

CURRICULUM VITAE
SUBHRA CHAKRABORTY, Ph. D, MPH, Ms

PERSONAL DATA

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 Bloomberg School of Public Health
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Departmental Affiliations

- International Health (Primary)
 - Division: Global Disease Epidemiology and Control

Joint Primary Appointment

- School of Medicine
 - Division of Infectious Disease

Center & Institute Affiliations

- Center for Global Health
- Center for Human Nutrition
- Center for Immunization Research

EDUCATION AND TRAINING

2013 MPH Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, USA
 (Vaccine science and policy, Epidemiology and biostatistics)

2004 Ph D University of Jadavpur, India
 Work done at the National Institute of Cholera and Enteric Diseases (NICED), India
 and the University of Maryland, Baltimore, USA.
 (Molecular epidemiology of diarrhea in India, a hospital and community-based
 study).

1997 M.Sc. University of Burdwan, WB, India (Botany)

1995 B.S. University of Burdwan, WB, India (Hons in Botany, chemistry and zoology)

POST DOCTORAL TRAINING

2005 - 2008 Postdoctoral Research Associate, Molecular Genetics and Microbiology,
 Stony Brook University, New York
 Project: Assembly of type IV pili in *Francisella tularensis* and role in virulence

Funding: Program Project Grant, NIH

2004 - 2005 Postdoctoral fellow, Infectious Diseases,
Washington University in St. Louis, Saint Louis, Missouri
Project: Expression, purification and characterization of Leucine rich proteins of amoeba.
Funding: National Institute of Health.

OTHER RELEVANT TRAININGS

September 1 – 2, 2015 **NIAID (NIH)** workshop on the **role of the Microbiota in infectious diseases**. 5601 Fisher Lane, North Bethesda, MD, USA.

2013 **Certificate Course: Vaccine science and Policy**, Johns Hopkins Bloomberg School of public Health.

Sep 25 - 27, 2011 **NIDDK-NIH** organized workshop on **Translational Approaches for Pharmacotherapy Development for Acute Diarrhea**, Bethesda, MD, USA.

Nov 2006 **Biosafety level 3, Science and safety training**, Emory University, Atlanta, Georgia, USA.

2003 - 2004 **Project**, Department of Pathology
Saint Louis University, Saint Louis, Missouri, USA
Project: Role of matrix metalloproteinase and anti-invasive proteins in breast cancer metastasis.
Funding: National Institute of Health.

22-26, Mar, 1999 **WHO** training course in “**Antimicrobial Resistance Monitoring**”.

PROFESSIONAL EXPERIENCE

Jan 2023 to present **Associate Professor**, Department of International Health, JHSPH, JHU
Head, Enteric Vaccines and Immunology Laboratory

May 2024 to Apr 2027 **Clayton D. Harro Faculty Development Chair**

Oct 2017 to Jan 2023 **Associate Scientist**, Department of International Health, JHSPH, JHU
Head, Enteric Vaccines and Immunology Laboratory, Department of International Health

June 2011 to Oct 2017 **Assistant Scientist**, Department of International Health, JHSPH, JHU

Jan 2009 to May 2011 **Research Associate**, Department of International Health, JHSPH, JHU

PROFESSIONAL ACTIVITIES

2025 **External assessor** for Professorial rank promotion at the **London School of Hygiene & Tropical Medicine**

2022 Jan – present: Member **WHO Technical Advisory Group** on Vaccines and Antimicrobial Resistance.

2018- Present: **WHO working group** member, The Global Task Force on Cholera Control (GTFCC).

2019-Present: **Bill & Melinda Gates Foundation working group**, Shigella vaccine immunology and assay harmonization.

2018 **WHO working group**, Global Rotavirus and Pediatric Diarrhea Surveillance Network.

2018 **WHO working group**, Global Burden of Enteric Diseases.

2020- Present Council member in the **American Society of Tropical Medicine (ASTMH)** committee on Global Health (ACGH).

SESSION CHAIR IN CONFERENCE:

American Society of Tropical Medicine (ASTMH), 2020.

Vaccines for Shigella and ETEC (VASE) Conference, Mexico, 2018.

Society Memberships:

2005-Present, Member, American Society for Microbiology

2015-Present, Member, American Society of Tropical Medicine & Hygiene

2012- Present, Member Graduate Women in Science

2009-2012, Member, Minority mentoring Program, American Society for Microbiology

EDITORIAL ACTIVITIES AND OTHER INVITED PEER REVIEW ACTIVITIES**REVIEW OF PROPOSALS**

2025 Sep to Dec Special Emphasis Panel for Bacterial Host Interactions (BHI) **NIH study section.**

2024 Dec – 2025 Jan FY26 Military Infectious Diseases Research Program (MIDRP) Endemic Diarrheal Diseases (D- D) Panel for the United States Army Medical Research and Development Command (**USAMRDC**).

2024 June The EDIT (Etiology, diagnostic, Intervention and Treatment of Infectious Diseases) **NIH study section.**

January 2026

2024 Jan-Mar	FY25 Military Infectious Diseases Research Program (MIDRP) Endemic Diarrheal Diseases (D- D) Panel for the United States Army Medical Research and Development Command (USAMRDC).
2023 Dec-Mar	FY24 Military Infectious Diseases Research Program (MIDRP) Endemic Diarrheal Diseases (D- D) Panel for the United States Army Medical Research and Development Command (USAMRDC).
2022 December	Special Emphasis Panel “Partnerships for Development of Vaccines Against Select Enteric Pathogens”. NIH study Section.
2022 May – June	Bacterial pathogenesis topics review panel (ZRG1 IDIA-Y 80) NIH study section.
2021 Dec- 2022 January	HHS- NIH-CDC -Small Business Innovation Research (SBIR) PHS 2022-1 Phase I and Phase II study section.
2021 February	Clinical Research and Field Studies of Infectious Diseases (CRFS) NIH, study section.
2016, 2017, 2020 Jan to March	Program Area: Diarrheal Diseases Prevention Research MIDRP. Department of Defense (DOD).
2019, July to Sep	Program area: Emerging Infectious Diseases (FP-EID) Peer Reviewed Medical Research Program (PRMRP), Department of Defense (DOD).
2018, May to July	Program Area: Antimicrobial Resistance (AMR) panel Peer Reviewed Medical Research Program (PRMRP), DOD
2017, October to December	Program Area: Gastrointestinal Diseases panel Peer Reviewed Medical Research Program (PRMRP), DOD
2016 July to September	Program Area: Discovery-Emerging Infectious Diseases Department of Defense (DOD) CDMRP.
CONSULTANT:	ETEC and Shigella vaccine development; Traveler’s diarrhea vaccines. OutcomesInsights Vaccines against E. coli, Alpha Sights

EDITORIAL BOARD MEMBER

2025- Member Editorial board Frontiers in Immunology

2013 – Present Member Editorial board, Frontiers in Environmental Science in Public Health.
 2016 – 2018 Member Editorial board, Clinical vaccine Immunology.
 2016 – Present Advisory Board Member, Celeritas Foundation

HONORS AND AWARDS

2008 Women's Career Development Award, American Society for Microbiology.
 2000-2001 UNESCO-MIRCEN fellowship.
 1999 -2003 Senior Research Fellowship from Indian Council of Medical Research, Government of India.
 1998-1999 Junior Research Fellowship from Japan International Corporation Agency (JICA).
 1995 National Scholarship from Govt. of India (UGC)

PUBLICATIONS:

Peer Reviewed Journal articles (*corresponding author); student and postdocs underlined

