

CURRICULUM VITAE: SOUMIK PURKAYASTHA

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Academic Interests

- Causal discovery and inference
- Spatiotemporal analysis
- Infectious disease modeling

Education and Training

Years of attendance	University, city, state	Degree, Year Awarded	Field
2014-17	St. Xavier's College (Autonomous), Kolkata, WB, INDIA	B.Sc. (Hons.), 2017	Statistics
2017-19	Indian Statistical Institute, Kolkata, WB, INDIA	M.Stat, 2019	Statistics
2019-21	University of Michigan, Ann Arbor, MI, USA	M.S., 2021	Biostatistics
2019-24	University of Michigan, Ann Arbor, MI, USA	Ph.D., 2024	Biostatistics

Appointments and Positions

Academic

Years Position Held	Title	Department, School, Name and location of institution
2019-23	Graduate Student Research Assistant	Department of Biostatistics, University of Michigan, Ann Arbor, MI, USA.
2023-24	Rackham Predoctoral Fellow	Rackham Graduate School, University of Michigan, Ann Arbor, MI, USA.
2024-	Assistant Professor (tenure stream)	Department of Biostatistics and Health Data Science, University of Pittsburgh, Pittsburgh, PA, USA.
2024-	Research Biostatistician	Center for Health Equity Research and Promotion, VA Pittsburgh Healthcare System, US Department of Veteran Affairs, Pittsburgh, PA, USA.

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Non-Academic

Years Position Held	Title	Name and location of company/organization
2018	Data Science intern	Walmart Labs, Bengaluru, KA, INDIA
2021	AI/ML intern	Apple Inc., Cupertino, CA, USA

Membership in Professional and Scientific Societies

Years Inclusive	Name of Society
2021-	International Biometrics Society, Eastern North American Region (ENAR)
2021-	American Statistical Association (ASA)
2021-	Institute of Mathematical Statistics (IMS)
2022-	International Biometrics Society, Western North American Region (WNAR)
2023-	International Indian Statistical Association (IISA)
2024-	International Chinese Statistical Association (ICSA)

Honors

Year of Award	Title of Award and Awarding Association
2017-19	Merit-based scholarship for good academic performance, Indian Statistical Institute, Kolkata, WB, INDIA.
2019	Sabyasachi Roy Memorial Gold Medal, Indian Statistical Institute, Kolkata, WB, INDIA.
2019	Michigan Data Science Challenge Winner, Michigan Institute of Data Science, University of Michigan, Ann Arbor, MI, USA.
2020	Richard G. Cornell Fellowship, Department of Biostatistics, University of Michigan, Ann Arbor, MI, USA.
2022-24	Rackham Conference Travel Grant (awarded annually), Rackham Graduate School, University of Michigan, Ann Arbor, MI, USA.
2023	Rising Star Award, School of Public Health, University of Michigan, Ann Arbor, MI, USA.
2023	Best Paper Award and Best Presentation (Runner-up) Award, Western North American Region of the International Biometrics Society.
2023-24	Rackham Predoctoral Fellowship, Rackham Graduate School, University of Michigan, Ann Arbor, MI, USA.

Professional Activities

Teaching

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Other Teaching (lectures, tutorials, and continuing education courses)

Date(s)	Type of Teaching	Title
2024 Fall	Guest lecture	Fundamentals of Public Health, BS in Public Health Degree Program, School of Public Health, University of Pittsburgh
2024 Fall	Guest lecture	BIOST 2145 Health Data Science, MS in Biostatistics Degree Program, School of Public Health, University of Pittsburgh

Service on Comprehensive or Qualifying Committees

Dates Served	Student Population	Type of Exam
2024-25	16 M.S. students	MS in Biostatistics Comprehensive Exam committee

Mentoring of Early and Mid-Career Faculty

Dates	Name of Faculty	Position of Faculty Member
2025-	Joshua Gordon	Consult & Liaison Psychiatrist, Center for Health Equity Research and Promotion, VA Pittsburgh Healthcare System

Research and Training

Grants and Contracts Received

Co-Investigator

Years Inclusive	Grant and/or Contract Number and Title	Source	Award Amount	%Effort
2024-25	<i>Developing User-Centered Reporting Strategies to Promote Equity in the Veterans Health Administration</i> P.I.: Leslie Hausmann, Center for Health Equity Research and Promotion, VA Pittsburgh Healthcare System	VA Office of Health Equity	\$1,843,583	20% effort
2025	<i>Health-related Social Needs and Suicidality Among Sexual Minority Veterans</i> P.I. Joshua Gordon, Center for Health Equity Research and Promotion, VA Pittsburgh Healthcare System	VA Competitive Career Development Fund (VISN 4)	\$47,217	15% effort

