - 09:00	Registration	Cafe
09:00 - 10:00	Keynote **Annabelle Gawer** *The business of platforms: strategy in the age of digital competition, innovation and power*	Amphitheatre
10:00 - 10:30	Coffee break	Cafe
10:30 - 12:30	Parallel sessions 5	Breakout rooms
12:30 - 13:30	Lunch - Demonstration; Intelligent robots in action	Cafe
13:30 - 15:30	Parallel sessions 6	Breakout rooms
15:30 - 16:00	Coffee break	Cafe
16:00 - 17:00	Keynote **Robert Seamans** *The variable impact of artificial intelligence on labor: the role of complimentary skills and technologies.*	Amphitheatre
17:00 - 18:30	Special session	Amphitheatre
18:30 - 19:00	Closing session	Amphitheatre

Keynote & Plenary Speakers

Katy Börner

Indiana University in Bloomington

Visualizing skill discrepancies between research, education, and jobs

Katy Börner is Distinguished Professor of Engineering and Information Science in the School of Informatics, Computing and Engineering at Indiana University Bloomington. She is also the Victor H. Yngve Professor of Engineering and Information Science, Adjunct Professor at the Department of Statistics in the College of Arts and Founding Director of the Cyberinfrastructure for Network Science Center at Indiana University as well as Visiting Professor at the Royal Netherlands Academy of Arts and Sciences (KNAW) in The Netherlands. Her research focuses on data analysis and visualisation, particularly in the areas of science and technology studies.

Francesca Bria

Barcelona City Council

Building smart cities based on data sovereignty for citizens: The case of Barcelona

Francesca Bria is Associate Professor and Senior Advisor on technology and innovation policy. She has a PhD in innovation and entrepreneurship from Imperial College, London and a MSc on Digital Economy from University of London, Birbeck. As Senior Programme Lead at Nesta, the UK Innovation Agency, she has led the D-CENT project, the biggest European Project on digital democracy, and she has been advising the European Commission on digital social innovation policies, contributing to shape a 60ML innovation program on collective platforms for sustainability. She has taught at several universities in the UK and Italy and she has advised governments, public and private organizations and movements on technology and innovation policy and its socio-economic impact.

She is currently the Commissioner of Digital Technology and Innovation for the City of Barcelona in Spain and she is leading the DECODE project on data sovereignty in Europe. She is Associate Professor at ESADE Business School and Visiting Professor at the Institute for Innovation and Public Purpose, UCL, London. Francesca has been listed in the Top 50 Women in Tech by Forbes Magazine, and in the World's top 20 most influential people in digital government by Apolitical. She has also featured in the Italian Magazine Repubblica "D", amongst the top 100 Women Changing the World.

Annabelle Gawer

University of Surrey

The business of platforms: strategy in the age of digital competition, innovation and power

Annabelle Gawer is Chaired Professor in Digital Economy, Director of CoDE - the Centre of Digital Economy, and Head of the Digital Economy, Entrepreneurship and Innovation Department at Surrey Business School, University of Surrey, UK. She is an academic pioneer and a thought-leader on platform-based innovation ecosystems and the business of digital platforms such as Google and Facebook. A highly-cited author of 4 books and 20 academic articles on platforms, she has a new book *The Business of Platforms: Strategy in the Age of Digital Competition, Innovation and Power*, with Michael Cusumano (MIT) and David Yoffie (Harvard Business School).

Annabelle Gawer advises the European Commission on regulation of online platforms as an expert member of the European Commission's Observatory of the Online Platform Economy. She has also advised the UK's House of Lords, the UK Government, and the OECD. She also regularly consults for major international corporations on platform and ecosystem strategy. Her research has been featured in The New York Times, The London Times, The Financial Times, The Economist and The Wall Street Journal.

Maarten Goos

Utrecht University

Automatic reaction – what happens to workers at firms that automate?

Maarten Goos is a Professor of Economics and Institutions at Utrecht University in the Netherlands. Previously he was Associate Professor at KU Leauven and Assistant Professor at Erasmums University Rotterdam.

His research focuses on labor economics including job polarization; technological progress; worker competencies and job tasks; labour market intermediation and matching; labour market policies; inequality and institutions. He has a PhD in Economics (2006) from the London School of Economics.