2025

1. Zhang X, Brubaker J Talaat KR, Porter CK, Feijoo BL, Adjoodani BM, DeNearing B, Prouty MG, Bourgeois AL, Sack DA, Eder-Lingelbach S, Taucher C, **Chakraborty S***. Intestinal inflammation induced by heat-labile toxin-producing enterotoxigenic *E. coli* infection and impact on immune responses in an experimental human challenge model. **PLoS Negl Trop Dis.** **2025** Oct 3;19(10):e0013025.
2. Dash S, Ali M, Sultana E, Ram M, Perin J, Naz F, Roy BR, Hasan AA, Afroze F, Tofail F, Ahmed T, Faruque ASG, **Chakraborty S***. Healthcare seeking behavior and antibiotic use for diarrhea among children in rural Bangladesh before seeking care at a healthcare facility. **Sci Rep.** **2025** 15,1, 26359.
3. Sack DA, Bourgeois AL & **Chakraborty S**. Building a broader understanding of enterotoxigenic *Escherichia coli*. **Open Forum Infectious Diseases.** **2025**.12, 7, ofa376.
4. Basu. S and **Chakraborty S.*** A comprehensive review of the diagnostics for pediatric tuberculosis based on assay time, ease of operation and performance. **Microorganisms.** **2025.** 13(1):178.
5. Johura FT, Sultana M, Lewis J, Sadique A, Sack DA, Sack RB, Alam M, **Chakraborty S***. Occurrence of enterotoxigenic *Escherichia coli* in the aquatic environment and impact of climatic factors. **2025 Front. Environ. Sci** 13:10.3389/fenvs.2025.1593899.
6. Alam J, Shaima SN, Das R, Haque MA, Hossain MN, Khan SH, Nuzhat S, Chisti MJ, Ahmed T, **Chakraborty S**, Faruque ASG. Epidemiology and Clinical Profile of Diarrhea Associated with Enterotoxigenic *Escherichia coli* and *Vibrio cholerae* in Bangladesh: Findings from Hospital-Based Surveillance, 2008-2023. **PLoS Negl Trop Dis.** **2025**;19(11):e0013697.

7. Sultana Al-A, Das R, Hossain N, Sobi RA, Naz F, Khan SH, Nasrin S, Nuzhat S, Chisti MJ, Pradip K Bardhan¹, Sarker P, Ahmed T, **Chakraborty S**, Faruque ASG. Clinico-epidemiological characteristics of symptomatic and asymptomatic enterotoxigenic and enteropathogenic *Escherichia coli* diarrhea and their impact on child growth. **Am J Trop Med Hyg.** **2025.** 13:tpmd240347.
8. Palmer AC, Hossain MI, Ali H, Ayesha K, Shaikh S, Islam MT, Johura F-T, Pasualino MM, Rahman H, Haque R, Alland K, Wu LS, Schulze KJ, **Chakraborty S**, West KP, Alam M, Ahmed T, Labrique AB. Protein supplementation delivered alone or in combination with presumptive azithromycin treatment for enteric pathogens did not improve linear growth in Bangladeshi infants: results of a cluster-randomized controlled trial. **Am J Clin Nutr.** **2025.** S0002-9165(24)01490-4.
9. Johura F, Tasnim J, Biswas SJ, Islam R, Hossain T, Rahman H, Shaikh S, Ali H, **Chakraborty S**, Labrique A, Ahmed T, Hossain MI, Alam M, Palmer AC. Multi-drug resistant *Escherichia coli* isolated from stool samples of healthy infants in rural Bangladeshi communities. **Am J Trop Med Hyg.** **2025.** 13:tpmd240541.
10. Kan L, Tuddenham S, Christian P, Massie A, Labrique AB, Wu L, Hasmot A, Rashid MM, Gough E, **Chakraborty S**, France M, Ravel J, West KP, Erchick D. Factors associated with Nugent-bacterial vaginosis in pregnancy and postpartum among women in rural northwestern Bangladesh. **PLOS Glob. Public Health.** **2025.** 5(6):e0004768.
11. Erchick DJ, Tuddenham S, Kan L, Wu LSF, Labrique AB, Ali H, Gough E, Rashid M, Siddiqua TJ, **Chakraborty S**, Gajer P, France M, Ravel J, Yazdy GM, West KP, Christian P. Associations between Nugent-bacterial vaginosis and preterm birth and other adverse pregnancy outcomes in rural northwestern Bangladesh. **Int J Gynaecol Obstet.** **2025 Dec 5.** doi: 10.1002/ijgo.70691. Online ahead of print. PMID: 41347272.

2024

12. Pajuelo MJ, Noazin S, Cabrera L, Toledo A, Velagic M, Arias L, Ochoa M, Moulton L, Saito M, Gilman RH, **Chakraborty S***. Epidemiology of enterotoxigenic *Escherichia coli* and impact on children in the first 2 years of life in Lima, Peru. **Front. Public Health.** **2024;** 12:1332319.
13. **Chakraborty S***, Johura FT, Sultana M, Zhang X, Sadique A, George CM, Monira S, Sack DA, Sack RB, Alam M. Epidemiology of enterotoxigenic *Escherichia coli* among children and adults seeking care at hospitals in two geographically distinct rural areas in Bangladesh. **Microorganisms.** **2024.** 12(2), 359.
14. Sheikh A, Ganguli D, Vickers TJ, Singer B, Foulke-Abel J, Akhtar M, Khatoon N, Setu B, Basu S, Harro C, Maier N, Beatty WL, **Chakraborty S**, Bhuiyan TR, Qadri F, Donowitz M, Fleckenstein JM. Host-derived CEACAM-laden vesicles engage enterotoxigenic *E.*

coli for elimination and toxin neutralization. **Proc Natl Acad Sci USA.** 2024. 121(38):e2410679121.

15. **Chakraborty S***, Dash S, Antara NA, Roy BR, Mamun S, Ali M, Naz F, Johura FT, Lewis J, Afroze F, Hasan AA, Sack DA, Ram M, Tofail F, Ahmed T, Faruque ASG. The Impact of non-dysentery Shigella infection on the growth and health of children over time (INSIGHT) – A prospective case control study protocol. **Microorganisms** 2024, 12(8), 1677.
16. Johura FT, Sultana M, Sadique A, Monira S, Sack DA, Sack RB, Alam M, **Chakraborty S***. Antimicrobial resistance of enterotoxigenic *Escherichia coli* from diarrheal patients and environment over the years in two geographically distinct rural areas in Bangladesh. **Microorganisms.** 2024, 12, 301.
17. Nadimpalli ML, Salvatierra LR, **Chakraborty S**, Swarthout JM, Cabrera LZ, Pickering AJ, Calderon M, Saito M, GilmanRH, and Pajuelo MJ. Effects of breastfeeding on children's gut colonization with multidrug-resistant Enterobacterales in peri-urban Lima, Peru. **Gut Microbes.** 2024; 16(1):2309681.
18. Chowdhury G, Ghosh D, Zhou Y, Deb AK, Mukhopadhyay AK, Dutta S, **Chakraborty S.*** Field evaluation of a simple and rapid diagnostic test, RLDT to detect Shigella and enterotoxigenic *E. coli* in Indian children. **Sci Rep.** 2024; 14(1):8816.
19. Gutiérrez RL, Harro C, Talaat KR, Porter CK, Riddle MS, DeNearing B, Brubaker J, Maciel Jr. M, Laird RM, Poole S, **Chakraborty S**, Maier N, Sack DA, Savarino SJ. Efficacy Evaluation of an Intradermally Delivered Enterotoxigenic *Escherichia coli* CFA/I Fimbrial Tip Adhesin Vaccine Co-administered with Heat-Labile Enterotoxin with LT(R192G) against Experimental Challenge with ETEC H10407 in Healthy Adult Volunteers. **Microorganisms.** 2024;12(2), 288.
20. Amin R, Sultana A, Khan S, Haque A, Nuzhat S, Hossain, N, Bardhan P, Chisti, M, **Chakraborty S**, Ahmed, T, Das, R, Faruque, A. Impact of rotaviral diarrhea on child growth in Sub-Saharan Africa and South Asia in the Global Enteric Multicenter Study. **Am J Trop Med Hyg.** 2024. 20:tpmd230406.
21. Talaat KR, Porter CK, **Chakraborty S**, Feijoo B, Brubaker J, Adjoodani B, Prouty M, Steven Poole S, Bourgeois AL, Billingsley M, Sack DA, Eder-Lingelbach S, Taucher C. Validation of a human challenge model using an LT-expressing enterotoxigenic *E. coli* strain (LSN03-016011) and characterization of potential amelioration of disease by an investigational oral LT-ETEC vaccine candidate (VLA1701. **Microorganisms.** 2024. 12(4):727.

