# Fedor Sandomirskiy (legal spelling: Sandomirskii)

| CONTACT INFORMATION | Princeton University<br>Department of Economics<br>277 Julis Romo Rabinowitz Building<br>Princeton, NJ 08544 | +1 (626) 567-9223<br>fsandomi@princeton.edu<br>https://fedors.info/<br>Google Scholar profile |

**RESEARCH INTERESTS**

microeconomic theory, information economics, mechanism design, fair division, algorithmic economics, optimal transportation and majorization methods

**ACADEMIC POSITIONS**

Princeton University, USA — 2023-2025
— Associate Research Scholar & Lecturer

California Institute of Technology, USA — 2021-2023
— Linde Postdoctoral Fellow in Economics, PIMCO Fellow in Data Science

Technion, Israel — 2018-2021
— postdoc at Game Theory group (Dept. of Industrial Engineering & Management)
— member of Mechanism Design for Data Science group

National Research University Higher School of Economics, Russia
— senior researcher (remote since 2018) at International Lab. of Game Theory — 2015-2022
— head of the laboratory — 2017-2018

St.Petersburg State University, Russia — 2012-2015
— researcher at Chebyshev Laboratory (Dept. of Mathematics)

**EDUCATION**

Central Economics and Mathematics Institute, Russian Academy of Sciences
— Ph.D. (Candidate of Sciences) in Mathematical Methods of Economics — 2014

St.Petersburg State University
— M.Sc. in Mathematical Physics — 2011
— B.Sc. in Mathematical Physics — 2009

**WORKING PAPERS**

"Decomposable Stochastic Choice" with Omer Tamuz

"On the origin of the Boltzmann distribution" with Omer Tamuz

"Private private information" with Kevin He and Omer Tamuz
 R&R in *Journal of Political Economy*

"The geometry of consumer preference aggregation" with Philip Ushchev

"Persuasion as transportation" with Itai Arieli and Yakov Babichenko

"Beckmann's approach to multi-item multi-bidder auctions" with Alexander V. Kolesnikov, Aleh Tsyvinski, and Alexander P. Zimin

"Bayesian persuasion with mediators" with Itai Arieli and Yakov Babichenko

"Efficiency in random resource allocation and social choice" with Federico Echenique, Joseph Root

"On social networks that support learning" with Itai Arieli and Rann Smorodinsky
 R&R in *Journal of Economic Theory*

**MAIN PUBLICATIONS**

"Feasible joint posterior beliefs" with Itai Arieli, Yakov Babichenko, and Omer Tamuz
 *Journal of Political Economy,* 2021, 129(9),
 EC'20 best paper award

"Competitive division of a mixed manna" with Anna Bogomolnaia, Herve Moulin, Elena Yanovskaya
 *Econometrica*, 2017, 85(6):1847-1871

"On the fair division of a random object" with Anna Bogomolnaia and Herve Moulin
 *Management Science*, 2022, 68(2):1174-1194

"Fair division with minimal sharing" with Erel Segal-Halevi
 *Operations Research*, 2022, 70(3):1762-1782

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| OTHER JOURNAL PUBLICATIONS | "Algorithms for competitive division of chores" with Simina Brânzei<br>*Mathematics of Operations Research*, 2023 |
| | "Feasible joint posterior beliefs through examples" with Itai Arieli, Yakov Babichenko, Omer Tamuz<br>*SIGecom Exchanges*, 2021 |
| | "Representative Committees of Peers" with Reshef Meir and Moshe Tennenholtz<br>*Journal of Artificial Intelligence Research*, 2021, 71:401-429 |
| | "A polynomial-time algorithm for computing a Pareto optimal and almost proportional allocation" with Haris Aziz and Herve Moulin<br>*Operations Research Letters*, 2020, 48(5):573-578 |
| | "Dividing bads under additive utilities" with Anna Bogomolnaia, Herve Moulin, Elena Yanovskaya<br>*Social Choice and Welfare*, 2019, 52(3):395-417 |
| | "On repeated zero-sum games with incomplete information and asymptotically bounded values"<br>*Dynamic Games and Applications*, 2018, 8(1):180-198 |
| | "Repeated games of incomplete information with large sets of states"<br>*International Journal of Game Theory*, 2014, 43(4):767-789 |
| | "An exact renormalization formula for the Maryland model" with Alexander Fedotov<br>*Communications in Mathematical Physics*, 2015, 334(2):1083-1099 |

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| REFERRED CONFERENCE PUBLICATIONS | "Private private information" with Kevin He and Omer Tamuz<br>*ACM Conference on Economics and Computation (EC'22)*, 2022 (extended abstract) |
| | "Persuasion as transportation" with Itai Arieli and Yakov Babichenko<br>*ACM Conference on Economics and Computation (EC'22)*, 2022 (extended abstract) |
| | "Protecting the protected group: circumventing harmful fairness" with Omer Ben-Porat and Moshe Tennenholtz<br>*The Thirty-Fifth AAAI Conference on Artificial Intelligence (AAAI-21)*, 2021 |
| | "On social networks that support learning" with Itai Arieli and Rann Smorodinsky,<br>*ACM Conference on Economics and Computation (EC'21)*, 2021 (extended abstract) |

