Simon Finster

Postdoctoral fellow
CREST-ENSAE

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Citizenship: German

Placement Director: Noam Yuchtman noam.yuchtman@economics.ox.ac.uk
Placement Coordinator: Daniel Spencer dphiladmin@economics.ox.ac.uk

Research fields

Primary: Auction and Market Design **Secondary:** Industrial Organization, Experimental Economics

Academic positions

CREST-ENSAE and Inria/FairPlay (Paris, France) – *Postdoctoral fellow* 2022 -

Simons Laufer Mathematical Sciences Institute (Berkeley, CA) – Mathematics and Computer Science of Market and Mechanism Design – *Associate fellow* Aug - Oct 23

Education

University of Oxford – *DPhil in Economics*, Nuffield College, Advisor: Prof. Paul Klemperer 2016 - 2022

Paris School of Economics – *Masters in Economics (APE)*, Magna Cum Laude 2014 - 2016

Karlsruhe Institute of Technology – *BSc in Industrial Engineering*, First-class honors 2010 - 2013

References

Prof. Péter Esö
University of Oxford
Department of Economics
peter.eso@economics.ox.ac.uk
website

Prof. Paul Klemperer (thesis advisor)
University of Oxford
Department of Economics
paul.klemperer@nuffield.ox.ac.uk
website

Prof. Bary Pradelski (postdoc advisor)
CNRS, Maison Française d'Oxford
Department of Economics
bary.pradelski@cnrs.fr
website

Prof. Zaifu Yang
University of York
Department of Economics
zaifu.yang@york.ac.uk
website

Teaching experience

ETH Zurich – Controversies in Game Theory 2023
- Guest lecturer

University of Hagen – Economics (graduate and undergraduate), 2021 - 2022
- Game Theory and Topics in Game Theory (seminar) - instructor

University of Oxford – PPE & Economics and Management (undergraduate) 2019 - 2021
- Game Theory - teaching assistant
- Core Microeconomics 2nd year (revision classes, 2019-20)
- Microeconomic Analysis - tutorials at Regent's Park College (2019-20)

University of Oxford – Tutor for graduate students of MSc in Financial Economics, 2018 - 2020
Microeconomics - one-to-one tuition

Supervision: **University of Hagen** – several BSc/MSc theses in Microeconomics 2021 - 2023
Regent's Park College – undergraduate independent research 2020
University of Oxford – MSc thesis in Financial Economics 2018

Honors, Grants, and Fellowships

Associate Fellowship | Simons Laufer Mathematical Sciences Institute, Berkeley, CA	2023
Research Grant | Nuffield College, University of Oxford (£10,000)	2022
Research Grant | George-Webb Medley Fund, University of Oxford (£1,600)	2022
Young Economists' Essay Awards Finalist | EARIE 2021 Annual Conference	2021
Best Paper Award Nominee Microeconomics | Econometric Society Winter School	2020
Doctoral Grant | Department of Economics, University of Oxford (£5,500)	2019 - 2020
Oxford-Jerry Hausman Graduate Scholarship | DPhil at Nuffield College (£70,200)	2016 - 2019
Fellowship of the American Foundation for the PSE | Visit at UC Berkeley ($10,000)	2016
Deutschlandstipendium | National Merit Scholarship (€3,600)	2013 - 2014
Baden-Württemberg-Stipendium | Merit Scholarship for visit at CUHK (€2,400)	2013

Visits

University of California, Berkeley – *Visiting Student*, Economics PhD program	2016
The Chinese University of Hong Kong – *Visiting Student*, Economics and Mandarin	2013 - 2014

Relevant positions held

University of Oxford – Research assistant to Prof. Paul Klemperer	2016 - 2021
Paris Dauphine University – Research assistant to Prof. Anna Creti	2015 - 2016
Karlsruhe Institute of Technology – Research assistant to Prof. Christof Weinhardt	2012 - 2013

Publications

Substitutes markets with budget constraints: solving for competitive and optimal prices (**arXiv**)