2023

22. **Chakraborty S,*** Connor S, Velagic M. Development of a simple, rapid, and sensitive molecular diagnostic assay for cholera applicable to low resource settings. **PLoS Negl Trop Dis.** **2023** 17(2):e0011113.
23. Héma A, Sermé SS, Sawadogo J, Diarra A, Barry A, Ouédraogo AZ, Nébié I, Tiono AB, Houard S, **Chakraborty S**, Ouédraogo A, Sirima SB. Contribution of the Rapid LAMP based Diagnostic Test (RLDT) to the evaluation of enterotoxigenic *Escherichia coli* (ETEC) and *Shigella* in childhood diarrhea in the peri-urban area of Ouagadougou, Burkina Faso. **Microorganisms.** **2023**, 11, 2809.
24. **Chakraborty. S**, RLDT consortium. RLDT – A rapid and simple molecular diagnostic tool to aid surveillance and vaccine evaluation of enterotoxigenic *E. coli* and *Shigella*. **BMJ.** **2023**, 8, Supp 10.
25. Banerjee S, Barry EM, Baqar S, Louis Bourgeois A, Campo JJ, Choy RKM, **Chakraborty S**, Clifford A, Deal C, Estrada M, Fleckenstein J, Hasso-Agopsowicz M, Hausdorff W, Khalil I, Maier N, Mubanga C, Platts-Mills JA, Porter C, Qadri F, Simuyandi M, Walker R, White JA. The 2022 Vaccines Against *Shigella* and Enterotoxigenic *Escherichia coli* (VASE) Conference: Summary of abstract-based presentations. **Vaccine.** **2023**, 28:S0264-410X(23)01364-6.

2022

26. Nuzhat S, Das R, Das S, Islam SB, Palit P, Haque MA, **Chakraborty S**, Khan SH, Ahmed D, Alam B, Ahmed T, Chisti MJ, Faruque ASG. Antimicrobial resistance in shigellosis: A surveillance study among urban and rural children over 20 years in Bangladesh. **PLoS One.** **2022** Nov 21;17(11):e0277574.
27. **Chakraborty S,*** Connor S, Velagic M. Development of a simple, rapid, and sensitive diagnostic assay for enterotoxigenic *E. coli* and *Shigella* spp applicable to endemic countries. **PLoS Negl Trop Dis.** **2022** 16(1):e0010180.
28. Connor S, Voeglein B, Alam M, Mukhopadhaya A, Dutta S, Wierzba. T, Bougeois. AL, Sack. D, **Chakraborty. S***. Evaluation of a novel, simple, sensitive, and rapid fieldable detection assay for ETEC and *Shigella spp* from stool samples. **PLoS Negl Trop Dis.** **2022** 16(2):e0010192.
29. Hoque KM*, Hayashi M, Sheik IA, Verma SC, Leblanc N, Zeiss CJ, Ameen N, and **Chakraborty S***. Elevated 5-hydroxytryptamine in COVID-19 stimulates ANO1 mediated Cl secretion in lung and intestinal epithelial cells **FASEB J**, **2022** 36(Suppl 1): 10.
30. Suwilanji S, Chilyabanyama ON, Liswaniso F, Chisenga CC, Chilengi R, Gordon D, Kwenda G, **Chakraborty S***, Simuyandi M*. Field evaluation of a novel, rapid diagnostic

assay and molecular epidemiology of enterotoxigenic *E. coli* among Zambian children presenting with diarrhea. **PLoS Negl Trop Dis.** **2022** 5;16(8):e0010207.

2021

31. Porter CK, Talaat KR, Isidean SD, Kardinaal A, **Chakraborty S**, Gutiérrez RL, Sack DA, Bourgeois AL. The Controlled Human Infection Model for Enterotoxigenic *Escherichia coli*. **Curr Top Microbiol Immunol.** **2021** Oct 21. PMID: 34669040.
32. Brubaker J, Zhang X, Bourgeois AL, Harro C, Sack DA, **Chakraborty S***. Intestinal and systemic inflammation induced by symptomatic and asymptomatic enterotoxigenic *E. coli* infection and impact on intestinal colonization and ETEC specific immune responses in an experimental human challenge model. **Gut Microbes.** **2021**,13:1-13.
33. Thorsing. M, Krogh TJ, Vitved L, Nawrocki A, Jakobsen RB, Larsen MR, **Chakraborty S**, Bourgeois L, Andersen AZ, Boysen A. Linking inherent O-linked protein glycosylation of YghJ to increased antigen potential. *Frontiers in Cellular and Infection Microbiology.* **Front. Cell. Infect. Microbiol,** **2021** 11:705468.
34. Talaat KR, Alaimo C, Martin P, Bourgeois. AL, Dreyer A, Kaminski RW, Porter CK, **Chakraborty S**, Clarkson KA, Brubaker J, Elwood D, Rahel Frölich R, DeNearing B, Weerts H, Feijoo B, Halpern J, Sack D, Riddle MS, and Fonck GF. Human challenge study with a *Shigella* bioconjugate vaccine: Analyses of clinical efficacy and correlate of protection. **EBioMedicine,** **2021,** 66:103310.
35. Clarkson KA, Talaat KR, Alaimo C, Martin P, Bourgeois. AL, Dreyer A, Porter CK, **Chakraborty S**, Brubaker J, Elwood D, Rahel Frölich R, DeNearing B, Weerts H, Feijoo B, Halpern J, Sack D, Riddle MS, and Fonck GF. Immune Response Characterization in a Human Challenge Study with a *Shigella flexneri* 2a Bioconjugate Vaccine. **EBioMedicine,** **2021,** 66:103308.

2020

36. Talaat. KR, Porter. CK, Kayla MJ, Bourgeois. AL, Milton M, Gutierrez. RL, Adjoonani B, Brittany Feijoo, **Chakraborty S**, Brubaker J, Duplessis CA, Trop SA, Riddle MS, Joseph SS, Michael G. Prouty MG. Refinement of the CS6 enterotoxigenic *Escherichia coli* strain B7A human challenge model: a randomized trial. **PLoS One.** **2020** 2;15(12):e0239888.
37. Talaat. KR, Porter. CK, Bourgeois. AL, Lee. TK, Duplessis. CA, Maciel Jr. M, Gutierrez. RL, DeNearing. B, Adjoonani. B, Adkinson. R, Testa. KJ, Feijoo. B, Alcalá. AN, Brubaker. J, Beselman. A, **Chakraborty. S**, Sack. D, Halpern. J, Trop. S, Wu. H, Jiao. J, Sullivan. E, Riddle, MS, Joseph. SS, Poole. ST, Prouty. MG. Oral delivery of Hyperimmune Bovine Serum Antibodies Against CS6-Expressing Enterotoxigenic *Escherichia coli* as a Prophylactic Against Diarrhea. **Gut Microbes.** **2020**;12(1):1732852.