Statistician

Years Inclusive	Grant and/or Contract Number and Title	Source	Award Amount	%Effort
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2025	<i>Center for Health Equity Research and Promotion</i> P.I.: Michael Fine and Peter Groeneveld, Center for Health Equity Research and Promotion, VA Pittsburgh Healthcare System	VA Health Systems Research	\$5,305,000	15% effort
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Grants and Contracts Pending

Co-Investigator

Years Inclusive	Grant and/or Contract Number and Title	Source	Award Amount	%Effort
Submitted: 2025 May	<i>Persistence and Transmission Dynamics of H5N1 in Poultry and the Environment: Data-Driven Approaches to Improve Avian Influenza Response Strategies</i> P.I.: Santhamani Ramasamy, Suresh Kuchipudi, Department of Infectious Diseases and Microbiology, University of Pittsburgh	DA Animal and Plant Health Inspection Service	\$2,000,000	10% effort
Awarded: 2025 – 29	<i>Characterizing the Quality and Equity of Evidence-based Prescribing for Hospitalized Veterans,</i> P.I.: Timothy Anderson and Utibe Essien, Center for Health Equity Research and Promotion, VA Pittsburgh Healthcare System	VA Health Systems Research	\$800,000	10% effort

Invited Presentations Related to Your Research

Date	Title of Presentation	Venue
Jun 2025 (Upcoming)	Examining Directional Association between Depression and Anxiety	International Indian Statistical Association Conference, <i>Lincoln, USA</i>
Aug 2025 (Upcoming)	Examining Directional Association between Depression and Anxiety	Joint Statistical Meeting, American Statistical Association, <i>Nashville, USA</i>
Dec 2025 (Upcoming)	A Mechanistic Framework for Collider Detection in Observational Data	International Joint Conference on Computational and Financial Econometrics (CFE) and Computational and Methodological Statistics, <i>London, UK</i>
Dec 2025 (Upcoming)	A Mechanistic Framework for Collider Detection in Observational Data	Joint Meetings of 2025 Taipei International Statistical Symposium and 13th ICSA International Conference, <i>Taipei, TAIWAN</i>

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Publications

h-index: 10 ([Google scholar](#)) as of May 2025.

+: co-first author.

Refereed Articles – Published or In Press

1. Ray, D., Salvatore, M., Bhattacharyya, R., Wang, L., Du, J., Mohammed, S., **Purkayastha, S.**, Halder, A., Rix, A., Barker, D., Kleinsasser, M., Zhou, Y., Bose, D., Song, P., Banerjee, M., Baladandayuthapani, V., Ghosh, P., & Mukherjee, B. (2020). [Predictions, Role of Interventions, and Effects of a Historic National Lockdown in India's Response to the COVID-19 Pandemic: Data Science Call to Arms](#). Harvard Data Science Review, (Special Issue 1).
2. Giri, S., **Purkayastha, S.**, Hazra, S., Chanda, A., Das, I. and Das, S., (2020). [Prediction of monthly Hilsa \(*Tenualosa ilisha*\) catch in the Northern Bay of Bengal using Bayesian structural time series model](#). Regional Studies in Marine Science, 39, p.101456.
3. Zhou, Y., Wang, L., Zhang, L., Shi, L., Yang, K., He, J., Bangyao, Z., Overton, W., **Purkayastha, S.**, & Song, P. (2020). [A Spatiotemporal Epidemiological Prediction Model to Inform County-Level COVID-19 Risk in the United States](#). Harvard Data Science Review, (Special Issue 1).
4. **Purkayastha, S.**, Salvatore, M. and Mukherjee, B., (2020). [Are women leaders significantly better at controlling the contagion during the COVID-19 pandemic?](#) Journal of Health and Social Sciences, 5(2), p.231.
5. Tang, L., Zhou, Y., Wang, L., **Purkayastha, S.**, Zhang, L., He, J., Wang, F. and Song, P.X.K., (2020). [A review of multi-compartment infectious disease models](#). International Statistical Review, 88(2), pp.462-513.
6. **Purkayastha, S.** and Song, P., (2021). [Discussion on “The timing and effectiveness of implementing mild interventions of COVID-19 in large industrial regions via a synthetic control method” by Tian et al.](#) Statistics and Its Interface, 14(1), pp.21-22.
7. Salvatore, M., Basu, D., Ray, D., Kleinsasser, M., **Purkayastha, S.**, Bhattacharyya, R. and Mukherjee, B., (2020). [Comprehensive public health evaluation of lockdown as a non-pharmaceutical intervention on COVID-19 spread in India: national trends masking state-level variations](#). BMJ open, 10(12), p.e041778.
8. **Purkayastha, S.**, Bhattacharyya, R., Bhaduri, R., Kundu, R., Gu, X., Salvatore, M., Ray, D., Mishra, S. and Mukherjee, B., 2021. [A comparison of five epidemiological models for transmission of SARS-CoV-2 in India](#). BMC Infectious Diseases, 21, pp.1-23.
9. **Purkayastha, S.**, Kundu, R., Bhaduri, R., Barker, D., Kleinsasser, M., Ray, D. and Mukherjee, B., (2021). [Estimating the wave 1 and wave 2 infection fatality rates from SARS-CoV-2 in India](#). BMC Research Notes, 14, pp.1-7.

