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RESEARCH AREAS

Environmental Economics, Development Economics

EDUCATION

2017 - 2023 Ph.D., Food and Resource Economics, Faculty of Land and Food Systems, UBC

Advisors: Sumeet Gulati (LFS), Patrick Baylis (Economics)

Committee: Siwan Anderson (Economics), Frederik Noack (LFS)

2015 M.A., Economics, University of British Columbia

2012 B.A., Economics, Environmental Studies, McGill University

SELECTED FELLOWSHIPS AND AWARDS

2022 Delegate to Lindau Nobel Laureate Meetings

2021-22 Fellow, Institute for Asian Research, UBC School of Public Policy

2020 Nehru Humanitarian Award in Indian Studies

2019- SSHRC Joseph-Armand Bombardier Doctoral Fellowship

2015 W. Erwin Diewert Graduate Prize for Best Economics Masters Thesis

WORKING PAPERS

1. "[Infrastructure, Institutions, and the Conservation of Biodiversity in India](#)" (Job Market Paper)

Abstract: Biodiversity in the tropics is severely threatened by land use change. This paper studies the extent to which infrastructure development degrades biodiversity in India and, secondly, the role of local institutions in mitigating the tradeoff. Combining new data on infrastructure-driven deforestation with one million birdwatching diaries, and exploiting within-observer travel for identification, I document a sizeable infrastructure-biodiversity tradeoff. Transport, irrigation, resettlement camps, and mining projects account for 20% of national species loss. The tradeoff is more than halved under institutions that include indigenous groups in development planning. Informed consent is a key mechanism, underscoring the importance of grassroots institutions for balancing development and conservation.

2. "[Rural-Urban Migration and the Re-organization of Agriculture](#)" with Frederik Noack, Mushfiq Mobarak, and Olivier Deschenes

Abstract: This paper studies how food needs are met when labour moves from farms to cities. Using household micro data from India and exogenous variation in migration induced by urban income shocks, we document sharp declines in food production among migrant-sending households residing near cities. Surprisingly, these households do not substitute labour with capital-intensive production, nor do they adopt new agricultural machinery. Instead, they divest from agriculture altogether and cultivate less land. In contrast, we find that food production surges and technology modernizes in remote regions where households are unaffected by labour loss. These findings are consistent with a two-sector general equilibrium model in which the incidence of direct and indirect effects depend on the spatial organization of the economy. Counterfactual simulations show that over half of the aggregate food shortage driven by the labour channel is mitigated by indirect spatial spillovers.

3. “The Long-Term Health Impacts of Power Plants” with Rohini Pande, Kevin Rowe and Anish Sugathan

Abstract: This paper quantifies the long-run effects of India’s dramatic expansion of coal-fired electric power plants from 1970 to 2017 on neonatal, infant, and child health. We use a particle trajectory model that draws wind-driven patterns of emissions dispersion from power plants to construct an exogenous measure of cumulative pollution exposure over three decades. Our measure of historic power plant exposure predicts present-day air quality three to six times better than conventional wind-direction instruments in the literature. A one standard deviation increase in long-run exposure to power plant emissions increases neonatal, infant, and child deaths by 0.6 (2 percent of the mean), 0.9 (1.9 percent), and 1.3 (2.2 percent) per 1000 live births, respectively. These effects are largely driven by exposure in-utero, as well as exposure to private power plant clusters forming between 1992-2005. We find no evidence of differential economic development between more- and less-exposed districts, ruling out adaptation, and underscoring pollution as the main mechanism.

PUBLICATIONS

1. “[Ruling The Roost: Avian Species Reclaim Urban Habitat During India’s COVID-19 Lockdown](#) (with Sumeet Gulati)”. *Biological Conservation* (2022), Vol. 271: 109597.
2. “[Saving the world from your couch: The heterogeneous medium-run benefits of COVID-19 lockdowns on air pollution](#) (with Jean-Philippe Bonardi, Quentin Gallea, Dimitrija Kalanoski, Rafael Lalive, Frederik Noack, Dominic Rohner, and Tommaso Sonno)” *Environmental Research Letters* (2021), 16(7): 074010.

OTHER WRITING

1. “Water Pollution and Public Health in India: The Potential for a Market-Based Approach” (with Michael Greenstone, Rohini Pande, and Hardik Shah). 2013. *Health and South Asia Digital Handbook*.

PRESENTATIONS (* Scheduled)

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| 2022 | NBER Summer Institute (Environment & Energy Economics), UBC Vancouver School of Economics, PacDev, OSWEET, Columbia IPWSD, WEAI, AERE, CREEA |
| 2021 | Camp Resources, AERE, CREEA (Best Paper Prize), Columbia IPWSD, UBC CFREE |
| 2020 | UBC CFREE, TWEEDS (postponed) |
| 2019 | Berkeley/Sloan Summer School, UBC CFREE, UBC LFS Graduate Conference |

RESEARCH EXPERIENCE

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| 2019 | Consultant, Metro Vancouver, Environmental Regulation & Enforcement |
| 2015 - 2016 | Pre-Doctoral Fellow to Rohini Pande, Harvard Kennedy School |
| 2012 - 2014 | Research Assistant to Michael Greenstone, Rohini Pande, Nick Ryan, and Anant Sudarshan, J-PAL South Asia |
| 2012 | Short-Term Consultant, The World Bank |

TEACHING

Instructor of Record

FRE 460: Economics of Food Consumption (Winter 2022)

Teaching Assistant

International Macroeconomics (GPP 502, Fall 2019), Graduate Microeconomic Theory (LFS 500, Winter 2018), Intermediate Macroeconomics (ECON 302, Winter 2017), Intro. Microeconomics (ECON 101, Winter 2014), Intro. Macroeconomics (ECON 102, Fall 2015)

PROFESSIONAL ACTIVITIES

Referee for: *Environment and Development Economics*, *Environmental Research Letters*

SKILLS

Software: Stata, R, Python

Languages: English (Native), Hindi (Conversational), Spanish (Conversational)

PERSONAL INFORMATION

Born: September 27, 1990

Citizenship: Canada, USA

Hobbies: Hiking, hip hop, Improv

REFERENCES

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