Geoff Mulgan

Nesta

Realising the full public value of AI: options for governance, research and action

Geoff Mulgan has been the Chief Executive of Nesta since 2011. Nesta is the UK's innovation foundation and runs a wide range of activities in investment, practical innovation and research in the UK and globally. Between 1997 and 2004 Geoff had various roles in the UK Government including Director of the Government's Strategy Unit and Head of Policy in the Prime Minister's office. Geoff was the first director of the thinktank Demos and first Chief Executive of The Young Foundation. He has been a Visiting Professor at LSE, UCL and Melbourne University and is currently a senior Visiting Scholar at Harvard University. Geoff's latest book is '*Big Mind: how collective intelligence can change our world*' published by Princeton University Press.

Robert Seamans

NYU Stern School of Business

The variable impact of artificial intelligence on labor: The role of complimentary skills and technologies.

Robert Seamans is an Associate Professor at New York University's Stern School of Business. He recently completed a one year appointment as a Senior Economist at the White House Council of Economic Advisers where he worked on a wide range of policies relating to technology, innovation and entrepreneurship.

His research focuses on how technology and governance structures affect strategic interactions between firms, incentives to innovate, and ultimately shape market outcomes. His research has been published in leading academic journals and has been cited in numerous outlets including The Atlantic, Forbes, Harvard Business Review, The Wall Street Journal and others.

Jennifer Lyn Morone

Jennifer Lyn Morone, Inc

Data as labour or data as capital. What policies to redistribute the gains from digital ownership?

Jennifer Lyn Morone is an artist, activist, and design researcher whose work focuses on technology, economics, and politics to explore ways of creating social justice and equal distribution of the future. In 2013, she founded Jennifer Lyn Morone, Inc, an ongoing project established to draw attention to and protest corporate power, the growing surveillance economy, data slavery, and the precarious nature of the future of work. Jennifer is currently the CEO of the RadicalxChange Foundation, which convenes a community of activists, artists, entrepreneurs and scholars committed to using dramatically expanded competitive, free and open market mechanisms to reduce inequality, build widely-shared prosperity, heal global political divides and build a richer and more cooperative social life. She is a classically trained sculptor and is an alumna of the Royal College of Art, where she studied Design Interactions with Dunne & Raby. She has recently presented at Data Natives in Berlin, and FM Joanneum University of Applied Sciences in Graz. Her work has recently been exhibited at the Aksioma in Ljubljana, the Martin Gropius Bau in Berlin, Kvalitar Gallery in Prague, the Biennale International Design in Saint-Étienne, at transmediale. She is based in Germany.

Carol Corrado

Georgetown University

Data as labour or data as capital. What policies to redistribute the gains from digital ownership?

Carol Corrado is Distinguished Principal Research Fellow at The Conference Board, Senior Policy Scholar at the Center for Business and Public Policy, McDonough School of Business, Georgetown University, and Fellow at the National Institute for Economic and Social Research in London. A past president of the American Statistical Association's Business and Economics Section, Corrado's primary research focus is measuring intangible capital and digital innovation and analyzing their role in economic growth. Corrado has authored multiple papers on the role of intangible investment and capital in modern economies, including one that won the International Association of Research on Income and Wealth's 2010 Kendrick Prize. Recent work addresses the measurement of prices for IT investment goods, data as an asset, consumer digital services, and education services, and an essay on re-imagining GDP that she co-authored won the inaugural Indigo Prize in 2017. She received the American Statistical Association's prestigious Julius Shiskin Award for Economic Statistics in 2003 and a Special Achievement Award from the Federal Reserve Board in 1998 for her contributions to measuring high-tech prices and industrial capacity. Corrado holds a PhD in economics from the University of Pennsylvania and a BS in management science from Carnegie-Mellon University.

Special Sessions

Monday 3 June
17:30 - 18:30

Intelligent robots in action: Two demonstrations
[Gardner Tower]
Thomas Nowotny - University of Sussex
Elizabeth Rendon-Morales - University of Sussex
Chair: Simone Vannuccini - University of Sussex

What if we could build an autonomous robot with the cognitive abilities of a honey bee? That is exactly what we are trying to achieve in the "brains on board" project based at the Universities of Sheffield, Queen Mary, and Sussex. In this demonstration I will show a prototype of a wheeled robot that can perform autonomous navigation tasks, based on insect-like algorithms executed on-board with our GPU enhanced neural networks framework. I will also be available throughout the session to discuss possible applications of our technology, for example in precision farming.

Are robots the future for medicine and health care?. Although there are concerns regarding the use of robots in the medical area, the benefits are promising as robots can perform more precise, fast and complicated tasks than humans. This provides the opportunity to assist doctors to perform for example surgical precision surgery. Given that robots have greater reach and flexibility, smaller incisions in specific areas of the human body can be performed with more precision. Robots can change the way people is treated at hospitals especially if they are vulnerable. Sussex Medical Robotic project will provide understanding and knowledge on novel research, developments and applications of robotics in the health care area.