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10. Zimmermann, L., Bhattacharya, S., **Purkayastha, S.**, Kundu, R., Bhaduri, R., Ghosh, P. and Mukherjee, B., (2021). [SARS-CoV-2 infection fatality rates in India: systematic review, meta-analysis and model-based estimation](#). Studies in Microeconomics, 9(2), pp.137-179.
11. Bhaduri, R.⁺, Kundu, R.⁺, **Purkayastha, S.**, Kleinsasser, M., Beesley, L.J., Mukherjee, B. and Datta, J., (2022). [Extending the susceptible-exposed-infected-removed \(SEIR\) model to handle the false negative rate and symptom-based administration of COVID-19 diagnostic tests: SEIR-fansy](#). Statistics in Medicine, 41(13), pp.2317-2337.
12. Salvatore, M.⁺, **Purkayastha, S.**⁺, Ganapathi, L., Bhattacharyya, R., Kundu, R., Zimmermann, L., Ray, D., Hazra, A., Kleinsasser, M., Solomon, S. and Subbaraman, R., (2022). [Lessons from SARS-CoV-2 in India: A data-driven framework for pandemic resilience](#). Science Advances, 8(24), p.eabp8621.
13. **Purkayastha, S.** and Song, P.X.K., (2024). [fastMI: A fast and consistent copula-based nonparametric estimator of mutual information](#). Journal of Multivariate Analysis, 201, p.105270.

Referred Articles – Submitted/Preprint

1. **Purkayastha, S.** and Song, P. X. K., (2025), *A Mechanistic Framework for Collider Detection in Observational Data*. [ARXIV.2502.10317](#)
2. **Purkayastha, S.** and Song, P. X. K., (2025), *Quantification and cross-fitting inference of asymmetric relations under generative exposure mapping models*. [ARXIV.2311.04696](#)
3. Zhang, L., **Purkayastha, S.**, Kirsner, R., Spino, C. and Song, P. X. K., (2025) *Determinants of Enrolment in 284 Clinical Trials for Healing Diabetic Foot Ulcers: A Systematic Review*. [PREPRINT UPON REQUEST](#)
4. Kadura, S., **Purkayastha, S.**, Benditt, J., Anand, A., Collins, B., De Quadros, M., Hobson, M., Biswas, M.J., Ho, L., Spino, C., and Raghu, G., (2025) *Yoga Effect on Quality-of-Life Study Among Patients with Idiopathic Pulmonary Fibrosis (YES-IPF)*. [MEDRXIV 2025.05.20.25327762](#).
5. Lamba, S., Frank, D., McCoy, J.L., Russell, L.E., **Purkayastha, S.**, Gordon, J.H., Leder, S.M., Procario, G.T., Moy, E.M., Hausmann, L.R.M., (2025), *Health-Related Social Needs among LGB+ Veterans: A National Survey of Primary Care Patients*. [PREPRINT UPON REQUEST](#)
6. **Purkayastha, S.**, Kadura, S., Spino, C., and Raghu, G., (2025) *Patient-Reported Outcomes Correlate with Clinical Outcomes in Patients with Idiopathic Pulmonary Fibrosis*. [MEDRXIV 2025.05.27.25328368](#).

Published Abstracts

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1. Lamba, S., Frank, D., McCoy, J.L., Russell, L.E., Purkayastha, S., Gordon, J.H., Leder, S.M., Procario, G.T., Moy, E.M., Hausmann, L.R.M., (2025). *"The Prevalence of Social Needs Among LGB+ Veterans: A National Survey of VHA Primary Care Patients."* 2025 Academy Health Annual Research Meeting, Minneapolis, USA.

