MIT Economics

KARL M. ASPELUND

OFFICE CONTACT INFORMATION
MIT Department of Economics
77 Massachusetts Ave, E52-301
Cambridge, MA 02139
https://economics.mit.edu/people/phd-students/karl-m-aspelund

CONTACT INFORMATION
Email: kmasp@mit.edu
Phone: +1 (401) 808-1512

MIT PLACEMENT OFFICER
Professor David Autor
dautor@mit.edu
+1 (617) 258-7698

MIT PLACEMENT ADMINISTRATOR
Ms. Shannon May
shmay@mit.edu
+1 (617) 324-5857

DOCTORAL STUDIES	Massachusetts Institute of Technology (MIT) Ph.D. in Economics. Expected completion June 2025 COMMITTEE AND REFERENCES

Professor Benjamin Olken MIT Economics 77 Mass. Ave, E52-542 Cambridge, MA 02139 +1 (617) 253-6833	Professor Tobias Salz MIT Economics 77 Mass. Ave, E52-460 Cambridge, MA 02139 +1 (617) 715-2266
Professor Michael D. Whinston MIT Economics 77 Mass. Ave, E52-533 Cambridge, MA 02139 +1 (617) 258-8408	Professor Catherine D. Wolfram MIT Sloan School of Management 100 Main St., E62-514 Cambridge, MA 02142 +1 (617) 258-5728

PRIOR EDUCATION	Harvard University Bachelor of Arts in Environmental Science and Public Policy, *magna cum laude* with highest honors	2017
CITIZENSHIP	United States of America, Iceland	
LANGUAGES	English (native), Icelandic (native)	
CODING	Julia, Python, Stata, R, ArcGIS. Beginner in SQL.	
FIELDS	Major fields: Environmental Economics, Industrial Organization Minor fields: Public Economics	
TEACHING EXPERIENCE	Microeconomic Theory and Public Policy (14.03), Teaching Assistant to Prof. Tobias Salz. Rating 6.8/7.	2023
RELEVANT PRIOR POSITIONS	Research Associate to Profs. Simon Jäger and Benjamin Schoefer, MIT	2018-2019
	Pre-Doctoral Fellow, Education Innovation Laboratory at Harvard University	2017-2018
	Research Intern, Resources for the Future (for Carolyn Kousky)	2016
	Research Intern, OECD Nuclear Energy Agency	2015

MIT Economics

FELLOWSHIPS, HONORS, AND AWARDS		
	MIT Graduate Conference Travel Grant	2023
	US NOAA-Sea Grant Fellowship	2022-2025
	George and Obie Shultz Fund (3x)	2020-2023
	Graduate Fellow, Minda de Gunzburg Center for European Studies at Harvard University	2020-2025
	National Science Foundation Graduate Research Fellowship	2019-2024
	Enel Endowment Prize, Best Undergraduate Thesis in Environmental Economics	2017
	Environmental Science & Public Policy Undergraduate Thesis Prize	2017
	Phi Beta Kappa	2016

PROFESSIONAL ACTIVITIES

Refereeing: *American Economic Review: Insights*

Presentations:
Occasional Workshop in Environmental and Resource Economics (2024)
University of California, Davis (2024)
NMFS Social Science Symposium (2024)
NMFS-Sea Grant Fellows Research Symposium (2023, 2024)
North American Association of Fisheries Economists Forum (2023)
Academic Workshop for Icelandic Economists Abroad (2023)

Other Activities:
Invited participant, NBER Summer Institute, IO and EEE (2024)
MIT Application Mentorship Program (2020-2023)
Berkeley-Sloan Summer School in Environmental & Energy Economics (2020)

Service:
Mentor, MIT application mentorship program (2020-2023)
Organizer, IO lunch (2021-2023), MIT structural reading group (2022-2023), MIT environmental tea (2022-2023)

RESEARCH PAPERS

"Redistribution in Environmental Permit Markets: Transfers and Efficiency Costs with Trade Restrictions"
(Job Market Paper)

Regulators often impose trade restrictions in environmental permit markets to redistribute value to groups that do not directly benefit from permit trade, such as labor in regulated firms, at the expense of lowering gains from trade. I evaluate the efficiency and distributional impacts of two common trade restrictions in Iceland's fisheries permit market: segmented trading by firm size and individual production requirements. Using detailed harvest and permit trading data linked to administrative records on worker employment and earnings, I conduct a difference-in-differences analysis showing that permit trade increases the harvest share of productive boats by 15 percentage points, shifts income from lower- to higher-income workers, and reduces aggregate labor intensity by 12%. I further demonstrate that the trade restrictions, designed to counteract these labor impacts, are binding and lower productivity. To quantify the distinct trade-offs from each restriction, I develop a model of fishery production and permit trading to simulate profits, labor demand, and

worker earnings in equilibria without the restrictions. Per dollar of foregone profit, segmentation increases labor demand 20 times more than the production requirement, while the production requirement redistributes 14% more income to low-income workers than segmentation. Implementing both restrictions outperforms the production requirement alone and is preferable to segmentation alone if regulators aim to balance job creation with a compressed income distribution.

"Additionality and Asymmetric Information in Environmental Markets: Evidence from Conservation Auctions"
  (with Anna Russo)

Market mechanisms aim to deliver environmental services at low cost. However, this objective is undermined by participants whose conservation actions are not marginal to the incentive — or "additional" — as the lowest cost providers of environmental services may not be the highest social value. We investigate this potential market failure in the world's largest auction mechanism for ecosystem services, the Conservation Reserve Program, with a dataset linking bids in the program's scoring auction to satellite-derived land use. We use a regression discontinuity design to show that three of four marginal winners of the auction are not additional. Moreover, we find that the heterogeneity in counterfactual land use introduces adverse selection in the market. We then develop and estimate a joint model of multi-dimensional bidding and land use to quantify the implications of this market failure for the performance of environmental procurement mechanisms and competitive offset markets. We design alternative auctions with scoring rules that incorporate the expected impact of the auction on bidders' land use. These auctions increase efficiency by using bids and observed characteristics to select participants based on both costs and expected additionality.

RESEARCH IN PROGRESS

"Spatially Managing the Commons"
   (with Aaron Berman)

Spatial closures are a common policy tool to allow natural resources to regenerate, but reopening these areas can trigger a "race," where rapid harvesting lowers prices and reduces overall efficiency. Closures also create leakage, as harvests shift to other areas, altering resource dynamics across space. Using the US Northeast scallop fishery as a case study, we analyze vessel-level harvesting data, biological stock assessments, and nearly two decades of policy variation from the National Oceanic and Atmospheric Administration (NOAA). We find that reopened areas induce strategic competition, with vessels offloading high-quality scallops simultaneously, driving down market prices and creating a prisoner's dilemma where spacing out effort could increase overall revenue. To evaluate closures, we estimate a model of area choice to quantify fishing costs, congestion effects, and spatial substitution, combine this with a spatial resource growth function to measure biological regrowth, and construct a demand curve to capture price effects. Simulating the removal of closures allows us to quantify their value by examining how harvests, prices, stocks, and spatial leakage evolve over time. We further investigate how closures interact with existing policies, proposing alternatives such as landing fees or tradable permits to better space out effort, reduce price declines, address leakage, and maximize the aggregate value of the stock.

OTHER RESEARCH	With Michael C. Droste, James H. Stock, and Christopher D. Walker. 2020. "Identification and Estimation of Undetected COVID-19 Cases Using Testing Data from Iceland." NBER Working Paper No. 2752. With Jan-Horst Keppler. 2018. Chapters 5 and 8. In *Full Costs of Electricity Provision*. OECD: Paris, France.