BINOD ACHARYA

CONTACT INFORMATION	Vickie and Jack Farber Research Center Wills Eye Hospital 840 Walnut St, Suite 1538, Philadelphia, PA 19107 USA	Phone: (225)456-6324 Email: bacharya@willseye.org https://binod-acharya.github.io

RESEARCH INTERESTS

Health disparities; Social epidemiology; Spatial statistics; Statistical modeling

EDUCATION

M.S., Biostatistics — 2019
Drexel University — Philadelphia, PA

M.S., Entomology (Minor: Applied Statistics) — 2017
Louisiana State University — Baton Rouge, LA

B.Sc., Agriculture — 2011
Tribhuvan University — Kritipur, Nepal

PROFESSIONAL EXPERIENCE

Data Scientist/Biostatistician, Wills Eye Hospital, Philadelphia — Aug 2023 - Present

I provide statistical and data science expertise to multiple clinical and public health research projects at Vickie and Jack Farber Vision Research Center, broadly aimed at preventing vision impairment. I work in collaboration with clinical investigators to refine research questions, define hypotheses, design studies, develop algorithms, devise and implement statistical analysis plans, generate analysis reports, and prepare manuscripts for scientific publication. Some of my current projects involve estimating the failure rate of corneal cross-linking in keratoconus eyes, incidence of post-cataract surgery uveitis, and understanding the disparity in treatment initiation in patients with wet Age-related Macular Degeneration (AMD) using IRIS registry database. In addition, as a biostatistician to Biostatistics Consulting Core, I provide consultation on study design and offer analysis support to clinical researchers.

Data Analyst, Drexel University — Apr 2019 - July 2023

I provided statistical expertise to multiple research projects led by academics that involve the application of advanced statistical methods, including Bayesian inference, survival analysis, multilevel analysis, and generalized linear models. As a biostatistician to the SALURBAL project at Drexel University, much of my work was focused on understanding urban health disparity in Latin America using methods of small-area estimation. I worked on many social-epidemiological research projects related to eviction, informal settlements, homelessness, and residential segregation. In the wake of the COVID-19 pandemic, I conducted research to understand health and behavioral disruptions brought about by the pandemic such as the utilization of telehealth services, consumer spending on food and alcohol, and the effectiveness of vaccine lottery programs in the uptake of vaccination rate. In 2019, I worked as an analyst for the project Reducing Cancer and improving health outcomes in Philadelphia Neighborhoods, where I developed methods, analysis, and visualizations.

Research Assistant, Drexel University — Oct 2017 - Mar 2019

Worked on programming, cleaning, and management of data from various sources, including surveys, censuses, vital statistics registries, and GIS data. Provided statistical support for manuscripts involving multi-level designs and spatial analysis.

Research Assistant, Louisiana State University   Jan 2015 - May 2017

Designed and conducted a laboratory research to identify the genetic basis of Bt protein resistance in fall armyworm and provided assistance in field research.

Program Associate, World Wildlife Fund Inc, Nepal   Jun 2014 - Dec 2014

Provided technical support to community leaders to protect ecologically fragile hills of Nepal by improved agricultural and livestock management practices.

Technical Officer, National Tea & Coffee Development Board, Nepal   Apr 2012 - Jun 2014

Provided technical and policy support to stakeholders for improved coffee farming practices and commercialization.

PUBLICATIONS

Tomaiuolo, M., Deaner, J., VanderBeek, B.L., **Acharya, B.**, Syed, Z., Zhang, Q., Schuman, J.S., and Hyman, L. (2024). **Are treatment patterns for endophthalmitis after cataract surgery following the EVS trial recommendations? An IRIS® Registry Analysis.** *Ophthalmology Retina*. [Link]

VanderBeek, B.L., Chen, Y., Tomaiuolo, M., Deaner, J., Syed, Z., **Acharya, B.**, Zhang, Q., Schuman, J.S., and Hyman, L. (2024). **Endophthalmitis rates and types of treatments after intraocular procedures: a long-term trend analysis.** *JAMA Ophthalmology*. [Link]