Revise and Resubmit at **Theoretical Economics**

WINE 2023 The 19th Conference On Web And InterNet Economics, 2023

[S. Finster, Paul Goldberg, and Edwin Lock]

Abstract: In markets with multiple divisible goods and budget-constrained buyers, competitive equilibrium may not be efficient. We study the notion of constrained social welfare that, in the presence of budgets, is implemented by prices. Firstly, we show that competitive equilibrium maximizes constrained social welfare and the constrained efficient allocation can be supported by competitive prices. Secondly, if buyers have linear substitutes valuations, the unique constrained efficient outcome also maximizes the seller's revenue. Our proof is based on a novel characterization of the set of feasible prices at which demand does not exceed supply. Our results have implications for digital monopolies and markets for the exchange of financial assets.

Welfare-Maximizing Pooled Testing (**arXiv**)

EC'23: Proc. 24th ACM Conference on Economics and Computation, 2023

Exemplary track paper award

[S. Finster, Michelle González Amador, Edwin Lock, Franciso Marmolejo Cossío, Evi Micha, Ariel Procaccia]

Abstract: Large-scale testing is crucial in pandemic containment, but resources are often prohibitively constrained. We study the optimal application of pooled testing for populations that are heterogeneous with respect to an individual's infection probability and utility that materializes if included in a negative test. We show that the welfare gain from overlapping over non-overlapping testing is bounded. Moreover, non-overlapping allocations, which are conceptually and logistically simpler to implement, are empirically near-optimal, and we design a heuristic mechanism for finding these near-optimal allocations. In numerical experiments, we highlight the efficacy and viability of our heuristic in practice. We implement and provide evidence on the benefits of utility-weighted pooled testing in a real-world setting. Our pilot study at a higher education research institute in Mexico finds no evidence that performance and mental health outcomes of participants in our regime are worse than under the counterfactual of full access for individuals without testing.

Working papers

Equitable Pricing in Auctions (**latest version**)

Job Market Paper

[S. Finster, Patrick Loiseau, Simon Mauras, Mathieu Molina, and Bary Pradelski]

Abstract: We initiate the study of how auction design affects the division of surplus among buyers. We propose a parsimonious measure for equity and apply it to the family of standard auctions for homogeneous goods. Our surplus-equitable mechanism is efficient, Bayesian-Nash incentive compatible, and achieves ex-post surplus parity among winners. The uniform-price auction is equity-optimal if and only if buyers have a pure common value. With pure private values, against intuition, the pay-as-bid auction is not always preferred in terms of equity. In auctions with price mixing between pay-as-bid and uniform prices, we provide prior-free bounds on the equity-preferred pricing rule under a common regularity condition on signals.

Selling Multiple Complements with Packaging Costs (**latest version**, **arXiv**)

Young Economists' Essay Award Finalist EARIE 2021
Best Paper nominee Econometric Society Winter School 2020

Abstract: We consider a package assignment problem with multiple units of indivisible items. The seller specifies preferences over partitions (between buyers) of their supply as packaging costs. To express these preferences, we propose incremental costs together with a graph that defines cost interdependence. This facilitates using linear programming to find anonymous and package-linear Walrasian equilibrium prices. We provide necessary and sufficient conditions for the existence of Walrasian equilibria, as well as additional sufficient conditions. Furthermore, our cost framework ensures fair and transparent dual pricing and admits preferences over the concentration of allocated bundles in the market.

Strategic behavior in auctions for substitutes: theory and experiment (draft available on request)

Abstract: We study strategic bidding behavior in three first-price auctions for substitute goods: a Product-Mix auction, a sequential auction, and a simultaneous auction. Theory predicts that in the unique risk-neutral Bayes-Nash equilibrium, the Product Mix and the sequential format perform nearly identically with respect to bidder surplus, revenue, and welfare, and the simultaneous auction only slightly worse. We test these predictions in a virtual lab experiment, considering an asymmetric market with a flexible bidder and competitive fringes, and a symmetric market with three flexible bidders. The empirical results are in stark contrast with the theory: the Product-Mix auction outperforms both other formats in bidder surplus and welfare, while the simultaneous auction generates the highest revenue. With symmetric bidders, payoffs in the PMA are 90% (156%) higher than in the sequential (simultaneous) auction, and efficiency is 12% higher.