The challenges of publishing on (and reviewing for) top journals: Meet the editors

[Amphitheatre]
Uwe Cantner - Journal of Evolutionary Economics
Maria Savona - Research Policy
Chair: Alberto Marzucchi - University of Sussex

The session offers guidance on "how to publish". The experienced editors of two leading journals in the field of innovation (Research Policy and Journal of Evolutionary Economics) will provide insights on the dos and don'ts in the different phases of the publication process and will offer suggestions on how to create a productive publication pipeline.

Tuesday 4 June
17:30 - 18:30

Data visualisation
[Amphitheatre]
Katy Börner - Indianna University Bloomington
Lynn Cherny - EMLyon Business School
Cesar Hidalgo - MIT Media Lab
Chair: Juan Mateos Garcia - Nesta

Recent years have seen a boom in interactive data visualisation techniques that are regularly used to inform decision-making, disseminate insights in creative ways and explore complex datasets. These developments should be of interest to EMAEE attendees for three reasons: first, they are an example of digitally enabled innovation that is transforming how we engage with data in academia, industry and the media, and as such an interesting case study of technological and creative evolution. Second, they are an increasingly important format for scientific communication. Third, they are a potentially useful tool to study complex innovation systems and technologies such as AI. This half-plenary will bring together three leading innovators in the use of interactive data visualisation - Katy Börner, César Hidalgo and Lynn Cherny - who will tell us about their work developing interactive data visualisations to understand the economy, build data visualisation literacy and analyse AI data.

Policy to facilitate AI and digitalisation that support a sustainable, inclusive and healthy economy
[Cafe]
Henry Leveson-Gower - Department for Environment, Food and Rural Affairs (DEFRA)
Caroline Paunov - Organisation for Economic Co-operation and Development (OECD)
Olivier Thereaux - Open Data Institute (ODI)
Chair: Ed Steinmueller - University of Sussex

AI and wider digitalisation both poses challenges and opportunities for policy. It creates the potential for a smarter, more transparent and integrated economy, but it also provides challenges such as developing new skills and models for collaboration. How can we develop policy to ensure future digitalisation supports a sustainable, inclusive and healthy economy.

Wednesday 5 June
17:00 - 18:30

Data as labour or data as capital. What policies to redistribute the gains from digital ownership?
[Amphitheatre]
Carol Corrado - Georgetown University
Jennifer Morone - Jennifer Lyn Morone, Inc
Chair: Maria Savona - University of Sussex

The HLG on the Impact of the Digital Transformation on EU Labour Markets final report has suggested that a framework to redistribute the gains of digital ownership is needed. The framing of this policy issue depends on whether Data are considered as Labour, or Capital, or, as suggested in the report, as an Intellectual Property. We ask the panellists to reflect around questions of how to identify, track and measure the value of data, whether current processes of creating and exploiting data-value are fair, what would in case be the most feasible ways to redistribute this value and what institutions are best placed to do it.

Monday 3 June
Parallel Session 1
11:00 - 13:00

Automation Trajectories	Industrial Dynamics and Firm Performance	Economic Fitness and Complexity	Productivity: Measurement and Impact	Technological Revolutions and Transitions
[Amphitheatre]	[Gardner Tower]	[Jane Attenborough Studio]	[Workshop Studio]	[Seminar Room]
Chair: Giorgio Triulzi	Chair: Flavio Calvino	Chair: Luciano Pietronero	Chair: Philipp Mundt	Chair: Mark Knell

Automation Trajectories

[Amphitheatre]

Chair: Giorgio Triulzi

Text-mining historical sources to trace technological evolution: the case of mass production
Frederique Bone, *Daniele Rotolo*

The enabling technologies of industry 4.0: Examining the seeds of the fourth industrial revolution
Arianna Martinelli, *Andrea Mina, massimo Moggi*

On the technological origins of robots and their contribution to future automation potentials: insights from a topic modeling approach
Chris Konop, **Ingrid Ott***, Ivan Savin*

Studying the evolution of the backbone of technology development: surveying information centrality in the patent system
Giorgio Triulzi*, Chris Magee*

Industrial Dynamics and Firm Performance

[Gardner Tower]

Chair: Flavio Calvino

Robots and their knowledge generation: Patenting and firm-level performance
Fabio Montobbio, **Jacopo Staccioli***, Maria Enrica Virgillito, Marco Vivarelli*

On the basis of brain: Neural-network-inspired change in general purpose chips
Ekaterina Prytkova*, Simone Vannuccini*