Leventer, I., Singh, H., Pashaee, B., Raimondo, C.D., Khakh, C.K., Martin, J.L., **Acharya, B.**, Zhang, Q., Lally, S.E., and Shields, C.L. (2024). **Topical 5-fluorouracil 1% for moderate to extensive ocular surface squamous neoplasia in 73 consecutive patients: primary versus secondary treatment.** *Asia-Pacific Journal of Ophthalmology*, 100052. [Link]

Heffler, K. F., **Acharya, B.**, Subedi, K., and Bennett, D. S. (2024). **Early-life digital media experiences and development of atypical sensory processing.** *JAMA Pediatrics*. [Link]

Perner, M.S. , Trotta, A., Bilal, U., **Acharya, B.**, Quick, H., Natalia, P., Berazategui, R., Alazraqui, M., and Diez Roux, A.V. (2023). **Social inequalities and COVID-19 mortality between neighborhoods of Bariloche city, Argentina.** *International Journal for Equity in Health*, 22, 198. [Link]

Bhatta, D., Sizer, M.A., and **Acharya, B.** (2023). **Association between telehealth and missed appointments among patients experiencing behavioral health challenges.** *JAMA Network Open*, 6(7):e2324252. [Link]

Trotta, A., Bilal, U., **Acharya, B.**, Quick, H., Moore, K., Perner, S.M., Alazraqui, M., and Diez Roux, A.V. (2023). **Spatial inequities in life expectancy in small areas of Buenos Aires, Argentina 2015-2017.** *Journal of Urban Health*, 100, 577–590. [Link]

Guimarães, J.M.N., **Acharya, B.**, Moore, K., López-Olmedo, N., de Menezes, M.C., Stern, D., Friche, A.A.d.L., Wang, X., Delclòs-Alió, X., Rodriguez, D.A., Sarmiento, O.L., and de Oliveira Cardoso, L. (2022). **City-level travel time and individual dietary consumption in Latin American cities: results from the SALURBAL**

Study. *International Journal of Environmental Research and Public Health*, 19(20), 13443. [Link]

López, S.R., Tumas, N., Bilal, U., Moore, K., **Acharya, B.**, Quick, H., Quistberg, A.D., Acevedo, G.E., and Diez Roux, A.V. (2022). **Intraurban socioeconomic inequalities in life expectancy: a population based cross-sectional analysis in the city of Córdoba, Argentina (2015-2018).** *BMJ Open*, 12(9), e061277. [Link]

Acharya, B., Bhatta, D., and Dhakal, C. (2022). **The risk of eviction and the mental health outcomes among the US adults.** *Preventive Medicine Reports*, 29, 101981. [Link]

Dhakal, C., **Acharya, B.**, and Wang, S. (2022). **Food spending in the United States during the first year of the COVID-19 pandemic.** *Frontiers in Public Health*, 10, 912922. [Link]

Sizer, M.A., Bhatta, D., **Acharya, B.**, and Paudel, K.P. (2022). **Determinants of telehealth service use among mental health patients: a case of rural Louisiana.** *International Journal of Environmental Research and Public Health*, 19(11), 6930. [Link]

Acharya, B. and Dhakal, C. (2022). **Risky health behaviors during the COVID-19 pandemic: evidence from the expenditures on alcohol, non-alcoholic beverages, and tobacco products.** *PLoS ONE*, 17(5), e0268068. [Link].

Subedi, K., **Acharya, B.**, and Ghimire, S. (2022). **Factors associated with hospital readmission among patients experiencing homelessness.** *American Journal of Preventive Medicine*, 63(3), 362-370. [Link]

Acharya, B., Subedi, K., Acharya, P., and Ghimire, S. (2022). **Association between COVID-19 pandemic and the suicide rates in Nepal.** *PloS ONE*, 17(1), e0262958. [Link]

Acharya, B. and Dhakal, C. (2021). **Implementation of state vaccine incentive lottery programs and uptake of COVID-19 vaccinations in the United States.** *JAMA Network Open*, 4(12), e2138238. [Link]

Kaimal, G., Jones, J.P., Dieterich-Hartwell, R., **Acharya, B.**, and Wang, X. (2019). **Evaluation of long- and short-term art therapy interventions in an integrative care setting for military service members with post-traumatic stress and traumatic brain injury.** *The Arts in Psychotherapy*, 62, 28-36. [Link]