38. Ramamurthy T, Das B, **Chakraborty S**, Mukhopadhyay AK, Sack DA. Diagnostic techniques for rapid detection of *Vibrio cholerae* O1/O139. **Vaccine**. **2020**; 38 Suppl 1:A73-A82.

2019

39. Simuyandi M, Roma Chilengi R, Connor SB, Voeglein JB, Laban NM, Kazimbaya KM, Chisenga CC, Mwaba J, Sack DA, **Chakraborty S**. Enterotoxigenic *Escherichia coli* Toxins and colonization factors among Zambian children presenting with moderate to severe diarrhea to selected Health Facilities. **Archives Microbiol Immunology**. **2019**; **3:173-184**
40. **Chakraborty S**, Randall A, Vickers TJ, Molina D, Harro CD, DeNearing B, Brubaker J, Sack DA, Bourgeois AL, Felgner PL, Liang X, Mani S, Wenzel H, Townsend RR, Gilmore PE, Darsley MJ, Rasko DA, Fleckenstein JM. Interrogation of a live-attenuated enterotoxigenic *Escherichia coli* vaccine highlights feature unique to wild-type infection. **Nature Publication Journal (NPJ) Vaccine**. **2019** Aug 28; 4:37.
41. **Chakraborty S***, Brubaker J, Louis Bourgeois AL, Sack D. Development of a novel multiplex electrochemiluminescent-based immunoassay to aid enterotoxigenic *Escherichia coli* vaccine development and evaluations. **J Immunol Methods**, **2019**; 470:6-14.
42. Mottram. L, **Chakraborty. S**, Cox E, Fleckenstein J. How genomics can be used to understand host susceptibility to enteric infection, aiding in the development of vaccines and immunotherapeutic interventions. **Vaccine**, **2019**. pii: S0264-410X(19)30069-6.
43. Bourgeois. AL, Harro C, Sack D, Walker R, Denearing B, **Chakraborty S**, Brubaker. J, Buchwaldt C, Darsley MJ. Live attenuated enterotoxigenic *Escherichia coli* (ETEC) vaccine with dmLT adjuvant protects human volunteers against virulent experimental ETEC challenge. **Vaccine**, **2019**; 37(14):1978-1986.
44. Sarkar P, Saha T, Ali SKI, **Chakraborty S**, Aoun J, Chakraborty MK, Rajendran VM, Dutta S, Kazi MH. Zinc Ameliorates Intestinal Barrier Dysfunctions by Reinstating Claudin-2 and -4 on the Membranes. **Am J Physiol Gastrointest Liver Physiol**. **2019**; 316(2):G229-G246.

2018

45. **Chakraborty S**, Randall A, Vickers TJ, Molina D, Harro CD, DeNearing B, Brubaker J, Sistrunk JR, Hazen TH, Sack DA, Bourgeois AL, Felgner PL, Liang X, Wenzel H, R. ownsend R, Gilmore PE, Mani S, Rasko DA, Fleckenstein JM. Human experimental challenge with enterotoxigenic *E. coli* elicits immune responses to canonical and novel antigens relevant to vaccine development. **J Infect Dis**, **2018**, 2018(9):1436-1446 PMID: 29800314.

46. **Chakraborty S***, Harro C, DeNearing B, Brubaker. J, Bauers N, Dally. L, Flores. J, Bourgeois AL, Walker R, Sack DA. Impact of lower challenge doses of enterotoxigenic *Escherichia coli* on clinical outcome and immune responses in humans. **PLoS Negl Trop Dis.** **2018** Apr 27;12(4):e0006442.
47. Crofts AA, Giovanetti SM, Rubin EJ, Poly FM, Gutiérrez RL, Talaat KR, Porter CK, Riddle MS, DeNearing B, Brubaker J, Maciel M Jr, Alcala AN, **Chakraborty S**, Prouty MG, Savarino SJ, Davies BW, Trent MS. Enterotoxigenic *E. coli* virulence gene regulation in human infections. **Proc Natl Acad Sci U S A.** **2018** 115(38):E8968-E8976.
48. Kumar P, Kuhlman FM, **Chakraborty. S**, Bourgeois. AL, Foulke-Abel. J, Tumala. B, Vickers. T, Sack. D, DeNearing. B, Harro. CD, Wright. WS, Gildersleeve JC, Ciorba M, Santhanam S, Porter CK, Gutierrez RL, Prouty MG, Riddle MS, Alexander Polino A, Sheikh A, Mark Donowitz M, Fleckenstein JM. Enterotoxigenic *Escherichia coli*-host interactions and diarrheal severity are blood group A dependent. **J Clin Invest.** **2018** 128(8):3298-3311.
49. Kazi M, Paramita S, Sheikh I, Chakraborty S. Zinc recovers altered intestinal ion-transport and barrier function caused by *Shigella* infection in T84 cells. **FASEB J.** **2018** (902.9) Vol 28, Issue S1.
50. Ndungo E, Randall A, Hazen TH, Kania DA, Trappl-Kimmons K, Liang X, Eileen M. Barry EM, Kotloff KL, **Chakraborty S**, Mani S, Rasko DA, Pasetti MF. Development of *Shigella* proteome microarrays and analysis of human antibody responses following oral vaccination and experimental challenge. **mSphere.** **2018** Aug 1;3(4).

2017

51. Rimmer JE, Harro C, Sack DA, Talaat KR, Gutierrez RL, DeNearing B, Brubaker J, Laird RM, Poly F, Maue AC, Jaep K, Alcala A, Mochalova Y, Garipey CL, **Chakraborty S**, Guerry P, Tribble DR, Porter CK, Riddle MS. Rifaximin fails to prevent campylobacteriosis in the human challenge model: a randomized, double-blind, placebo-controlled trial. **Clin. Infect. Dis.** **2017** 66(9):1435-1441. PMID: 29145631.
52. **Chakraborty S**, Harro C, Brubaker J, DeNearing B, Bauers N, Dally L, Fix A, Mani S, Bourgeois L, Sack D, Walker R. Immunogenicity and protective efficacy of a live attenuated ETEC vaccine candidate against virulent enterotoxigenic *Escherichia coli* (ETEC) in a human ETEC challenge model. **Am J Trop Med Hyg.** **2017** 97(5) 234-35.
53. Johura FT, Parveen R, Islam A, Sadique A, Rahim MN, Monira S, Khan AR, Ahsan S, Ohnishi M, Watanabe H, **Chakraborty S**, George CM, Cravioto A, Navarro A, Hasan B, Alam M. Occurrence of Hybrid *Escherichia coli* Strains Carrying Shiga Toxin and Heat-stable Toxin in Livestock of Bangladesh. **Front. Public Health.** **2017**, 4:287

2016

54. Pop M, Paulson JN, **Chakraborty S** (Co first author), Astrovskaya I, Lindsay BR, Li S, Bravo HC, Harro C, Parkhill J, Walker AW, Walker RI, Sack DA, Stine OC. Individual-specific changes in the human gut microbiota after challenge with enterotoxigenic *Escherichia coli* and subsequent ciprofloxacin treatment. **BMC Genomics**. 2016, 17(1):440.
55. **Chakraborty S***, Harro C, DeNearing B, Bauers N, Dally L, Flores J, Van de Verg L, Sack DA, Walker R. Evaluation of the Safety, Tolerability and Immunogenicity of an Oral, Inactivated Whole Cell *Shigella flexneri* 2a Vaccine in Healthy Adult Subjects. **Clin Vaccine Immunol**. 2016, 23(4):315-25.
56. Porter CK, Riddle MS, Alcalá AN, Tribble DR, Sack D, Harro C, **Chakraborty S**, Gutierrez RL, Savarino SJ, Darsley M, McKenzie R, DeNearing B, Guttormsen AB, Steinsland H, Bourgeois AL. An evidenced-based scale of Disease Severity following human challenge with Enterotoxigenic *Escherichia coli*. **Plos One**. 2016, 11(3):e0149358.
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Submitted, under review.