Business dynamics and digitalisation
Flavio Calvino*, Chiara Criscuolo*

Economic Fitness and Complexity

[Jane Attenborough Studio]

Chair: Luciano Pietronero

Economic fitness and complexity
Angelica Sbardella, Emanuele Pugliese, Andrea Zaccaria, **Pasquale Scaramozzino**

A dynamical systems approach to gross domestic product forecasting
Andrea Tacchella*, Dario Mazzilli, Luciano Pietronero*

Firms' complexity: technological coherence, performance, and forecasting
Andrea Zaccaria*, Louis Barlascini, Lorenzo Napolitano, Emanuele Pugliese, Luciano Pietronero*

Technological innovation and local labour markets: a complex system analysis
Angelica Sbardella*, Lorenzo Napolitano, Emanuele Pugliese*

An economic complexity analysis of China trade flows
Zhuo-Ming Ren*, Matus Medo, Yi-Cheng Zhang*

Productivity: Measurement and Impact

[Workshop Studio]

Chair: Philipp Mundt

The micro-foundations of productivity and of productivity growth in Mexico's exporting sector: 1990-2014
Juan Carlos Castillo, *Bart Verspagen, Adam Szirmai*

Determinants of productivity gap in the EU: a multilevel perspective
Randolph Luca Bruno, Elodie Douarin, Julia Korosteleva, **Slavo Radosevic**

The impact of robots on labour productivity: A panel data approach covering nine industries and 12 countries
Andre Jungmittag, *Annarosa Pesole*

Testing for replicator dynamics in value chains
Uwe Cantner, Hiroyasu Inoue, **Philipp Mundt***, Ivan Savin, Simone Vannuccini*

Technological Revolutions and Transitions

[Seminar Room]

Chair: Mark Knell

The digital revolution and its socioeconomic implications
Mark Knell, *Rita Strohmaier, Marlies Schütz*

From the cultural revolution to the digital revolution: the case of China's digitalisation technologies
Lili Wang, *Mark Knell*

A Socio-Technical History of Computing: The Role of Data
Ed Steinmueller

Rules of artificial intelligence socio-technical system for second deep transition
Bipashyee Ghosh

Note: Each paper is discussed by the previous presenter; the first paper is discussed by the last presenter.
We suggest the following timing for parallel sessions: each presentation 20 minutes; discussant 5 minutes; Q&A 5 minutes.

Parallel Session 2
14:00 - 16:00

Robotization, Digitalization, and their Impact on Labour Market

[Amphitheatre]

Chair: Francesca Lotti

The distinct effects of information technologies and communication technologies on the age-skill composition of labour demand
Sotiris Blanas

Is your broadband really broad? Internet speed, labour demand and productivity outcomes: Evidence from Italian firms
Emanuela Ciapanna, **Fabrizio Colonna**

From secular stagnation to robocalypse? Macroeconomic implications of demographic and technological changes
Henrique S. Basso, **Juan F Jimeno**

Perceptions matter! Explaining the wage gap between routine and non-routine workers
Silvia Vannutelli, **Sergio Scicchitano**, *Marco Biagetti*

Platforms and Digital Entrepreneurship

[Gardner Tower]

Chair: Giuliano Maielli

Your Uber is arriving now: An analysis of platform location decisions through an institutional lens
Matthijs Punt, Jesse Van Kollum, Jarno Hoekman, **Koen Frenken**

The wealth of (open data) nations?
Franz Huber, Alan Ponce, **Francesco Rentocchini**, *Thomas Wainwright*

The role of social networks for innovative business idea generation. Geographical distribution of social contacts, structural embeddedness and digitalisation
Jessica Birkholz

Life at the borders: Platform leadership and innovation in humanoid robotics
Giuliano Maielli, *Piera Morlacchi*

Complexity and Development

[Jane Attenborough Studio]

Chair: Josef Taalbi

Transformational complexity, systemic complexity and economic development
Jose Miguel Natera, **Fulvio Castellacci**

How production networks amplify economic growth
James McNerney, *Charles Savoie, Francesco Caravelli, J. Doyne Farmer*

Unfolding the innovation system for the development of countries: co-evolution of science, technology and production
Emanuele Pugliese, *Giulio Cimini, Andrea Zaccaria, Aurelio Patelli Luciano Pietronero, Andrea Gabrielli*

Evolution and structure of technological systems: An innovation output network
Josef Taalbi

Digitalisation, Automation and Trade

[Workshop Studio]

Chair: Antonio Andreoni

Imported intermediates, technological capabilities and exports: evidence from Brazilian firm-level data
Caio Torres Mazzi, *Neil Foster-McGregor*

