François Lafond

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Research Interests

Economics of innovation, AI, and productivity
Environmental, energy and climate change economics
Networks and complex systems
Applied econometrics and forecasting

Current positions

University of Oxford

2020- Deputy director of the Complexity Economics programme, INET
2023- Senior researcher, Smith School of Enterprise and the Environment
2024- External Faculty, Complexity Science Hub, Vienna
2017- Associate member, Nuffield College
2014- Oxford Martin fellow, Oxford Martin School

Macrocosm Inc.

2024- Scientific advisor

Past positions

University of Oxford

2019-2023 Lead researcher, Mathematical Institute
2018-2019 Senior Research Officer, INET
2017-2019 Associate Researcher, Oxford Martin School
2014-2018 Research Officer, INET

London Institute for Mathematical Sciences

2014-2016 Postdoctoral researcher

Education

Maastricht University

2009-2014 PhD in Economics
PhD program *Economics and Policy Studies of Technical Change*, UNU-MERIT
Thesis: *The evolution of knowledge systems*
Supervisor: Robin Cowan

University of Strasbourg

2008-2009 Research Master in the economics of knowledge

University of Clermont-Ferrand

2002-2007 Bachelor and Professional Master in Economics

Publications

In peer reviewed journals

Ren, X., Marotta, F., & Lafond, F. (2026), Do common shocks drive changes in aggregate emissions intensity, *Journal of Environmental Economics & Management* 139:103384.

Bacilieri, A., Estudillo, P., Borsos, A., Hoefer, M. & Lafond, F. (2026), Firm-level production networks: what do we (really) know?, *Journal of Economic Dynamics and Control* 105313.

Bednar, J., del Rio-Chanona, M., Farmer J.D., Kaszowska-Mojsa, J., Lafond, F., Mealy, P., Pangallo, M., & Pichler, A. (2025) Complex systems approaches to 21st century challenges: Introduction to the Special Issue, *Journal of Economic Behavior and Organization* 235:107049

Yang, J., Heinrich, T., Winkler, J., Lafond, F., Koutroumpis, P., & Farmer, J. D. (2024). Measuring productivity dispersion: a parametric approach using the Lévy alpha-stable distribution, *Industrial and Corporate Change*, 34:1, 79–117.

Mungo, L., Brintrup, A., Garlaschelli, D. & Lafond, F. (2024), Reconstructing supply networks, *Journal of Physics: Complexity*.

Goldin, I., Koutroumpis, P., Lafond, F., & Winkler, J. (2024), Why Is Productivity Slowing Down? *Journal of Economic Literature* 62(1), pp. 196-268 (Direct submission).

Pangallo, M., Aleta, A., del Rio Chanona, M., Pichler, A., Martin-Corral, D., Chinazzi, M., Lafond, F., Ajelli, M., Moro, E, Moreno, Y., Vespignani, A. & Farmer, J.D (2023), The unequal effects of the health-economy tradeoff during the COVID-19 pandemic, *Nature Human Behaviour*.

Pichler, A., Diem, C., Brintrup, A., Lafond, F., Magerman, G., Buiten, G., Choi, T., Carvalho, V., Farmer, J.D. & Thurner, S. (2023), Building an alliance to map global supply networks, *Science* (Policy Forum) 382.6668: 270-272.

Mungo, L. , Lafond, F., Estudillo, P., & Farmer, J. D. (2023), Reconstructing production networks using machine learning, *Journal of Economic Dynamics & Control*, 148, 104607.

Pichler, A., Pangallo, M., del Rio-Chanona, R. M., Lafond, F., & Farmer, J. D. (2022). Forecasting the propagation of pandemic shocks with a dynamic input-output model. *Journal of Economic Dynamics & Control*, 144, 104527.

Lafond, F., Greenwald, D. & Farmer, J. D. (2022), Can stimulating demand drive costs down? World War II as a natural experiment. *Journal of Economic History* 82(3), 727-764.