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2. Dash S, Sultana E, Flynn K, Naz F, Ali M, Rahman RM, Rohman MM, Das S, Ahmed T, Faruque ASG, **Chakraborty S***. Evaluation and feasibility of RLDT in detecting *Shigella* in a primary healthcare facility of rural Bangladesh. Submitted. **PLOS Global Health.** **2025.**

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5. Bernshtein B, Zhiteneva JA, Janardhanan J, Wagh C, Kelly M, Verma S, Jung W, Basher SR, Amin MA, Mahamud S, Rajib NH, Chowdhury F, Khan AI, Charles RC, Xu P, Kováč P, **Chakraborty S**, Kaminski RW, Alter G, Bhuiyan TR, Qadri F, Ryan ET. Limited O-specific polysaccharide (OSP)-specific functional antibody responses in young children with *Shigella* infection in Bangladesh. Submitted **Science Transl Med. 2025.**
6. Roy BR, Ali M, Elahi M, Sanin KI, Dash S, Sultana E, Mamun SA, Naz F, Ram M, Sack D, Ahmed T, Faruque ASG, Tofail F, **Chakraborty S**. Watery Diarrhea in Early Childhood and Neuro-Cognitive Development: Longitudinal Findings from Bangladesh. Submitted **PLOS Global Health. 2026.**
7. Lewis J, Brubaker J Talaat KR, Bourgeois AL, Porter CK, Feijoo BL, Adjoodani BM, DeNearing B, Prouty MG, Sack DA, Eder-Lingelbach S, Taucher C, **Chakraborty S***. Systemic and mucosal immune responses in oral cholera VLA 1701 vaccinated protected and unprotected individuals following heat-labile toxin-producing ETEC LSN03-016011 challenge. Submitted **Front Immunol. 2026.**
8. Naz F, Dash S, Sultana E, Ali M, Das S, Rahman R, Lewis J, Tahmeed Ahmed T, Faruque ASG, **Chakraborty S***. Validation of a simple and rapid diagnostic assay RLDT for the detection of *Shigella* using rectal swabs. Submitted **Am J Trop Med Hyg. 2026.**

Deposited in a pre-print server

1. Zhang X, Brubaker J Talaat KR, Porter CK, Feijoo BL, Adjoodani BM, DeNearing B, Prouty MG, Bourgeois AL, Sack DA, Eder-Lingelbach S, Taucher C, **Chakraborty S***. Intestinal inflammation induced by heat-labile toxin-producing enterotoxigenic *E. coli* infection and impact on immune responses in an experimental human challenge model. **medRxiv** [Preprint] **2025**. doi: <https://doi.org/10.1101/2025.04.03.25325163>.
2. Dash S, Sultana E, Flynn K, Naz F, Ali M, Rahman MR, Rohman MM, Das S, Ahmed T, Faruque A, **Chakraborty S***. Evaluation of the performance and feasibility of RLDT in detecting *Shigella* in a primary healthcare facility of rural Bangladesh. **medRxiv** [Preprint]. **2025** Dec 11:2025.12.08.25341873. DOI: [10.64898/2025.12.08.25341873](https://doi.org/10.64898/2025.12.08.25341873). PMID: 41415506. PMCID: PMC12709491.

3. Lewis J, Zhou Y, Perin J, Dash S, Ali M, Ram M, Naz F, Sultana E, Roy BR, Hasan AA, Afroze F, Sack DA, Tofail F, Ahmed T, Faruque ASG, Chakraborty S*. Factors influencing post-diarrhea growth patterns among children under two years old in rural Bangladesh. *medRxiv* [Preprint]. **2025** May 31:2025.05.30.25328635. doi: 10.1101/2025.05.30.25328635. PMID: 40661265, PMCID: PMC12258748.
4. Vipond C, Stickings P, Rigsby P, Carson D, Rijpkema S, Clarkson KA, Mancini F, Rossi O, Mancini F, Cohen D, Bialik A, **Chakraborty S**, Shriver M, Kaminski RW, and MacLennan CA. Multi-laboratory study to compare and evaluate the performance of a harmonised ELISA protocol to detect serum IgG to *Shigella flexneri* 2a LPS. **2025**. Preprints on **Verivex**.
5. Alam J, Shaima SN, Das R, Haque MA, Hossain MN, Khan SH, Nuzhat S, Chisti MJ, Ahmed T, **Chakraborty S**, Faruque ASG. Epidemiology and Clinical profile of diarrhea associated with enterotoxigenic *Escherichia coli* and *Vibrio cholerae* in Bangladesh: findings from hospital-based surveillance, 2008-2023 Jan **2025**. Preprint with **The Lancet**. doi: [10.2139/ssrn.5122476](https://doi.org/10.2139/ssrn.5122476).
6. Bernshtein B, Zhiteneva JA, Janardhanan J, Wagh C, Kelly M, Verma S, Jung W, Basher SR, Amin MA, Mahamud S, Rajib NH, Chowdhury F, Khan AI, Charles RC, Xu P, Kováč P, **Chakraborty S**, Kaminski RW, Alter G, Bhuiyan TR, Qadri F, Ryan ET. Limited O-specific polysaccharide (OSP)-specific functional antibody responses in young children with *Shigella* infection in Bangladesh. *bioRxiv* [Preprint]. **2024** Sep 8:2024.09.04.611236. doi: 10.1101/2024.09.04.611236.
7. Dash S, Ali M, Sultana E, Ram M, Perin J, Naz F, Roy BR, Hasan AA, Afroze F, Tofail F, Ahmed T, Faruque ASG, **Chakraborty S***. Healthcare seeking behavior and antibiotic use for diarrhea among children in rural Bangladesh before seeking care at a healthcare facility. *Res Sq* [Preprint]. **2025** Apr 17:rs.3.rs-5687932. doi: [10.21203/rs.3.rs-5687932/v1](https://doi.org/10.21203/rs.3.rs-5687932/v1).
8. Kan L, Tuddenham S, Christian P, Massie A, Labrique AB, Wu L, Hasmot A, Rashid MM, Gough E, **Chakraborty. S**, France M, Ravel J, West KP, Erchick D. Factors associated with Nugent-bacterial vaginosis in pregnancy and postpartum among women in rural northwestern Bangladesh. *medRxiv* [Preprint] **2024**.
9. Basu. S and **Chakraborty S.*** A comprehensive review of the diagnostics for pediatric tuberculosis based on assay time, ease of operation and performance. Submitted **Microorganisms**. **2024**. [Preprint] Doi: 10.20944/preprints202412.2639.v1.
10. Sheikh A, Ganguli D, Vickers TJ, Singer B, Foulke-Abel J, Akhtar M, Khatoon N, Setu B, Basu S, Harro C, Maier N, Beatty WL, **Chakraborty S**, Bhuiyan TR, Qadri F, Donowitz M, Fleckenstein JM. Host-derived CEACAM-laden vesicles engage enterotoxigenic *E. coli* for elimination and toxin neutralization. *bioRxiv* [Preprint]. **2024** Jul 24:2024.07.24.604983. doi: 10.1101/2024.07.24.604983.