Threats and opportunities in the digital era: automation spikes, trade and employment dynamics
Giacomo Domini, *Marco Grazzi, Daniele Moschella, Tania Treibich*

Robots and global value chains: How manufacturing automation is changing production organisation and systems
Antonio Andreoni, *Guendalina Anzolin*

New Methodological Applications

[Seminar Room]

Chair: Matthias Mueller

Maximum likelihood estimation of export cost thresholds distributions
Mattia Guerini, Patrick Musso, **Lionel Nesta**

Assessing the potential of unsupervised machine learning and artificial neural networks in innovation research
Matthias Mueller, *Kristina Bogner, Johannes Dahlke*

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Tuesday 4 June
Parallel Session 3
11:00 - 13:00

Societal Challenges (I)	Innovation, Employment and Inequality	Breakthrough Innovation (I)	EAEPE: Work, Environment and Planetary - Scale Computation in Political Economic Evolution	Firm Innovation (I)
[Amphitheatre]	[Gardner Tower]	[Jane Attenborough Studio]	[Workshop Studio]	[Seminar Room]
Chair: Andreas Panagopoulos	Chair: Riccardo Leoncini	Chair: Koen Frenken	Chair: Marco Raberto	Chair: Daniele Rotolo

Societal Challenges (I)

Aligning scientific impact and societal relevance: the roles of academic engagement and interdisciplinary research
Pablo D'Este, *Irene Ramos-Vielba, Nicolas Robinson-Garcia*

Deep learning, deep inequality: A study of gender diversity in AI research
Kostas Stathoulopoulos, *Juan Mateos-Garcia*

Automation and demographic change
Ana Lucia Abeliansky, *Klaus Prettner*

Appropriating the value of user-generated data in the AI era; from commons to data-managers
Andreas Panagopoulos, *Katerina Sideri*

Innovation, Employment and Inequality

AI, robots and unemployment: evidence from OECD countries.
Florent Bordot

Knowledge spillovers and employment in the pharmaceuticals industry within the triad
Luigi Aldieri, Bruna Bruno, **Luigi Senatore**, *Concetto Paolo Vinci*

Have I got a job for you? Automation, market structure and skills
Kumar Aniket

Breakthrough Innovation (I)

Breakthrough innovations and where to find them
Giovanna Capponi, *Arianna Martinelli, Alessandro Nuvolari*

Identifying the creation and diffusion of new technologies
Sam Arts, *Jianan Hou, Juan Carlos Gomez*

The determinants of recombinant inventions in renewable energy technologies: Knowledge origins across technological and geographical boundaries
Deyu Li

Mapping the technological frontier
Sergio Petralia

EAEPE: Work, Environment and Planetary - Scale Computation in Political Economic Evolution

Social reinforcement in scale free networks with weighted interactions
Theo Konc, **Ivan Savin**

Do consumers shift from private to shared ownership?
Francesco Pasimeni, *Tommaso Ciarli*

Is there a cross-sectoral co-evolution based on convergence between automative and ICT sectors?
Duygu Saracoglu

An economy under the digital transformation
Filippo Bertani, *Linda Ponta, Marco Raberto, Andrea Teglio, Silvano Cincotti*

Firm Innovation (I)

Looking forward through the past: An investigation of the evolution of robotics firms' innovation strategies
Eric Estolatan, **Aldo Geuna**

Joining standards organizations: the role of R&D expenditures, patents, and the product-market position
Justus Baron, **Cher Li**, *Shukhrat Nasirov*

Patterns of R&D downsizing in italian firms
Davide Antonioli, **Ugo Rizzo**

Do firms publish? A multi-sectoral analysis
Roberto Camerani, **Daniele Rotolo**, *Nicola Grassano*

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Parallel Session 4
14:00 - 16:00

Societal Challenges (II)
[Amphitheatre]

Chair: António Osório

Technological transformation at work: Analyzing the transition from biotech to bioeconomy using patent citation and network analysis
Muhamed Kudic, **Mariia Shkolnykova**

Artificial intelligence in healthcare: new models of innovation, productivity and the future of the Baumol disease
Charles Ayoubi, *Dominique Foray*

Organizational design, forms of knowledge and the automation debate
Edward Lorenz, *Erika Kraemer-Mbula*

Information, uncertainty and the manipulability of artificial intelligence autonomous vehicles systems
António Osório, *Alberto Pinto*

Quality of Jobs
[Gardner Tower]

Chair: Cian O'Donovan

Trade unions responses to industry 4.0 in the Italian motor valley: from corporatism to old and new dualistic tendencies
Valeria Cirillo, *Matteo Rinaldini, Jacopo Staccioli, Maria Enrica Virgillito*