Hötte, K., Pichler, A. & Lafond, F. (2021), The rise of science in low-carbon energy technologies. *Renewable & Sustainable Energy Reviews* 139, 110654.

del Rio-Chanona, R.M, Mealy, P., Beguerisse, M., Lafond, F. & Farmer, J. D. (2021), Automation and occupational mobility: a data-driven network model. *Journal of the Royal Society Interface* 18(174).

del Rio-Chanona, R.M, Mealy, P., Pichler, A., Lafond, F. & Farmer, J. D. (2020), Supply and demand shocks in the COVID-19 pandemic: An industry and occupation perspective. *Oxford Review of Economic Policy* 36, Supp 1, S94--S137.

Mariani, M. S., Medo, M., & Lafond, F. (2019). Early identification of important patents: Design and validation of citation network metrics. *Technological Forecasting and Social Change* 146, 644-654.

Way, R., Lafond, F., Lillo, F., Panchenko, V., & Farmer, J. D. (2019). Wright meets Markowitz: How standard portfolio theory changes when assets are technologies following experience curves. *Journal of Economic Dynamics & Control* 101, 211- 238.

Lafond, F., & Kim, D. (2019). Long-run dynamics of the US patent classification system. *Journal of Evolutionary Economics* 29(2), 631-664.

Lafond, F., Bailey, A. G., Bakker, J. D., Rebois, D., Zadourian, R., McSharry, P., & Farmer, J. D. (2018). How well do experience curves predict technological progress? A method for making distributional forecasts. *Technological Forecasting & Social Change* 128, 104-117.

Farmer, J. D., & Lafond, F. (2016). How predictable is technological progress? *Research Policy* 45(3), 647-665.

Lafond, F. (2015). Self-organization of knowledge economies. *Journal of Economic Dynamics & Control* 52, 150-165.

Working papers

Wagenvoort, B., Lafond, F., Dyer, J. & Farmer, J.D., Universality and predictability of technology diffusion, *INET Oxford WP* No. 2026-19.

Ng, G., Bertrand, D., Mungo, L. & Lafond, F., Synthetic supply networks, *INET Oxford WP* No. 2026-18.

Wiese, S., Kaszowska-Mojsa, J., Dyer, J., Moran, J., Pangallo, M., Lafond, F., Muellbauer, J., Calinescu, A. & Farmer, J. D. (2024), Forecasting Macroeconomic Dynamics using a Calibrated Data-Driven Agent-based Model, arXiv preprint arXiv:2409.18760. Under revision.

Pichler, A., Lafond, F. & Farmer, J. D. (2020) Technological interdependencies predict innovation dynamics, *INET Oxford WP* No. 2020-04. Under revision.

Edited volumes

Bednar, J., Beinhocker, E., del Rio Chanona, M., Farmer, J.D., Lafond, F., Mealy, P., Pangallo, M. & Pichler, A. (2026) *The Economy as an Evolving Complex System IV*, SFI press

Bednar, J., del Rio Chanona, M., Farmer, J.D., Lafond, F., Mealy, P., Pangallo, M. & Pichler, A. (2024) *Special Issue on Complex System Approaches to 21st Century Challenges: Inequality, Climate Change, and New Technologies*, Journal of Economic Behavior & Organization.

Policy reports: Koutroumpis, P. and Lafond, F. (2018), Disruptive technologies and regional innovation policy, Background paper for an OECD/EC Workshop on 22 November 2018 within the workshop series "Broadening innovation policy: New insights for regions and cities", Paris.

Teaching

Courses

University of Oxford, Executive Education

2026 Technological progress and technology diffusion

University of Oxford, MSc in Sustainability, Enterprise and the Environment

SCHEDULED AI, the economy, and energy systems

SCHEDULED Innovation policy

2025- The economics of innovation and new technologies (elective module, 4 lectures)

2025 Incentivizing Innovation (1 lecture)

2023-2025 Introduction to Macroeconomics (1 lecture)

2023-2026 Forecasting (1 tutorial)

2021 Introduction to complexity and network science for environmental economics (Co-design of one lecture).

UNU-MERIT PhD program

2012, 2013 Lecturing and tutoring, Introduction to quantitative methods and microeconomics.