11. Das R, Alam J, Shaima SN, Haque MA, Hossain MN, Khan SH, Nuzhat S, Chisti MJ, Ahmed T, **Chakraborty S**, Faruque ASG. Epidemiology and Clinical profile of diarrhea associated with enterotoxigenic *Escherichia coli* and *Vibrio cholerae* in Bangladesh: findings from hospital-based surveillance, 2008-2023 Jan **2025**.
doi: [10.2139/ssrn.5122476](https://doi.org/10.2139/ssrn.5122476)

PRACTICE ACTIVITIES

Practice-Related Reports

1. Beyond acute watery diarrhoea: new cholera surveillance guidance. February 26, **2025**. **Lancet Infectious Diseases**. WHO GTFCC (Chakraborty is a co-author as a member of the Global Task Force on Cholera Control (GTFCC) epidemiology and laboratory working group.
[Global Task Force on Cholera Control Epidemiology and Laboratory Working Groups](#)[†]
2. Estimating the impact of vaccines in reducing antimicrobial resistance (AMR) and antibiotic use. Technical Document. October, **2024**. ISBN: 978-92-4-009878-7. <https://www.who.int/publications/i/item/9789240098787>. WHO (Chakraborty is a co-author as a member of the **Technical Advisory Group**).

CHAPTERS:

Porter CK, Talaat KR, Isidean SD, Kardinaal A, **Chakraborty S**, Gutiérrez RL, Sack DA, Bourgeois AL. The Controlled Human Infection Model for Enterotoxigenic *Escherichia coli*. **2021** Section ID:82. **Springer Link**.

Thanassi DG, Chapman MR, **Chakraborty S**. Assembly and Secretion of Surface Fibers in Gram-Negative Bacteria. In K. Wooldridge (ed.), *Bacterial Secreted Proteins*, **2008**. (Book Chapter) **Horizon Bioscience, Norwich, UK**.

PART II

TEACHING

ADVISEES

Ph. D
2024- Ms. Kiely Flynn, GDEC

DrPH
2024- Ms. Therese Nicole Mbarga Essim Epse Fouda,

Global Health: Policy and Evaluation Concentration

Member, Ph. D committee:

2024- Ms. Madeleine Blunt
 2017- Ms. Yagahira Castro Sesquen
 2016- Ms. Saba Rauhani

Schoolwide Ph. D oral exam:

2025 Ms. Caitlin Bond
 2016 Ms. Saba Rauhani

MSPH

2025- Mr. Haoxuan Chen
2024- Ms. Harsimrat Kaur
 2023-2025 Ms. Macy Young
 2022-2024 Mr. Stephen Chen
 2021-2023 Ms. Anju Ogyu
 2019-2021 Ms. Xueyan Zhang
 2017-2020 Ms. Hissu Kim
 2015-2017 Ms. Alvira Hasan
 2014-2016 Ms. Ruthly Francois
 2012-2013 Ms. Maggie Skiles

MPH

2017-2020 Ms. Jane Alam
 2013-2016 Ms. Rashmi Shrestha

MPH Capstone Advisor

2024-2025 Ms. Haely Krem

MSPH Practicum Advisor:

2025-2026 Ms. Harsimrat Kaur
2024-2025 Ms. Brenna Berns
 2023-2024 Ms. Laura Sofia Valderrama Figueroa
 2022-2023 Ms. Anju Ogyu,
 2022-2023 Ms. YiYi Zhou
 2020-2021 Ms. Lauren Norris (Dept of Epidemiology)
 2020-2021 Ms. Xueyan Zhang
 2019-2020 Ms. Hissu Kim
 2017-2018 Ms. Alvira Hasan
 2015-2016 Ms. Ruthly Francois

Work study students:

2025 Mr. Haoxuan Chen
 2025 Ms. Yingzhou Pan (Dept of BMB)
 2023-2025 Ms. Brenna Berns (Dept of BMB)

2022 Ms. Yiyi Zhou
 2022 Mr. Kaixuan Wang (Dept of BMB)
 2020-2021 Ms. Xueyan Zhang
 2016 Ms. Alvira Hasan
 2015 -2016 Ms. Laura Budurlean (Dept of MMI)
 2014-2015 Ms. Ruthly Francois, Ms. Jessica Schue

Postdoctoral Fellow:

Chitradevi Tamilselvi, Ph. D (Senior Post Doctoral fellow)
 Soumya Basu. Ph. D (Post Doctoral fellow)

CURRENT RESEARCH MENTORSHIP

Zachary Mazanek, Ph. D SOM JHU (Senior Research Specialist)
 Fan He, Ph. D (Research Specialist)
 Jade Lewis, MSPH JHSPH (Research Associate)
 Camille Williams, Ms (Senior Research Associate)
 Fatema Tuz-Johura, Ms (Research Associate)
 Ritoja Ray, Ms SOM JHU (Research Assistant)
 Brenna Berns, ScM JHSPH candidate (Student Research Assistant)
 Chitradevi Tamilselvi, Ph. D (Senior Post Doctoral fellow)
 Soumya Basu. Ph. D (Post Doctoral fellow)

Mentoring outside of JHSPH:

2022-2024 Advisor, Asia Pacific Public Health Network (APPHN), JHSPH

2021-present Sampa Dash, MBBS, icddr,b, Bangladesh

2021-present Eva Sultana, MBBS, icddr,b, Bangladesh

Mentoring Program at the US Japan Cooperative Medical Science Program

2023- present Ana Patricia V. Luis, RMT, Research Institute for Tropical Medicine, Philippines.

CLASSROOM INSTRUCTIONS AT JOHNS HOPKINS UNIVERSITY

Received the **International Health Excellence in Teaching Award in 2024, 2025 in**
 223.688.11 Clinical, Epidemiologic, and Climate Change Factors of Enteric Infections in the
 Tropics

1. 223.610.01 **Antimicrobial Resistance: Biology, Cause, Global Impact, and Strategies to Control** (2 credits). **Core course. Course Instructor (Primary).**

2. 223.689.01 **Biologic Basis of Vaccine Development** (3 credits). Course Co-Instructor.
3. 223.688.11 **Clinical, Epidemiologic, and Climate Change Factors of Enteric Infections in the Tropics** (4 credits). Course Co-Instructor.
4. 223.688.49 **Clinical, Epidemiologic, and Climate Change Factors of Enteric Infections in the Tropics** (4 credits). Course Co-Instructor.
5. 180.602.01 **Environment and health in the low and middle income countries.** Core course. Course Co-Instructor. (Course enrollment 35-40 students). **2014-2022.**
6. 223.688.11 **Intestinal infections in the tropics.** Course Instructor, 2024 (Course enrollment 10-12 students). Bloomberg School of Public Health. Lecturing the course from **2015 - 2023.**
7. 340.627.01 **Epidemiology of Infectious Diseases.** Lecture: Diarrhea, Johns Hopkins (Course enrollment 60 students). Bloomberg School of Public Health, **2018-2021.**
8. 223.686.11 **Child and public health in the tropics.** Lecture: Epidemiology of diarrheal diseases. Johns Hopkins (Course enrollment 10-12 students). Bloomberg School of Public Health, 2014 onwards.
9. 222.630.81 **Nutrition, Infection, and Immunity.** Lecture: Basic microbiology (Course enrollment 10-12 students). Bloomberg School of Public Health, **2020 to 2022.**
10. 223.689.01 **Biologic basis of vaccine development.** Lecture: Biologic basis of enteric vaccines and developing a challenge model. (Course enrollment 35-40 students). Johns Hopkins Bloomberg School of Public Health, Fourth term, 2014-2015.