Are they coming for us? Industrial robots and the mental health of German workers
Ana Abeliansky, **Matthias Beulmann**

Post-automation? A human capabilities analysis of digital design and fabrication in UK makerspaces
Cian O'Donovan, *Adrian Smith*

Breakthrough Innovation (II)
[Jane Attenborough Studio]

Chair: Koen Frenken

The 'anatomy' of breakthrough innovations. Findings from a new survey of R&D awards recipients
Lydia Reichensperger, James Bessen, Roberto Fontana, Michael Meurer, Alessandro Nuvolari, **Andrea Vezzulli**

A genealogical approach to scientific breakthroughs
Mignon Wuestman, *Iris Wanzenbock, Koen Frenken, Jarno Hoekman*

Patterns of innovation during the industrial revolution: A reappraisal using composite indicators of patent quality
Alessandro Nuvolari, *Valentina Tartari, Matteo Tranchero*

Emerging risks over the technological life-cycle: Effects of novelty on the detection of technological risks
Jarno Hoekman

Innovation Policy
[Workshop Studio]

Chair: Elena M Tur

Testbeds as innovation policy: a survey
Neil Lee, *Augustin Boey*

Mapping (AI) missions: Using data science to build prototype indicators for mission-driven innovation policies
Juan Mateos-Garcia

Is patent assignment to examiners truly a random process? Evidence from standard-essential patents at the USPTO
Elena M Tur, *Emilio Raiteri, Rudi Bekkers*

Firm Innovation (II)
[Seminar Room]

Chair: Roberto Gabriele

On R&D intensities and convergence clubs
Sebastiano Cattaruzzo

At your service? A 'synthesis' perspective on the product and service competences of top R&D investors
Carolina Castaldi, *Mafini Dosso*

Persistence of innovation and patterns of firm growth
Federico Tamagni, *Dario Guarascio*

Capabilities and opportunities capture of firm: the role of formal network agreements
Roberto Gabriele, *Andrea Mazzitelli, Giuseppe Espa*

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Wednesday 5 June
Parallel Session 5
10:30 - 12:30

Changing Nature of Labour Demand

[Amphitheatre]

Chair: Maximilian Goethner

Anatomy of the Italian occupational structure: concentrated power and distributed knowledge
Armanda Cetrulo, *Dario Guarascio, Maria Enrica Virgillito*

Changes of skill requirements across jobs and labour markets: Evidence from web vacancies
Emilio Colombo, *Fabio Mercorio, Mario Mezzanzanica*

Competing with AI: what skills matter in what situations? Lessons from humans and AI in chess
Jinhong Lu, **Milan Miric***, Florenta Teodoridis*

Run away from robots? Automation as driver of labor mobility
Maximilian Goethner*, Alina Sorgner, Simone Vannuccini*

Automation and Employment

[Gardner Tower]

Chair: Andrés Barge-Gil

Changes in the job composition of the UK labour market and its effect on firm's financial outputs
Mabel Sanchez-Barrioluengo

The impact of digitalization on employment. Evidence from Italian task-based data
Valeria Cirillo, Rinaldo Evangelista, Dario Guarascio, **Matteo Sostero**

How digitalization shapes regional labor markets: evidence from job vacancy data.
Maximilian Goethner, **Martin Kalthaus***, Gandalf Buscher*

The effect of innovation on skilled and unskilled workers during bad times
Guillermo Arenas, **Andrés Barge-Gil***, Joost Heijs*

Economics of Science

[Jane Attenborough Studio]

Chair: Matthias Kapa

Artificial intelligence in science
Stefano Bianchini, *Moritz Muller*

Shadows cast ahead?! – Open access and scientific diversity in the age of digital reproduction
Kilian Buehling, *Matthias Geissler, Dorothea Strecker*

Attractiveness and efficiency of European universities as hosts for Marie Curie grant holders
Martin Falk, **Eva Hagsten**

Foreigners graduating from doctoral studies in germany: what role do they play in the german innovation system?
Guido Buenstorf, Dominik P. Heinisch, **Matthias Kapa**

Technical Change, Employment and Economic Development

[Workshop Studio]

Chair: Juana Paola Bustamante Izquierdo

Robotisation, employment, and industrial growth intertwined across global value chains
Mahdi Ghodsi, *Oliver Reiter, Roman Stöllinger, Robert Stehrer*

Digitalization and employment: evidence from indian service sector firms
Nanditha Mathew

The effects of innovation on firm's employment : a manufacture firm level analysis for Colombia
Juana Paola Bustamante Izquierdo

