

# Simon Finster

Postdoctoral fellow

CREST-ENSAE

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**Placement Director:** Noam Yuchtman  
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## RESEARCH FIELDS

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

## ACADEMIC POSITIONS

<b>CREST-ENSAE</b> and Inria/FairPlay (Paris, France) – <i>Postdoctoral fellow</i>	2022 -
<b>Simons Laufer Mathematical Sciences Institute</b> (Berkeley, CA) – Mathematics and Computer Science of Market and Mechanism Design – <i>Associate fellow</i>	Aug - Oct 23

## EDUCATION

<b>University of Oxford</b> – <i>DPhil in Economics</i> , Nuffield College, Advisor: Prof. Paul Klemperer	2016 - 2022
<b>Paris School of Economics</b> – <i>Masters in Economics (APE)</i> , Magna Cum Laude	2014 - 2016
<b>Karlsruhe Institute of Technology</b> – <i>BSc in Industrial Engineering</i> , First-class honors	2010 - 2013

## REFERENCES

<b>Prof. Péter Esö</b> <i>University of Oxford</i> Department of Economics <a href="mailto:peter.eso@economics.ox.ac.uk">peter.eso@economics.ox.ac.uk</a> 🌐 <a href="#">website</a>	<b>Prof. Paul Klemperer</b> (thesis advisor) <i>University of Oxford</i> Department of Economics <a href="mailto:paul.klemperer@nuffield.ox.ac.uk">paul.klemperer@nuffield.ox.ac.uk</a> 🌐 <a href="#">website</a>
<b>Prof. Bary Pradel</b> (postdoc advisor) <i>CNRS, Maison Française d'Oxford</i> Department of Economics <a href="mailto:bary.pradel@cnrs.fr">bary.pradel@cnrs.fr</a> 🌐 <a href="#">website</a>	<b>Prof. Zaifu Yang</b> <i>University of York</i> Department of Economics <a href="mailto:zaifu.yang@york.ac.uk">zaifu.yang@york.ac.uk</a> 🌐 <a href="#">website</a>

## TEACHING EXPERIENCE

<b>ETH Zurich</b> – Controversies in Game Theory • Guest lecturer	2023
<b>University of Hagen</b> – Economics (graduate and undergraduate), • Game Theory and Topics in Game Theory (seminar) - instructor	2021 - 2022
<b>University of Oxford</b> – PPE & Economics and Management (undergraduate) • Game Theory - teaching assistant • Core Microeconomics 2nd year (revision classes, 2019-20) • Microeconomic Analysis - tutorials at Regent's Park College (2019-20)	2019 - 2021
<b>University of Oxford</b> – Tutor for graduate students of MSc in Financial Economics, Microeconomics - one-to-one tuition	2018 - 2020
<b>Supervision:</b> <b>University of Hagen</b> – several BSc/MSc theses in Microeconomics <b>Regent's Park College</b> – undergraduate independent research <b>University of Oxford</b> – MSc thesis in Financial Economics	2021 - 2023 2020 2018

## HONORS, GRANTS, AND FELLOWSHIPS

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

## VISITS

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<b>University of California, Berkeley</b> – <i>Visiting Student</i> , Economics PhD program	2016
<b>The Chinese University of Hong Kong</b> – <i>Visiting Student</i> , Economics and Mandarin	2013 - 2014

## RELEVANT POSITIONS HELD

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

## PUBLICATIONS

**Are Digital Monopolies Exploitative?**

Previously “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 sellers 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

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### **Equitable 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 surplus parity among winners ex-post. The uniform-price auction is equity-optimal if and only if buyers have a pure common value. Against intuition, the pay-as-bid auction is not always preferred in terms of equity if buyers have pure private values. 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 do not completely align 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

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### **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

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[Séminaire parisien de Théorie des Jeux](#), Paris/France (scheduled) 2025

[Virtual Market Design Seminar](#), online (scheduled) 2024

[Junior Workshop on Mathematical Game Theory](#), Rome/Italy (scheduled)

[University of Oxford](#), Theory Lunch, Oxford/UK

<b>ENS Paris-Saclay, CEPS</b> , Departmental Seminar, Paris/France	
<b>MATCH-UP 2024</b> , Oxford/UK	
<b>EARIE 2024</b> , Amsterdam/Netherlands	
<b>EEA-ESEM 2024</b> , Rotterdam/Netherlands	
<b>Conference on Mechanism and Institution Design 2024</b> , Budapest/Hungary	
<b>North American Summer Meeting of the Econometric Society 2024</b> , Nashville/USA	
<b>14th Day on Computational Game Theory</b> , Bonn/Germany	
<b>CIRM ‘From matchings to markets’</b> , Marseille/France	2023
<b>SLMath</b> , Seminar 2x, in <b>Math and CS of Market and Mechanism Design</b> , Berkeley/USA	
<b>Alpine Game Theory Symposium</b> , Grenoble/France	
<b>Young Economist Meeting</b> , Brno/Czech Republic	
<b>EARIE 2022</b> , Vienna/Austria	2022
<b>EEA-ESEM 2022</b> , Milan/Italy	
<b>North American Summer Meeting of the Econometric Society 2022</b> , Miami/USA	
<b>Conference on Mechanism and Institution Design 2022</b> , Singapore (online)	
<b>Research Institute of Industrial Economics (IFN)</b> , Seminar, Stockholm/Sweden (online)	2021
<b>INFORMS Annual Meeting</b> , Anaheim/USA (online)	
<b>Verein für Socialpolitik, Annual Meeting</b> (online)	
<b>EEA-ESEM 2021</b> , Copenhagen/Denmark (online)	
<b>EARIE 2021</b> , Bergen/Norway (online)	
<b>European Workshop on Economic Theory 2021</b> , Akko/Israel (online)	
<b>University of Oxford</b> , CESS Colloquium, Oxford/UK	
<b>14th RGS Doctoral Conference in Economics</b> , Duisburg/Germany (online)	
<b>6th World Congress of the Game Theory Society</b> , 2x, Budapest/Hungary (online)	2020
<b>Prague Conference on Behavioral Sciences</b> , Prague/Czech Republic	
<b>Econometric Society Winter School</b> , Delhi School of Economics, Delhi/India (online)	
<b>World Congress of the Econometric Society</b> , Milan/Italy (online)	
<b>University of Oxford</b> , Student Microtheory Workshop, Oxford/UK	
<b>University of Oxford</b> , CESS Colloquium and Gorman Seminar, Oxford/UK	2019

## REFEREING AND ORGANIZATION

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**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

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<b>EAAMO bridges</b>   development <b>working group</b> and inequality <b>working group</b>	2021 -
<b>GJCC chair</b> and <b>DPhil Representative</b>   Department of Economics, University of Oxford	2017 - 2019
<b>Equality Representative</b> , Nuffield College, University of Oxford	2016 - 2019
Lecturer and IT management, Diocese of Mbinga, Tanzania	2009 - 2010

## OTHER

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

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