OTHER SIGNIFICANT TEACHING

1. HBM 640 **Molecular Mechanisms of Pathogenesis**, Course on Gram negative and Gram positive bacteria and their pathogenesis. (Course enrollment 10-15 students). Under Ph. D program. **Stony Brook University.** 2008.
2. **Medical Microbiology**, Course on basic microbiology, microbial pathogens and their pathogenesis. Laboratory classes on identification of different bacterial pathogens and basic microbiology techniques. (Course enrollment 40-45 students). **Stony Brook Medical School.** 2008.
3. Faculty member in **Laboratory capacity building training programs** (2001-2003) arranged by **JICA (Japan International Corporation Agency)** and **ICMR (Indian Council of Medical Research)**. Participants were physicians, laboratory researchers from South East Asian and African countries. Teaching microbiology, molecular biology techniques and helping them to set up their laboratories according to their needs and resources.

January 2026

4. Faculty member in workshop on **Antimicrobial Resistance Monitoring**, 2002, arranged by **WHO**. Teaching monitoring and recording the antimicrobial resistance of different bacteria isolated from patients and how to maintain a database of the records.

ACADEMIC SERVICE

2023 - present - Ph. D admission committee (Application review and Interview)

2019 - present - MSPH admission committee

2017 - present - Reviewer Departmental Comprehensive exams

2014 - 2018 - MPH admission committee

2023- present - Conducting GDEC Faculty research seminars.

RESEARCH GRANT PARTICIPATION

ACTIVE GRANTS:

- Title:** The impact of shigellosis and recommended treatment in children
Dates: September 2025 to August 2030
Sponsor: U01 AI179562 National Institute of Health.
Principal Investigator: Subhra Chakraborty
Main objective: Conduct a randomized, placebo-controlled clinical trial to determine whether antibiotic treatment of non-dysentery shigellosis cases in children will improve clinical outcomes, gut health, and growth. This study aims to determine whether there is a need for policy change in the treatment of non-dysentery shigellosis cases with antibiotics. This study will also validate the need for a rapid test (developed at Chakraborty's lab at JHU) capable of identifying the patients who will benefit from antibiotics.
Principal Responsibilities: Overall design and supervision of the project.
- Title:** The impact of non-dysentery Shigella-associated diarrhea in children.
Dates: Study period April 2021 to February 2027.
Sponsor: R01AI153399 National Institute of Health.
Scored first percentile.
Principal Investigator: Subhra Chakraborty
Main objective: Study the impact of shigellosis on health. Study site: Bangladesh
Principal Responsibilities: Overall design and supervision of the project.
- Title:** Maternally acquired immunity in protection against enterotoxigenic E. coli infections in infants.
Dates: August 2024 to July 2025.
Sponsor: R56AI168316 National Institute of Health.
Principal Investigator: Subhra Chakraborty

Main objective: If maternal immunity could protect the vulnerable infants from ETEC infections. This study will uncover the possibility of a more effective immunization approach for protecting infants from ETEC by maternal immunization.

Principal Responsibilities: Overall design and supervision of the project.

4. **Title:** Functional profiling of OSP-specific and other antibodies during shigella infection.
Dates: April 2022 to August 2030.
Sponsor: R01AI155414 National Institute of Health.
Principal Investigator: Subhra Chakraborty (subcontract to JHU)
Main grant PI: Ed Ryan (Massachusetts General Hospital, Boston)
Main objective: Study antibodies to Shigella and protection in Bangladesh.
Principal Responsibilities: Training, monitoring, and supervising the enrollment of study participants using the novel diagnostic assay RLDT for Shigella.
5. **Title:** Inflammatory responses to Shigella infection
Dates: Sep 2024 to May 2026.
Sponsor: BMGF through PATH
Principal Investigator: Subhra Chakraborty
Main objective: Intestinal and systemic inflammation due to Shigella infection.
Principal Responsibilities: Supervising the study and presenting data.
6. **Title:** Shigella immunoassay collaborative studies.
Dates: Jul 2022 to December 2026.
Sponsor: Bill & Melinda Gates Foundation
Principal Investigator: Subhra Chakraborty
Main objective: Harmonization of the Shigella immunoassays through collaborative studies. These assays will be used in the upcoming Shigella phase III vaccine trials.
Principal Responsibilities: Supervising the lab work, presenting data.
7. **Title:** Development of a novel diagnostic assay for pediatric tuberculosis.
Dates: January 2023 to February 2026.
Sponsor: JHU TRAC (The Johns Hopkins Tuberculosis Research Advancement Center) NIH/NIAID P30AI18436.
Principal Investigator: Subhra Chakraborty (TRAC sub grant)
Main objective: Development of a rapid and simple molecular diagnostic assay for pediatric tuberculosis.
Principal Responsibilities: Designing and supervising the development of the assay.
8. **Title:** A Two Stage Phase 2b Randomized, Double-blind, Placebo Controlled Safety and Efficacy Study of ShigETEC, a Live, Attenuated Oral Combination Vaccine to Prevent Shigella and ETEC Disease Delivered to Healthy Adults Age 18 to 50 Years Old.
Dates: March 2025 – December 2027
Sponsor: NIH through Eveliqure.
Subcontract PI: Subhra Chakraborty
Main objective: Evaluating ShigETEC vaccine for Shigella and ETEC.

Principal Responsibilities: Head Enteric Vaccine and Immunology lab that supports the clinical trial with assisting in protocol development, vaccine and challenge dose preparations, microbiology, and immunology.

9. **Title:** Phase 2b, double-blind, placebo-controlled efficacy challenge study with the *Shigella* multivalent bioconjugate vaccine Shigella4V2 against *Shigella sonnei* Shigella immunoassay collaborative studies.

Dates: July 2025 to June 2026.

Sponsor: LimmaTech

Subcontract PI: Subhra chakraborty

Main Objective: Efficacy of the Shigella bioconjugate vaccine.

Principal Responsibilities: Head Enteric Vaccine and Immunology lab that supports the clinical trial with assisting in protocol development, vaccine and challenge dose preparations, microbiology, and immunology.

10. **Title:** CHIM Challenge/Rechallenge: Shigella cross-protective antigens discovery.

Dates: Nov 2019 to Jun 2026

Sponsor: Bill & Melinda Gates Foundation

Subcontract PI: Subhra chakraborty

Main Objective: Understand the cross protection between different serotypes/serogroups and antigens of Shigella.

Principal Responsibilities: Head Enteric Vaccine and Immunology lab that supports the clinical trial with assisting in protocol development, vaccine and challenge dose preparations, microbiology, and immunology.

11. **Title:** Pre-Study of wild type Enterotoxigenic *E. coli* (ETEC) Strain E24377A for verification of a planned challenge dose.

Dates: May 2023 to December 2025

Sponsor: Scandanavian Biopharma

Subcontract PI: Subhra Chakraborty

Main Objective: Challenge dose verifications.

Principal Responsibilities: Head Enteric Vaccine and Immunology lab that supports the clinical trial with assisting in protocol development, vaccine and challenge dose preparations, microbiology, and immunology.

12. **Title:** Characterization of the Vaginal Microbiota in Women of Reproductive Age in Rural Bangladesh (VAMI-1).

Dates: December 2021 to June 2025.

Sponsor: Bill & Melinda Gates Foundation

Principal Investigator: Alain Labrique / Daniel Erchic

Main objective: Study vaginal microbiome in rural women, characterization and identifying risk factors.

Role in Project: Co-Investigator

Principal Responsibilities: Lead implementation and standardization of laboratory and microbiome specimen collection protocols, training of local staff, and oversight of specimen analysis, contribute to the study design, analytic and interpretation of data.