Strategic Bidding in Product-Mix, Sequential, and Simultaneous Auctions (**Nuffield College WP 2020 - W03**)

Abstract: We study equilibria in Product-Mix, sequential, and simultaneous auctions, which are used to sell differentiated, indivisible goods. A flexible bidder with unit demand, interested in buying any of the goods, competes against several inflexible bidders, each interested in only one specific good. For first-price and second-price payments, we obtain theoretical results on equilibrium bidding, and compare efficiency, revenue, and bidder surplus numerically. Differences in outcomes between Product-Mix and sequential auctions are small for a range of value distributions. The simultaneous auction performs worst in all dimensions, and differences in performance vary substantially with the degree of competition the flexible bidder faces.

Media Writing

Welfare-Maximizing Pooled Testing (**link**)

SIGecom Exchanges Letter, June 2024

[S. Finster, Michelle González Amador, Edwin Lock, Franciso Marmolejo Cossío, Evi Micha, Ariel Procaccia]

Conference and seminar presentations

ENS Paris-Saclay, CEPS, Departmental Seminar (scheduled), Paris/France 2024
University of Oxford, Theory Lunch, Oxford/UK
Junior Workshop on Mathematical Game Theory, Rome/Italy (scheduled)
MATCH-UP 2024, Oxford/UK
EARIE 2024, Amsterdam/Netherlands
EEA-ESEM 2024, Rotterdam/Netherlands
Conference on Mechanism and Institution Design 2024, Budapest/Hungary
North American Summer Meeting of the Econometric Society 2024, Nashville/USA

14th Day on Computational Game Theory, Bonn/Germany

CIRM 'From matchings to markets', Marseille/France 2023
SLMath, Seminar 2x, in Math and CS of Market and Mechanism Design, Berkeley/USA
Alpine Game Theory Symposium, Grenoble/France
Young Economist Meeting, Brno/Czech Republic

EARIE 2022, Vienna/Austria 2022
EEA-ESEM 2022, Milan/Italy
North American Summer Meeting of the Econometric Society 2022, Miami/USA
Conference on Mechanism and Institution Design 2022, Singapore (online)

Research Institute of Industrial Economics (IFN), Seminar, Stockholm/Sweden (online) 2021
INFORMS Annual Meeting, Anaheim/USA (online)
Verein für Socialpolitik, Annual Meeting (online)
EEA-ESEM 2021, Copenhagen/Denmark (online)
EARIE 2021, Bergen/Norway (online)
European Workshop on Economic Theory 2021, Akko/Israel (online)
University of Oxford, CESS Colloquium, Oxford/UK
14th RGS Doctoral Conference in Economics, Duisburg/Germany (online)

6th World Congress of the Game Theory Society, 2x, Budapest/Hungary (online) 2020
Prague Conference on Behavioral Sciences, Prague/Czech Republic
Econometric Society Winter School, Delhi School of Economics, Delhi/India (online)
World Congress of the Econometric Society, Milan/Italy (online)
University of Oxford, Student Microtheory Workshop, Oxford/UK

University of Oxford, CESS Colloquium, Oxford/UK 2019
University of Oxford, Gorman Seminar, Oxford/UK

Refereeing and organization

EC'24 Program Committee, Journal of Economic Behavior & Organization, International Journal of Industrial Organization, Economic Analysis and Policy

Organizing committee of the **GAIMSS'24** summer school and conference in Metz, France

Volunteering and Service

EAAMO bridges | development working group and inequality working group 2021 -

GJCC chair and **DPhil Representative** | Department of Economics, University of Oxford 2017 - 2019

Equality Representative, Nuffield College, University of Oxford 2016 - 2019

Lecturer and IT management, Diocese of Mbinga, Tanzania 2009 - 2010

Other

Coding: Julia, LaTeX, Mathematica, Matlab, oTree, Python, R

Languages: German (native), English (fluent), French (fluent), Spanish (basic)

Last updated: October 2024