Anwesha Pan

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Department of Sociology & Anthropology, Utah State University
Logan, UT, United States
Citizenship: Indian

Research interests:

My research focuses on the association between environmental stressors (e.g., poverty, famine) and female reproductive health in South Asia and the United States. I am specifically interested in understanding the effect of early life neighborhood poverty and environmental toxicants on reproductive timing and health disparities through the lens of biological anthropology and demography. I also study the role of malnutrition throughout the life course on fertility and female reproductive health outcomes.

Academic appointments:

Aug 2024 - present	Assistant Professor, Department of Sociology and Anthropology, Utah State University

Education:

2024	Ph.D., Anthropology, University of Washington, Seattle
2019	Master of Arts, Anthropology, University of Washington, Seattle
2011	Masters of Technology, Biotechnology, West Bengal University of Technology, India
2008	Bachelor of Technology, Biotechnology, West Bengal University of Technology, India

Certificates:

2020	Certificate in Demographic Methods, Center for Studies in Demography & Ecology, University of Washington.
2020	Advance training in social statistics, Center for Statistics and the Social Sciences, University of Washington.

Publications:

Pan, A., Cromeens, M.G., Cedars, M.I., Bleil, M.E. Traffic pollution, reproductive health, and depressive symptoms in a healthy, multiethnic sample of reproductive age women in the Ovarian Aging (OVA) Study. *Menopause*, Submitted.

Pan, A., Crowder, K.D., Cedars, M.I., Bleil, M.E. (2024); Association between neighborhood poverty and ovarian reserve: The Ovarian Aging Study. *Menopause*, **31**(5).

Martin, M., Keith, M., Olmedo, S., Edwards, D., Barrientes, A., **Pan, A**., & Valeggia, C. (2022); Cesarean section and breastfeeding outcomes in an Indigenous Qom community with high breastfeeding support. *Evolution, Medicine, and Public Health*, **10**(1): 36-46

Chakrabarti, S., **Pan, A**., & Singh, P. (2021); Maternal and Child Health Benefits of the Mamata Conditional Cash Transfer Program in Odisha, India. *The Journal of Nutrition* **151**(8): 2271-2281

Dasgupta, R., **Pan, A**., (2015); Growth Curve of Phase change in presence of Polycystic Ovary Syndrome. *Springer, Proceeding of Mathematics & Statistics*, **132**: 135-149.

Papers in preparation:

Pan, A., Holman, D.J. Effect of 1975-75 Bangladesh famine on fecundability: an evolutionary perspective and its implication.

Pan, A., Cromeens, M.G., Cedars, M.I., Bleil. M.E. Traffic pollution, reproductive health, and depressive symptoms in a healthy, multiethnic sample of premenopausal women.

Pan, A., Crowder, K.D., Cedars, M.I., Bleil. M.E. Aggregate exposure to water-related toxicants and its impact on the age at menopause.

Pan, A., Crowder, K.D., Cedars, M.I., Bleil. M.E. Traffic density in California: Reproductive aging differences in women.

Pan, A., Cedars, M.I., Bleil. M.E. Effect of early life neighborhood socioeconomic status on reproductive aging biomarkers: a longitudinal study.

Pan, A., Saunders, M., Holman, D.J. Effect of storage time and urine pH on stability of urinary cortisol.

Holman, D.J., **Pan, A**., Nguyen, T. The Mixed-Makeham model for estimating the mortality rates in different countries.