Thinking About Industrial Dynamics – New Modelling Trajectories and Ways Ahead
[Seminar Room]

Chair: Isabel Almudi

Absorptive capacity in a two-sector neo-Schumpeterian model: A new role for innovation policy
Isabel Almudi, **Francisco Fatas-Villafranca***, Carlos M. Fernandez, Jason Potts, Francisco J. Vazquez*

A simulated minimum-distance method for the calibration of ABMs
Raffaello Seri*, Mario Martinoli, Davide Secchi, Samuele Centorrino*

International trade, product innovation and convergence in tastes in an evolutionary model of structural change
André Lorentz*, Tommaso Ciarli*

Entry, competition and survival in vertically-related industries
Pamela Adams, **Gianluca Capone***, Roberto Fontana, Franco Malerba*

**Note: Each paper is discussed by the previous presenter; the first paper is discussed by the last presenter.
We suggest the following timing for parallel sessions: each presentation 20 minutes; discussant 5 minutes; Q&A 5 minutes.**
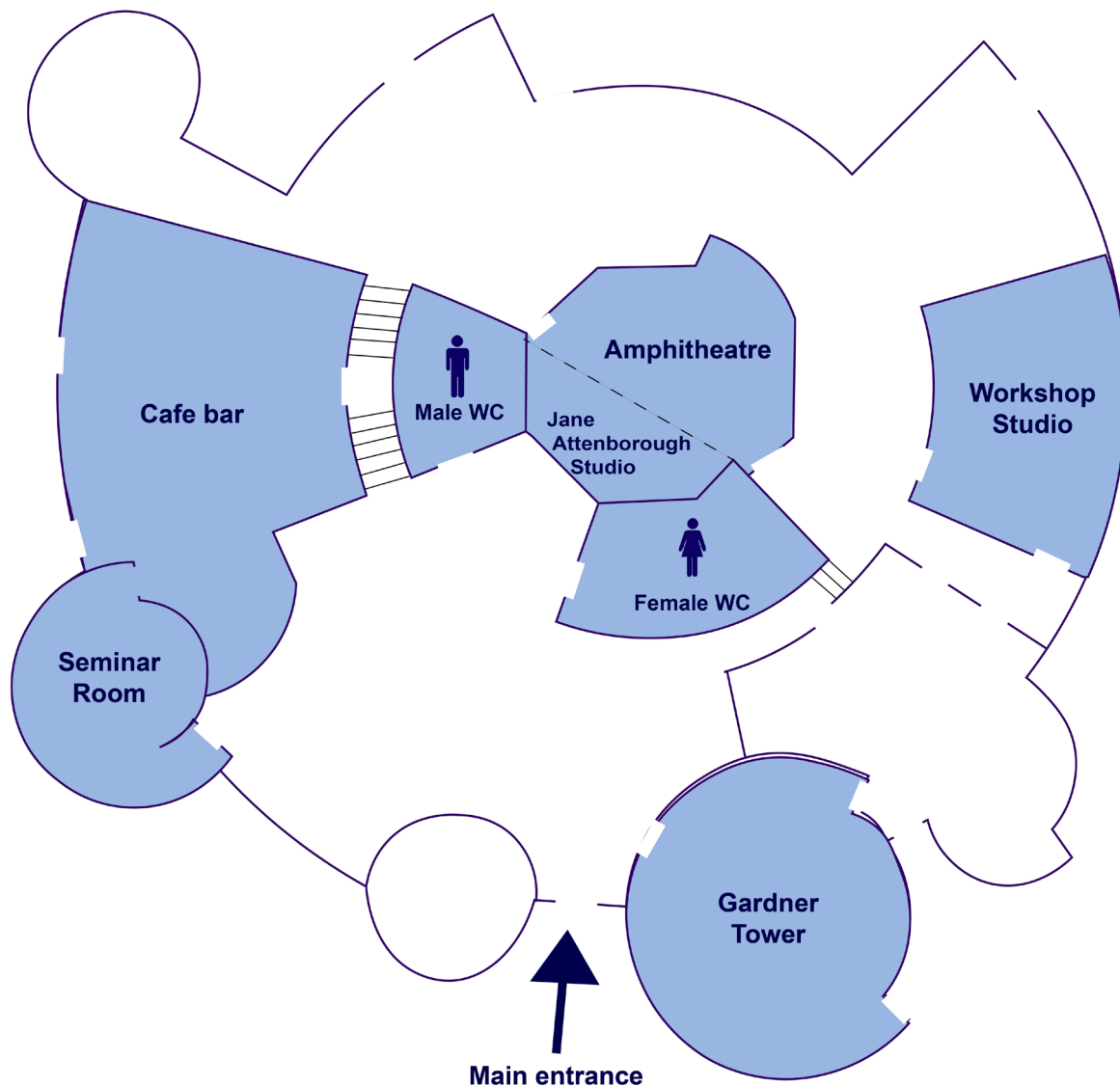
Parallel Session 6
13:30 - 15:30