Acharya, B., Head, G.P., Price, P.A., and Huang, F. (2017). **Fitness costs and inheritance of Cry2Ab2 resistance in *Spodoptera frugiperda* (JE Smith).** *Journal of Invertebrate Pathology*, 149, 8-14. [Link]

WORK IN PROGRESS

Moore, K., Lazo, M., Ortigoza, A., Quistberg, D. A., Sanchez, B., **Acharya, B.**, Alfaro, T., Kroker-Lobos, M. F., Carvalho De Menezes, M., Sarmiento, O. L., Souza, A. de, Perez Ferrer, C., Cardenas, L. M., Hernandez Vasquez, A., Caiaffa, W., Diez Roux, A. V., and SALURBAL group. **Data Resource Profile: harmonized health survey data for 240 cities across 11 countries in Latin America: the SALURBAL project.** (Under Review)

Valentino, G., Auchincloss, A., **Acharya, B.**, Tumas, N., Carvalho, M., López, N., Kroker-Lobos, M. F., Ortigoza, A., and Nazzal, C. **Characterization of fruit and vegetable consumption by economic, sociodemographic, and biophysical contexts in 144 Latin American cities.** (Under Review)

Reddy, R., Shalaby, W.S., Sagar, S.J., Kumar, K., **Acharya, B.**, Zhang, Q., Schuman, J.S., Myers, J.S., and Huang, P. **Long-term visual field progression in patients with optic disc drusen with or without Glaucoma.** (Under Review)

Acharya, B., Hyman, L., Tomaiuolo, M., Zhang, Q., and Dunn, J.P. **Incidence and risk factors associated with Prolonged Undifferentiated Postoperative Pseudophakic Iridocyclitis (PUPPI): an IRIS® Registry analysis.** (Manuscript in preparation)

Zhou, S., Zhang, M., Boal, N., Carrasco, J., Penne, R., Rabinowitz, M., Gunton, K.B., Sharpe, J., **Acharya, B.**, Zhang, Q., and Stefanyszyn, M. **Outcomes of Thyroid Eye Disease in patients with moderate-to-severe extraocular muscle involvement: a 10-year institutional experience.** (Manuscript in preparation)

Oliveira, T.L., Silva, U.M., **Acharya, B.**, Quick, H., Moore, K., Bilal, U., Pina, M.F., Skaba, D., Matos, V., Andrade, A.C.S., Diez Roux, A.V., Friche, A., and Caiaffa, W.T. **Life expectancy in small areas in six Brazilian state capitals, 2015-2019.** (Manuscript in preparation)

Lee, K.E., Lam, L., Thuma, T., **Acharya, B.**, Zhang, Q., Adhan, I., Minor, J., Hyman, L., and Gunton, K.B. **Clinical characteristics and surgical procedures in Sturge-Weber Syndrome-Associated Glaucoma (SWS-G): an Academy IRIS® Registry analysis.** (Manuscript in preparation)

REPORTS, POSTERS, ABSTRACTS

[Abstract] Valentino, G., Tumas, N., Carvalho, M., Acharya, B., and Nazzal, C. Social contextual factors and prevalence of daily fruit and vegetable intake in 137 Latin American cities. In 2024 World Public Health Nutrition Congress, June 2024.

[Abstract] Kolomeyer, N., Tomaiuolo, M., Zhang, Q., Acharya, B., Myers, J.S., and Hyman, L. Unilateral, bilateral, and sequential blindness in glaucoma patients in the IRIS registry. In 2024 Annual Meeting of American Glaucoma Society, Feb 2024.

[Abstract] Young, S., Acharya, B., George, B., and Hyman, L. Biomarker-based stress measures as risk factors and mediators of diabetic retinopathy racial disparities. In 2024 Annual Meeting of Association for Research in Vision and Ophthalmology, May 2024.

[Abstract] Perner, M.S. , Trotta, A., Bilal, U., Acharya, B., Quick, H., Natalia, P., Berazategui, R., Alazraqui, M., and Diez Roux, A.V. Social inequalities and COVID-19 mortality between neighborhoods of Bariloche city, Argentina. In 19th International Conference on Urban Health, Nov 2023.