Maastricht University, Bachelor in Economics

2011 Tutoring, Network economics.

Summer schools

Uncertainty in energy and IAMs of climate change

2026 Probabilistic forecasting

Economic Fitness and Complexity

2024 Firm-level supply networks.

Oxford Summer School in Economic Networks

2018, 2019 Networks in the economics of innovation.

2017, 2018 Introduction to network theory.

EU project "GROWTHCOM" complex systems summer school

2015 Technology forecasting.

Supervision of doctoral students

2025- Daniel Schmidtner, School of Geography and the Environment, Oxford

2024- Thijs Ter Horst, School of Geography and the Environment, Oxford

2021-2026 Benjamin Wagenvoort, School of Geography and the Environment, Oxford
A brief exploration of S-curves: forecasting global energy transition pathways

2020-2025 Xiyu Ren, School of Geography and the Environment, Oxford
Granular insights on the net-zero transition in electricity and industry

2019-2023 Luca Mungo, Mathematical Institute, Oxford
Reconstruction of production networks and other studies in Complexity Economics

2017-2023 Andrea Bacilieri, School of Geography and the Environment, Oxford
Production networks and planetary boundaries: challenges and opportunities for Integrated Assessment Models

2017-2021 Anton Pichler, Mathematical Institute, Oxford
Network-dependent dynamics of innovation and production

2016-2021 Maria del Rio Chanona, Mathematical Institute, Oxford
Multi-agent, non-equilibrium, and network models of labour economics and financial contagion

Other supervision: 6 Oxford Master students (3 SoGE 2026, Mathematical Institute, 2020 and 2025, Statistics, 2024), multiple RAs, 3 external master students (Polytechnique, EPFL, ESCPI), junior visitors, interns.

Grants and awards

Projects

2025-2028 Principal Investigator, Oxford Martin School Programme on Forecasting Technological Change (with Max Roser and J. Doyne Farmer)

2022-2025 Co-Investigator, ESRC project "Productive and Inclusive Net Zero (PRINZ) - Opportunities and barriers in the transition to sustainable and equitable growth". PI: Ralf Martin; Co-I at Oxford: Sam Fankhauser.

2021-2023 Co-Investigator, ONS - Alan Turing Institute project "Understanding production networks". PI: Sam Cohen; Co-I on sub-project: Vasco Carvalho.

Prizes

2021 Rebuilding Macro "Complexity and macroeconomics" third prize for Pichler et al. (2020) "In and out of lockdown: Propagation of supply and demand shocks in a dynamic input-output model".

Professional service

PhD theses external committee member

2026 Giacomo Masali, Politecnico di Torino, Engineering.
2025 Davide Luzzati, University of Pisa, Economics.
2024 Leonardo Ialongo, University of Pisa, Data Science.
2020 Alje Van Dam, Utrecht University, Economic Geography.
2018 Anil Kavuri, Australian National University, Economics.

Events co-organizer

2019-PRESENT INET Complexity Economics seminar series.
2022-PRESENT 1^{st}-5^{th} Interdisciplinary Workshop on Firm-Level Supply Networks: Reconstruction and Dynamics. Vienna, Cambridge, Oxford.
2023 Complex System Approaches to 21st Century Challenges: Inequality, Climate Change, and New Technologies, Santa Fe Institute, August 2023.
2022 The Future of Complexity Economics, 3 days Conference, Santa Fe.

Hiring committees: 11 Postdocs, 3 support team, doctoral students.

Impact and outreach

Coverage in the Press: e.g *BBC News* (web), *The Guardian*, and *Bloomberg* for our work on renewables costs, *Financial Times* for our work on productivity (twice) and our work on WWII, and *Los Angeles Times* for our work on Covid-19.

Research visits

SUMMER 2025 Complexity Science Hub Vienna.
WINTER 2024 IMT Lucca (Prof. Diego Garlaschelli).
SUMMER 2024 Complexity Science Hub Vienna.
SPRING 2023 University of Cambridge (Prof. Vasco Carvalho).
SPRING 2019 MIT International Design Center (Prof. Chris Magee).
SUMMER 2015 University of Fribourg (Prof. Yi-Chen Zhang).
SUMMER 2014 Santa Fe Institute.