AI, Organisation and Strategy	Regional Perspective	AI, Mapping and Trajectories	Trade and Global Value Chains	Macro Economic Growth
[Amphitheatre]	[Gardner Studio]	[Jane Attenborough Studio]	[Workshop Studio]	[Seminar Room]
Chair: Simone Vannuccini	Chair: Teresa Farinha	Chair: Hugo Confraria	Chair: Luca Fontanelli	Chair: Ariel Wirkierman
Exploring patent risks in artificial intelligence industry: a patent analysis *Xi Yang*	Specialization, diversification and environmental technology life-cycle **Nicolò Barbieri**, *Francois Perruchas, Davide Consoli*	The race for technological leadership in artificial intelligence **Matheus Eduardo Leusin**	Power and export sophistication in buyer-supplier relationships: Insights from Colombian customs data **Filippo Bontadini**	Economic growth, innovation and the size of the market *Levent Eraydin,* **Moritz Mueller**
Organizational principles in the information age *Luigi Marengo*	Bridging technologies in the regional knowledge space: Measurement, evolution, and determinants **Stefano Basilico**, *Holger Graf*	Mapping the evolution of artificial intelligence as a research topic in management science **Johannes Dahlke**, *Bernd Ebersberger*	Seriousness of the Smiling Curve: Who benefits from Global Value Chain Participation? Petr Pleticha	Technological revolutions and economic development: endogenous and exogenous fluctuations **Marianna Epicoco**
Artificial intelligence and firm growth - Catch-up processes of SMEs through integrating AI into the knowledge base *Alexander Kopka*	Patterns of specialization and robots adoption: A regional perspective in Italy and the UK *Massimiliano Nuccio,* **Marco Guerzoni**, *Riccardo Capelli, Aldo Geuna*	The global innovative landscape of artificial intelligence *Vincent Van Roy,* **Daniel Vertsey**, *Giacomo Damioli*	Structural change in global value chains and cost-competitiveness – vertically-integrated analysis of the European automotive sector **Maciej Grodzicki**, *Jurand Skrzypek*	Productivity slowdown or transformation towards sustainability? Schumpeter meets Georgescu-Roegen *Andreas Pyka,* **Kristina Bogner**, *Sophie Urmetzer*
Data hoarding as double marginalisation *Ed Steinmueller,* **Simone Vannuccini**	Relatedness and resilience of jobs in US cities **Teresa Farinha**, *Pierre-Alexandre Balland*	Artificial intelligence: A bibliometric mapping *Frederique Bone,* **Hugo Confraria**	International trade and technological competition in markets with dynamic increasing returns *Giovanni Dosi,* **Luca Fontanelli**, *Mattia Guerini, Mauro Napoletano*	Of yeast and mushrooms: a comparison between TFP growth and hyper-integrated labour productivity changes **Ariel Wirkierman**

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Attenborough Centre for the Creative Arts (ACCA)
Floor Plan

Cafe bar

Male WC

Amphitheatre

Jane Attenborough Studio

Workshop Studio

Female WC

Seminar Room

Gardner Tower

Main entrance

Note: The Jane Attenborough Studio is on the ground floor, and the Amphitheatre is on the first floor.

Conference Dinner

Tuesday 4th June

Bill's Restaurant, The Depot, 100 North Rd, Brighton BN1 1YE

20:00 - 23:00

The restaurant is located in the Laines. The eastest way to find Bill's from the conference venue, is to either get the 25 bus to North Road, or 25x bus to St Peters Church, and walk 5 minutes to the restaurant, or you can get the train back to Brighton station and walk 10 minutes through the Laines.

Committees

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Elizabeth Kellingley - University of Sussex
Aristea Markantoni - University of Sussex
Alberto Marzucchi- University of Sussex
Maria Savona- University of Sussex
Ed Steinmueller- University of Sussex
Simone Vannuccini- University of Sussex

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Frank Neffke - Harvard University
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INET – YSI - event supporter
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European Association for Evolutionary Political Economy (EAEPE) – Best political economy paper prize

Notes

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For general enquiries

spru@sussex.ac.uk
+44 (0)1273 873202

SPRU
University of Sussex Business School
Jubilee Building. Falmer
Brighton
BN1 9SL

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