[Poster] Bennett, D. S., Subedi, K., Acharya, B., and Heffler, K. F. Sensory profiles at 33 months as a function of early screen media exposure. In 2023 Society for Research in Child Development (SRCD) Meeting, March 2023.

[Poster] Acharya, B., Moore, K., Bilal, U., Quick, H., and Diez Roux, A.V. Small area estimation of life expectancy in cities in Argentina and Brazil: methodological approach. In 2022 UHC Day poster session, Drexel University.

[Poster] Subedi, K., Acharya, B., and Ghimire, S. Factors associated with hospital readmission among patients experiencing homelessness. In 2022 Annual meeting of Association for Clinical and Translational Statisticians.

[Abstract] Trotta, A., Bilal, U., Acharya, B., Quick, H., Moore, K., Perner, S.M., Alazraqui, M., and Diez Roux, A.V. Inequity and life expectancy in Buenos Aires, Argentina 2015-2017: A small area estimation approach. In 17th International Conference on Urban Health, July 2021.

[Academic Report] The State of Cancer in Philadelphia, 2020.

[Web Report] Cancer in Philadelphia Neighborhoods, 2020.

[Community Brief] Livengood, K., Diez Roux, A.V., Mullin, G., Acharya, B., Bettigole, C., Moore, K., Rollins, H., and Washington, R. Community Brief: Cancer in Philadelphia. Drexel University Urban Health Collaborative, Mar 2020.

[Poster] Acharya, B. Spatiotemporal analysis of overall health in the United States between 2010-2018 using Bayesian methods. In 2019 American Public Health Association Annual Meeting and Expo.

[Poster] Acharya, B., Head, G.P., Price, P.A., and Huang, F. (Sep 2016). Lack of fitness costs associated with *Bacillus thuringiensis* Cry2Ab2 resistance in the fall armyworm, *Spodoptera frugiperda* (JE Smith). In 2016 International Congress of Entomology.

RESEARCH GRANT PARTICIPATION	National Institute of Health Clinical Trial Emulation in Ophthalmology: The Endopthlamitis Vitrectomy Study (Application Under Review) Hyman, L. and VanderBeek, B.L. (PIs), Acharya, B. (Co-PI)

AWARDS

2019	Delta Omega student poster award
2017-2019	Dean's scholarship
	Dornsife School of Public Health, Drexel University

SERVICES AND MEMBERSHIP

2023 - present	Academic Editor, *PLoS ONE*
2021 - present	Ad-hoc journal referee for: *American Journal of Epidemiology, JAMA Pediatrics, Journal of Clinical Oncology, Social Science and Medicine, JAMA Network Open, Preventive Medicine, Frontiers in Public Health, Frontiers of Medicine, Economic Modeling, PLoS ONE, Applied Clinical Informatics, Digital Health, International Journal of Health Promotion and Education, Health Psychology and Behavioral Medicine, American Journal of Ophthalmology, BMJ Open Ophthalmology, etc.*
2020 - present	Member, American Public Health Association
2020 - present	Member, Statistics without Border

GRADUATE COURSEWORK

Statistics

❑ Statistical Inference I	❑ Generalized Linear Models
❑ Statistical Inference II	❑ Longitudinal Data Analysis
❑ Statistical Computing I	❑ Machine Learning
❑ Advanced Statistical Computing	❑ Survival Data Analysis
❑ Linear Statistical Models	❑ Regression Analysis
❑ Applied Bayesian Analysis	❑ Categorical Data Analysis
❑ Design and Analysis of Clinical Trials	❑ Statistical Techniques I
❑ GIS for Public Health	❑ Statistical Techniques II

RELEVANT SKILLS	Computer Languages/Software:	R, SAS, ArcGIS, WinBUGS, RMarkdown, Quarto, Python, Stata, SQL, JAGS, LaTeX, Stan, Github
	Human Languages:	English, Nepali, Hindi
	Certification:	Data Scientist with R, Datacamp
		SAS Certified Clinical Trials Programmer
		SAS Certified Base Programmer for SAS 9
REFERENCES	Available upon request	