Presentations

1. Eastern North American Region (ENAR) of the International Biometric Society Spring Meeting (March 2023). *"An information-theoretic framework for causal discovery in epigenetic data"*. Nashville, USA.
2. Western North American Region (WNAR) of the International Biometric Society Spring Meeting (June 2023). *"Asymmetric predictability in causal discovery: an information theoretic approach"*. Anchorage, USA.
3. Joint Statistical Meetings (August 2023). *"Asymmetric predictability in causal discovery: an information theoretic approach"*. Toronto, CANADA.
4. Eastern North American Region (ENAR) of the International Biometric Society Spring Meeting (March 2025). *"Examining Directional Association between Depression and Anxiety"*. New Orleans, USA.
5. **Upcoming:** International Indian Statistical Association Conference (June 2025). *"Examining Directional Association between Depression and Anxiety"*. Lincoln, USA.
6. **Upcoming:** Joint Statistical Meetings (August 2025). *"Examining Directional Association between Depression and Anxiety"*. Nashville, USA.
7. **Upcoming:** 8th International Conference on Econometrics and Statistics: EcoSta (August 2025). *"Examining Directional Association between Depression and Anxiety"*. Tokyo, JAPAN.
8. **Upcoming:** 19th International Joint Conference on Computational and Financial Econometrics (CFE) and Computational and Methodological Statistics: CMStatistics (December 2025). *"A Mechanistic Framework for Collider Detection in Observational Data"*. London, UK.
9. **Upcoming:** Joint Meetings of 2025 Taipei International Statistical Symposium and 13th ICSA International Conference (December 2025), *"A Mechanistic Framework for Collider Detection in Observational Data"*. Taipei, TAIWAN.

Non-Print Media (Software, electronic)

1. Bhaduri R.⁺, Kundu R.⁺, **Purkayastha S.**, Beesley L., Mukherjee B., Kleinsasser, M. (2021). *SEIRfancy: Extended Susceptible-Exposed-Infected-Recovery Model* [\[link\]](#)
2. **Purkayastha, S.** and Song, P.X.K., 2024. *fastMI: A fast and consistent copula-based nonparametric estimator of mutual information.* [\[link\]](#)

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3. Purkayastha, S. and Song, P.X.K., 2024. *comet: Collider-mediator testing using information theory* [[link](#)]

Technical and Government Reports

1. Purkayastha, S. and Basu, A. (2020) *On minimum Bregman divergence inference*. [ARXIV.2008.06987](#)

Other Publications/Press Coverage

1. Basu, D., Salvatore, M., Kleinsasser, M., **Purkayastha, S.**, Bhattacharya, R., and Mukherjee, B., [We're Focusing on National Data on COVID-19 When We Should Be Looking at State- Level Trends](#). The Wire, 2020.
2. Mukherjee, B., Purkayastha, S., Salvatore, M., & Mishra, S. [Underreporting does hurt the COVID fight](#). The Hindu, 2021.
3. Laguipo, A., [A study of the COVID fatality rates in India during waves 1 and 2](#). News-Medical.Net, 2021.
4. Bastian, H., [Women Versus Men Leaders in the Pandemic: An Update and Dig Into the Latest Data](#). PLOS Blogs, 2022

Service

Service to School and University

Years	Activity	Position
2024-25	Graduate Research and Development Seminar Organizer	Department of Biostatistics and Health Data Science, University of Pittsburgh
Mar 2025	Research Day Poster Competition Judge	Department of Biostatistics and Health Data Science, University of Pittsburgh
Apr 2025	Dean's Day Poster Competition Judge	School of Public Health, University of Pittsburgh

Manuscript and other Documentation/Publication Review

Annals of Applied Statistics, Biometrics, Communications in Statistics (Case Studies and Data Analysis), Journal of the Royal Statistical Society, Series A (Statistics in Society), New England Journal of Statistics in Data Science, PLOS One, Scientific Reports, Statistics in Medicine, Statistical Science.

Governmental Organizations

Date	Organization/Agency	Position and/or Type of Service
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Jan 2025	Specialist Biostatistician Grant Reviewer	Congressionally Directed Medical Research Program (CDMRP) Discovery Award, US Department of Defense
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Non-Governmental and Community-Based Organizations

Date	Organization/Agency	Position and/or Type of Service
Apr 2025	Pittsburgh Regional Science and Engineering Fair Poster Competition Judge	American Statistical Association (Pittsburgh Chapter)

Non-Professional Service

Date	Organization/Agency	Position and/or Type of Service
2025-	Community volunteer	Greater Pittsburgh Community Food Bank