13. Title: JiVitA vaginal microbiome community-based cohort (VAMI-2).**Dates:** November 2022 to December 2026.**Sponsor: Bill & Melinda Gates Foundation****Principal Investigator:** Daniel Erchic**Main objective:** Study vaginal microbiome in rural women, characterization and identifying risk factors.**Role in Project: Co-Investigator****Principal Responsibilities:** Lead implementation and standardization of laboratory and microbiome specimen collection protocols, training of local staff, and oversight of specimen analysis, contribute to the study design, analytic and interpretation of data.**14. Title: Epidemiology and Ecology of Cholera in Africa****Dates:** May 2023 to April 2028**Sponsor: R01 National Institute of Health.****Principal Investigator:** David Sack**Role in the project: Co-Investigator****Main Objective:** This application builds on evidence from our initial R01 study of cholera in Africa showing that cholera lineages “spread to” rather than “emerge from” endemic areas.**Principal Responsibilities:** Implementing the novel RLDT assay developed in my lab for surveillance of cholera in the study sites.**15. Title: A cross protective multivalent vaccine for Shigella and ETEC****Dates:** June 2023 to May 2028**Sponsor: R01 National Institute of Health.****Principal Investigator:** David Sack**Role in the project: Co-Investigator****Main Objective:** Developing a vaccine for Shigella and ETEC using MEFA.**Principal Responsibilities:** Contribute to evaluating the vaccine immune responses using a multiplex ETEC ELISA that we developed in my lab.**16. Title: Infectious Diseases training program in Bolivia: South-South Training with Peru.****Dates:** 2025 to Dec 2030**Sponsor: D43TW010074, National Institute of Health****Principal Investigator:** Robert Gilman**Role in the project: Co-Investigator****Main Objective:** Continue the training program to achieve a critical mass of researchers in Bolivia.**Principal Responsibilities:** Training Bolivian students in laboratory research and field epidemiology studies.**COMPLETED GRANTS AS PRINCIPAL INVESTIGATOR IN LAST 5 YEARS.**

- 1. Title:** Natural infection of norovirus, sapovirus and ETEC in a birth cohort in a Peruvian community. Study site: JHU and Peru.
Dates: June 2015 to June 2022.
Sponsor: R01AI108695 National Institute of Health.
Principal Investigator: Robert Gilman, **Subhra Chakraborty** (MPI)
Main objective: Evaluating epidemiology and immune responses to norovirus, sapovirus and ETEC in a longitudinal birth cohort in Peruvian children.
Principal Responsibilities: Overall design and supervision of the project, laboratory work.
- 2. Title:** Addressing the technology gaps in diagnostics of enterotoxigenic Escherichia coli and Shigella. Study site: JHU and India.
Dates: August 2018 to January 2021.
Sponsor: R21 AI137804, National Institute of Health.
Principal Investigator: **Subhra Chakraborty**
Main objective: Developing and evaluating a novel rapid assay, appropriate for resource poor settings for detection of ETEC and Shigella.
Principal Responsibilities: Overall design and supervision of the project, laboratory and field work.
- 3. Title:** Validation and feasibility of a novel, simple and rapid assay to detect cholera in resource poor settings and outbreak situations. Study sites: JHU, Nigeria, Uganda and Bangladesh.
Dates: August 2019 to June 2023.
Sponsor: Wellcome Trust
Principal Investigator: **Subhra Chakraborty**
Main objective: Developing and evaluating a novel rapid assay, appropriate for resource poor settings for detection of ETEC and Shigella.
Principal Responsibilities: Overall design and supervision of the project, laboratory, and field work.
- 4. Title:** Evaluate efficacy of the CampETEC vaccine.
Dates: October 2021 to Sep 2024
Sponsor: NMRC, Department of Defense
Subcontract PI: **Subhra Chakraborty**
Main Objective: Evaluate efficacy of the CampETEC product against ETEC-mediated disease in the H10407 challenge model.
Principal Responsibilities: Head Enteric Vaccine and Immunology lab that supports the clinical trial with assisting in protocol development, vaccine and challenge dose preparations, microbiology, and immunology.
- 5. Title:** Facility based surveillance of Shigella infection among children presenting with moderate to severe diarrhea in Burkina Faso and Zambia.
Dates: Jan 2020 to December 2023.
Sponsor: **The European & Developing Countries Clinical Trials Partnership (EDCTP) through Centre for Infectious Disease Research Zambia (CIDRZ).**

Principal Investigator: Subhra Chakraborty**Main objective:** surveillance of Shigella and ETEC in Zambia and Burkina Faso.**Principal Responsibilities:** Supervising the lab work, presenting data.**PRESENTATIONS****ABSTRACTS (selected): Scientific Meetings**

1. **Subhra Chakraborty*** (Speaker), Zachary Mazanek, Jade Lewis, Chad Porter, Bridgett Finley, A. Louis Bourgeois, Fatema Tuz-Johura, Sandra Isidean, Kate DeTizio, Arthi Rameshkumar, Courtney Swisher, Brittany Feijoo, Jessica Brubaker, Akamol E. Suvarnapunya, Renee Laird, Nicole Maier, Patricia Njuguna, Kawsar Talaat, Calman MacLennan. Immune responses and association with protection in heterologous *Shigella flexneri* 2a and *S. sonnei* challenge in healthy adults. **Vaccine for Enteric Disease**, June 23rd to 26th, **2025**, Gothenburg, Sweden.
2. **Subhra Chakraborty*** (Speaker), Fatema-Tuz Johura, Sam Dougan, Marzia Sultana, Shirajum Monira, Anne Bishop, Astrid von Mentzer, David A Sack, Richard Bradley Sack, Nicholas Thomson, Munirul Alam. Clinical and Environmental Epidemiology and Antimicrobial Resistance of ETEC and the Role of Environmental Factors. **Vaccine for Enteric Disease**, June 23rd to 26th, **2025**, Gothenburg, Sweden.
3. Talaat KR, Bourgeois AL, **Chakraborty S**, Porter CK, Swisher C, Wang T, Feijoo B, Dhanjani K, Isidean S, Herzog C, Knave N, Jansson C and Sjostrand B. Pre-study of wild type Enterotoxigenic *E. coli* (ETEC) strain for verification of a planned challenge dose. **Vaccine for Enteric Disease**, June 23rd to 26th, **2025**, Gothenburg, Sweden.
4. Talaat, KR Finley B, Porter C, **Subhra Chakraborty S**, A. Louis Bourgeois, Sandra Isidean, Kate DeTizio, Arthi Rameshkumar, Courtney Swisher, Billingsley M, Brittany Feijoo B, Brubaker J, Suvarnapunya AE, Renee Laird, Nicole Maier, Njuguna P, Calman MacLennan. Cross-protection of heterologous *Shigella flexneri* 2a and *S. sonnei* challenge in healthy adults in the United States. **Vaccine for Enteric Disease**, June 23rd to 26th, **2025**, Gothenburg, Sweden.
5. Talaat KR, Porter CK, Tekalign R, DeNearing B, **Chakraborty S**, Bourgeois AL, Swisher C, Feijoo BL, Dhanjani K, Lewis J, Isidean SD, Testa K, Gariepy CL, Islam D, Chapman V, Laird RM, Casey JL, Kanellos J, Sack DA and Poly F. Randomized, double-blind, placebo-controlled study on the efficacy and safety of CampETEC Hyperimmune Bovine Colostrum (HBC) for the prevention of *Campylobacter*-mediated diarrheal disease. **Vaccine for Enteric Disease**, June 23rd to 26th, **2025**, Gothenburg, Sweden.
6. Navarro RC, Luo W, **Chakraborty S**, Sack DA, Maxwell A. Assessing the Safety Profile of a Multiepitope Fusion Antigen Shigella Vaccine in the Rhesus Macaque (*Macaca*

- mulatta*), a Pilot Study. 76th AALAS National Meeting, Long Beach, California. Nov 9-13, 2025.
7. Dinowitz D, L Wensheng, Sack DA, Brockhurst J, Ondeck C, Calahan M, Madhwal A, **Chakraborty S**, