ARPITA NEHRA

Rochester Hills, Detroit | +1 (763)-222-3932 | arpitanehra0@gmail.com| LinkedIn | Website

Applied economist with ten years' expertise in econometric modelling and policy evaluation. Strong background in cost-benefit analysis, spatial and administrative data integration, and interdisciplinary research. Collaborated with research teams of hydrologists, engineers, natural scientists, forest and water professionals. Passionate about applying economic principles and modelling to produce environmental, health and energy policy solutions.

EDUCATION

Utah State University — Logan, Utah
Ph.D., Applied Economics — Aug 17 – Dec 21
Essays related to water transfer and water sharing: The Past and The Present.

Madras School of Economics — Chennai, India
M.Sc., Environmental Economics — Aug 13 – May 15

University of Rajasthan — Jaipur, India
B.Com. (Honors), Economic Administration and Financial Management — July 10 – Mar 13

SKILLS

Expertise Areas : **Cost-Benefit**, Quasi-experimental, Econometrics**, General Equilibrium, Optimization**, Valuation.
Programming : **R, GAMS,** Python, ArcGIS, Stata, MATLAB, Microsoft Office Suite.

EXPERIENCE

University of Minnesota

Postdoctoral Associate — **Sep 24 - Dec 25**
Project: Impact of Sustainable Forest Incentive Act (SFIA)

- Conducted applied economic analysis using high-resolution spatial and economic data to evaluate land-use and infrastructure outcomes under a state-level environmental policy.
- Applied econometric and machine-learning methods (linear regression and boosted regression trees) to identify key policy impacts influencing land conversion and system-level outcomes.
- Contributed to grant proposal development, supporting applied research on policy evaluation and infrastructure-relevant environmental economics.

North Carolina State University

Postdoctoral Research Scholar — **Jan 24 - Aug 24**
Project: Impact of Hurricanes on Forest based employment in the Southern United States

- Investigated heterogeneous treatment assignment and quasi-experimental setup using a **propensity score weighting** method.
- Presented research to the interdisciplinary stakeholders.

Postdoctoral Research Scholar — **Mar 22 - Dec 23**
Project: A multi-scale decision support tool to quantify forest benefits on water quantity & quality in the Southeastern United States

- Developed a valuation function to quantify water quality benefits from forested watersheds through avoided treatment costs.
- Implemented a targeted survey of 1200 water utilities, both in rural and urban areas, throughout the Southeastern US.

Utah State University

Graduate Teaching Assistant — **May 21- Dec 21**

- Developed examinations and online instructional materials for undergraduate courses in agricultural economics and natural resource institutions (APEC 1600); evaluated coursework and provided structured feedback.
- Provided instruction and individualized academic support to graduate students in **Applied Econometrics (APEC 5330/6330)**, covering regression methods and empirical analysis.

Graduate Research Assistant **Aug 17 - May 21**

Project: Nash Bargaining for Fair Water Allocation- Ensuring Overall Gains

- Implemented **Nash bargaining solutions** to the **general equilibrium model** and numerically simulated the model to calculate willingness to pay for a water-sharing agreement in Utah.
- Compared the willingness to pay with the costs proposed under the Bear River Development Project (BRDP).
- Demonstrated that the regions involved would be willing to pay for the transfer only in special cases of, i) equal cost-sharing among counties ii) Much higher water augmentation rates.

Project: Regional Water Transfer and Economic Growth- Evidence from The Owens Valley Water Transfer

- Modeled the effect of Owens Valley water transfer on the economic growth of Los Angeles in the 1900s, employing **synthetic control and difference-in-differences** methods on census data.
- Statistical evidence suggested that the water transfer created a significant impact on the manufacturing sector, leading to a 50% higher economic growth in Los Angeles.

Ashoka Trust for Research in Ecology and Environment

Research Associate **March 17 - July 17**

Adaptation at scale in semi-arid regions (ASSAR)

- Developed a **farmer behavior model** using multinomial logit and studied the factors affecting farmers' choice of climate change adaptation strategies.
- Demonstrated that households with agriculture as primary and secondary occupations had a significant impact on choosing borewells for adapting to climate change.

Consultant **July 15 - March 17**

Bangalore Urban Metabolism Project

- Led a primary survey team on groundwater consumption for 400 households in the city of Bengaluru, India.
- Performed a comprehensive literature synthesis on "urban demand of water from multiple sources" to understand the complexity of modeling urban water demand in developing countries.
- Quantified per capita daily water consumption from diverse sources and analyzed proportions of households with full marginal or average cost information, enabling precise assessment of cost awareness in urban populations.

Hydro social Metabolism of Bangalore City: a comprehensive study of urban water consumption

- Causal analysis to identify drivers of water quality and purification.

Indira Gandhi Institute for Development Research

Intern **May 14 - July 14**

- Analyzed key drivers of land degradation in Indian agriculture, identifying population density, crop yield, and fertilizer subsidy as primary factors.

PUBLICATIONS

Irfan, Z.B., Nehra, A. (2016), "Analyzing the aid effectiveness on the living standard: A check-up on Southeast Asian countries." *Journal of Urban Management*, 5(1), 23-31.

Caplan, A., Nehra, A., (2021), "Nash Bargaining in a General Equilibrium Framework: The case of Shared Surface Water Supply." *Water Resources and Economics*, 39, 100206.

Nehra, Arpita; Baker, Justin S.; Caldwell, Peter V.; Martin, Katherine L.; Warziniack, Travis W.; Manner, Richard; Mihiar, Christopher M.; Frey, Gregory E.; and Costanza, Jennifer K. 2025. The potential impact of forest loss on drinking water treatment costs in the southeastern United States. Forest Policy and Economics 179, 103603.

BOOK CHAPTERS

Edwards, E.C., Nehra, A. (2020), "Importance of freshwater for irrigation." M. Goldstein and D. DellaSala Eds. *Encyclopedia of the World's Biomes 1st Edition.*

WORKING PAPERS

Irfan, Z.B., Nehra, A. Mondal, M. (2015), "The Culmination of the MDG's: A New Arena of the Sustainable Development Goals." *Working papers 2015-127*, Madras School of Economics, Chennai, India.

WORK IN PROGRESS

"Regional Water Transfer and Economic Growth: Theory and Evidence"- with Dr. Reza Oladi, Dr. Arthur Caplan, and Dr. Sherzod Akhundjanov.

Impacts of Hurricanes on Forest-based-Employment in the Southeastern United States: A Case Study of Hurricane Michael- with Dr. Sabhyata Lamichhane, Dr. Rajan Parajuli, Dr. Stephanie Chizmar, Dr. Consuelo Brandeis and Dr. Thomas Ochuodho. (Under Review)

OTHERS

Caldwell, P. V., Martin, K. L., Vose, J. M., Baker, J. S., Warziniack, T. W., Costanza, J. K., Frey, G.E., Nehra, A. & Mihiar, C. M. (2023). Forested watersheds provide the highest water quality among all land cover types, but the benefit of this ecosystem service depends on landscape context. *Science of The Total Environment*, 882, 163550.

Warziniack, T. W., Bagstad, K., Knowles, M., Mihiar, C., Nehra, A., Rhodes, C., ... & Sims, C. B. (2023). Natural Capital Accounting on Forested Lands. NBER Chapters. Ext

HONORS, AWARDS & FELLOWSHIPS

Graduate Tuition Fellowship, USU, 2017- 2021.

Agri Mahmoud Agah Scholarship, College of Agriculture and Applied Sciences, USU, 2019-2020.

Hung Wo Ching Agricultural Economics Grad Scholarship, College of Agriculture and Applied Sciences, USU, 2018-2019.

Summer Exchange Program, 'Indo-German Centre of Sustainability', Kiel University, Germany, 2015 (Among 15 Indian students).

CONFERENCES AND WORKSHOPS

2024: ASSA Annual Meeting, Texas, Poster Session;
ISFRE Symposium, Little Rock;
CAMP Resources, Asheville.

2023: Southern Forest Resource Assessment Consortium Annual Meeting, Raleigh;
Southern Economic Association (AERE session), New Orleans;
Annual Water Resources Conference, Raleigh.

2022: Midwest Economic Association (AERE Session); AERE@OSWEET (Virtual).

2021: 6th Annual International Symposium on Economic Theory, Policy and Applications, Athens, Greece (Online);
Ph.D. Economics Virtual Seminar (Online).

PROFESSIONAL ACTIVITIES

Reviewer: Athens Journal of Business and Economics, Journal of Hydro Informatics, Forest Policy and Economics, Economic Modelling.

Affiliations: American Economic Association, Association of Environmental and Resource Economists\

REFERENCES

Dr. Mike Kilgore
Professor
University of Minnesota
mkilgore@umn.edu

Dr. Justin Baker
Assoc Professor
North Carolina State University
jsbaker4@ncsu.edu

Dr. Peter Caldwell
Research Hydrologist
USDA Forest Service Southern Research Station
peter.v.caldwell@usda.gov

Dr. Sherzod Akhundjanov
Associate Professor
Utah State University
sherzod.akhundjanov@usu.edu