Pan, A., Kiene, C., Ray, I. State and district-level nutritional effects on pubertal onset age in girls in India

Conferences:

Pan, A., Saunders, M., Holman, D.J. *Validation of stability in 30-year-old frozen urine samples*. The 2024 Human Biology Association, Los Angeles, California

Pan, A., Holman, D.J. (2022). *Famine and fecundability: evidence from rural Bangladesh*. American Anthropological Association, Seattle, Washington

Holman, D.J., **Pan, A**., Navarro, Y., O'Connor K.A. (2018). *Pregnancy-related sickness in rural Bangladeshi women*. The 2018 Human Biology Association, Austin, Texas

Pan, A., Holman, D.J., Navarro, Y., Basu, B., Gkalisky, C., O'Connor K.A. (2017). *Effects of reproductive hormones on pregnancy-related sickness in rural Bangladeshi women*. The 2017 Northwest Anthropological Conference, Spokane, Washington

Pan, A., Vasulu, T.S. (2015). *Menorrhagia in young age with PCOS under OCP medication*. Workshop on Growth Curve Model at Indian Statistical Institute, Giridih, India

Pan, A., Vasulu, T.S. (2014). *Mathematical model for menstrual cycle: Implications to PCOS*. Workshop on Growth Curve Model at Indian Statistical Institute, Giridih, India

Pan, A., Biswas,S., Kar,S., Vasulu, T.S. (2013). *Methods of network analysis of the genes associated with PCOS*. Workshop on Statistical Methods for Bioinformatics, IISc, Bangalore, India

Pan, A., Biswas,S., Kar,S., Biswas,B., Vasulu, T.S. (2013). *Genetics of Polycystic Ovary Syndrome: a Bioinformatic analysis of Candidate Genes using String and Cytoscape*. Society for Applied Biotechnology international conference: Biotechnology, Bioinformatics and Bioengineering, Tirupati, India

Pan, A., Biswas,S., Kar,S., Biswas,B., Vasulu, T.S. (2013). *Candidate Genes associated with Polycystic Ovary Syndrome*. National Seminar on Health and Disease: Exploring Genomics and Cultural Globalization in 21st Century, Tirupati, India

Pan, A., Vasulu, T.S. (2013). *Polycystic Ovary Syndrome: Progression and genetic causation*. Workshop on Growth Curve Model, Indian Statistical Institute, Giridih, India

Pan, A., Chatterjee, R., Sen, S., Vasulu T.S. (2013). *SNP analysis of FSHR and LHR genes and their link to Polycystic Ovary Syndrome*. International conference of Genetic and Molecular Diagnosis in Modern Medicine, Vasavi Medical and Research Center, Hyderabad, India

Pan, A., Biswas,S., Kar,S., Vasulu, T.S. (2012). *Network analysis of the candidate genes related to Polycystic Ovary Syndrome*. Annual Conference of Indian Society of Human Genetics, Banaras Hindu University, Varanasi, India

Research experience:

2024	Impact of neighborhood-level family poverty and environmental pollutants exposure on female reproductive aging in Northern California population, University of Washington
2023	Stress, cortisol levels, and early pregnancy loss in rural Bangladeshi women, University of Washington
2022	Famine exposure and probability of fertile conception, University of Washington
2019	Cesarean section and breastfeeding outcomes in an Indigenous Qom community, University of Washington
2016-17	Reproductive hormones in pregnancy related sickness in rural Bangladeshi women, University of Washington
2011-16	Epidemiology of polycystic ovary syndrome (PCOS) in the population of Kolkata, India, Indian Statistical Institute, Kolkata & RG Kar Medical College, Kolkata, India.
2007	DNA isolation and amplification by PCR technique, Rajabazar Science College, Calcutta University, Kolkata, India.
2006	beta thalassemia detection with NESTROFF test, Burdwan Medical College, Burdwan, West Bengal, India

Data and statistical consulting experience:

2018-present Data and statistical consultant, the Center for Social Science Computation and Research, University of Washington

- Consulting service for undergraduate and graduate students, staff, and faculty members across the social science and public health departments in data management and statistical analysis. The data and statistical consultation include:
  - Guidance of a project on study design and analysis plans
  - Data analysis using R, STATA, and SPSS
  - Data wrangling in R
  - Advice on data visualization using ggplot2 and/or other libraries in R
  - Specialized statistical methods and analysis
  - Managing longitudinal data analysis
  - Data sharing and reproducibility using Git and GitHub

Funded research:

2021 Pre-Dissertation Pilot Award, UW Department of Anthropology

Fellowships and awards:

2016 Graduate school top scholar research assistantship, University of Washington.

2010 Graduate Aptitude Test in Engineering, India

Teaching experience:

2023 (Summer) Instructor of record, Men's Health Across the lifespan, Department of Anthropology, University of Washington

2018-present Instructor in quarterly workshops on the use of R Studio, Git and GitHub, Data Wrangling in R, and SPSS at the Center for Social Science Computation and Research, University of Washington

2018 (Autumn) Teaching Assistant, Human Biodiversity (BIO 101), Department of Anthropology, University of Washington

2018 (Winter and Spring) Teaching Assistant, Principle of Biocultural Anthropology (BIO 201), Department of Anthropology, University of Washington

2015-16 Instructor, Department of Biotechnology at Cyber Research & Training Institute (Affiliated with the University of Burdwan)

Field experience:

Interviewed women with PCOS in RG Kar Medical College & Hospital, Kolkata, India to accumulate socio-demographic, reproductive history, and general health data

- Recorded their age, BMI, marital status, waist-hip ratio, primary language of communication, education, and individual income

- Documented those women's lifestyle; e.g., their food habit (72-hour recall method), physical activities, and total hour of sleeping
- Recorded the medical history of those women (menarche age, menstrual cycle details, androgen excess features, and other health issues)
- Documented the ultrasonography report containing the left & right ovary size and the number of ovarian follicles present there
- Gathered their family history of reproductive, metabolic and cardiovascular health issues.
- Recorded pathology lab reports (levels of LH, FSH, fasting glucose, fasting insulin, TSH, prolactin)
- Provide public health education to the women about PCOS and its possible association with obesity & diabetes type-2

Advising and mentoring:

2022-23 Madison Saunders (Anthropology, University of Washington): Undergraduate training on cortisol levels estimation in urine samples and analysis of biomarker data.

2018-present The Center for Social Science Computation and Research, University of Washington: Mentor undergraduate and graduate students from social science and public health departments in data management and statistical methods

2013 Tanushree Patra (currently a postdoctoral fellow at Daegu Gyeongbuk Institute of Science and Technology, South Korea): MTech (Bioinformatics) project on miRNA analysis

2012 Rishita Chatterjee (currently a doctoral scholar at Weizmann Institute of Science, Israel) and Soumadeep Sen: BSc (Biotechnology) project on SNP analysis of FSH receptor and LH receptor and their link to PCOS

2011 Shrayashi Biswas (currently a postdoctoral scholar at Indian Institute of Teechnology, Madras) and Swayamprava Kar: MSc (Biotechnology) project on Bioinformatics tools for analyzing SNPs associated with PCOS

Statistical skills and lab techniques:

- Statistical tools:
  - R studio, STATA, SPSS, Excel, Git and GitHub
- Enzyme-linked immunoassays:
  - Cortisol levels measurement from saliva and urine samples, anti-müllerian hormone estimation from blood samples
- Molecular biotechnology:
  - Plasmid DNA isolation, gel electrophoresis, isolation of genomic DNA from animal tissue, cDNA amplification by PCR
- Bioinformatics:
  - Pajek and Cytoscape (bioinformatics tool-for network analysis of the genes), sequence analysis (Protparam, Pfam), primer DNA designing

Departmental service:

- Graduate student member, faculty search committee, Department of Anthropology. University of Washington (2022)

- Graduate and Professional Student Senate (GPSS), University of Washington (2020-22). GPSS members ensure that the graduate and professional level students have voices at all levels of university decision-making
- Graduate Student Representative, Department of Anthropology, University of Washington (2019-present)

Media:

2023	Sausage of Science Podcast on famine and fecundability in Bangladeshi population.
2014 (Feb) and 2015 (March)	Newspaper (Giridih Jagaran) reports on scientists sharing research findings with community members.

Languages:

English (native/bilingual proficiency), Bengali (native/bilingual proficiency), Hindi (native/bilingual proficiency)