**TEACHING EXPERIENCE**

Instructor

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|---|---|
| — "Mathematics for Economists" (ECO 500), Princeton | 2023 |
| — "Algorithmic Economics" (CS/SS/EC149), Caltech | 2022-2023 |
| developed from scratch intro to economic design for CS/math grads & undergrads | |
| — "Information in Games," Technion | 2020 |
| co-taught with Rann Smorodinsky | |
| — "Introduction to mechanism design," Higher School of Economics | 2017 |
| co-taught with Alexander Nesterov | |
| — Probability, Calculus 1, Algebra 1, St.Petersburg State University | 2013-2014 |

Supervisor

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| — Egor Kravchenko, St.Petersburg State University | 2022 |
| undergrad project "Belief covariance: tight bounds" | |
| — Alisa Maricheva, Higher School of Economics | |
| M.Sc. thesis "Fair division of indivisible goods with or without money transfers" | 2018 |
| — Yulia Ibragimova, Higher School of Economics | |
| M.Sc. thesis "Online procurement auctions: corruption detection" | 2018 |
| B.Sc. thesis "Competitive mechanisms for fair division of indivisible goods" | 2016 |

**SERVICE**

Referee
— Journals: JET, TE, GEB, AEJ:micro, ET, SCW, MOR, EJOR
— Grants: German-Israeli Foundation, Israel Science Foundation

Program committee member

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| — ACM Conference on Economics and Computation (EC); Area Chair in 2023 | 2019-2023 |
| — The 17th Conference on Web and Internet Economics (WINE) | 2021 |
| — Russian Game Theory Olympiad | 2018-2021 |

Organizer
— Victoria Kreps Memorial Prize for young game theorists and economic theorists    2021
— conference "New Directions in Social Choice in St.Petersburg," HSE
— conference "Economic Design and Algorithms in St.Petersburg," HSE,    2019
— school "Game Theory: Applications, Networks, Emotions," HSE
— conference "Algorithmic aspects of Social Choice and Auctions," HSE    2018
— conference "Advances in Fair Division," HSE    2017
— school "Fair Division: Between Economics, Mathematics and Computer Science," HSE
— conference "Game Theory and Mechanism Design," HSE    2016
— school "Computational Social Choice and Fair Division," HSE
— research seminar in economic theory, HSE    2015-2018

Other service
— Mentor, "Mentorship workshop," ACM Conference on Economics and Computation (EC)    2022
— Committee member, Ph.D. defense of Zijian Tao, Caltech
— I gave multiple popular lectures on Game Theory and Economic Design    2015-2018
     for undergrads and gifted high-school students

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| GRANTS & AWARDS | — PIMCO Postdoctoral Fellowship in Data Science | 2022-2023 |
| | — RFBR 19-01-00762 "Cardinal mechanisms for resource allocation" | 2019-2021 |
| | — Lady Davis Postdoctoral Fellowship, Technion | 2018-2019 |
| | — RFBR 16-01-00269 "Asymptotic problems of game theory" | 2016-2018 |
| | — RFBR 13-01-00462 "Variability of beliefs in multi-stage interactions" | 2013-2015 |
| | — B.L. Ovsievich prize in economics | 2013 |
| | — V. Deych prize for B.Sc. thesis in mathematical physics | 2009 |

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| INVITED SEMINARS | — Caltech, Princeton, Berkeley, Toronto, Essex, UCL, Duke, Brown, Drexel, Western | 2023 |
| | — Bonn, Northwestern, CMU BS, UCSD, Edinburgh, HUJI Econ-CS, Technion IE&M, Purdue CS | 2022 |
| | — PSE, Joint Hong Kong Theory Seminar, Caltech Econ., Caltech CMS, Caltech CMI, HSE Econ. | 2021 |
| | — Cornell Econ., TAU & HUJI, HSE Math, Technion & Bar-Ilan | 2020 |
| | — Stanford MS&E, Caltech Econ., Bar-Ilan Econ., HUJI Econ-CS, Technion IE&M, TAU CS, TAU Math | 2019 |
| | — Rochester Econ., Technion IE&M | 2018 |
| | — HUJI Econ-CS | 2017 |
| | — HUJI Econ | 2013 |

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| CONFERENCES | — EC'22 (2 papers), INFORMS Annual Meeting, Stony Brook Game Theory, INFORMS Workshop on Market Design, LA Theory workshop | 2022 |
| | — EC'21, LA Theory workshop | 2021 |
| | — EC'20 (best paper award), CMID20, Dynamics and Information Workshop TAU | 2020 |
| | — "De Aequa Divisione" at LUISS (invited talk and tutorial) | 2019 |
| | — 22nd CTN Workshop, MATCH UP, "Imperfect Markets" at NES (invited talk and tutorial) | 2017 |
| | — Congress of the GT Society, COMSOC 2016 | 2016 |
| | — MAGTA | 2014 |
| | — 5th Israeli GT conference | 2013 |
| | — Games and Strategy in Paris | 2012 |

REFERENCES

Omer Tamuz
Div. of the Humanities and Social Sciences, Caltech
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Federico Echenique
Dept. of Economics, UC Berkley
fede@econ.berkeley.edu

Herve Moulin
A. Smith Business School, University of Glasgow
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Aleh Tsyvinski
Dept. of Economics, Yale
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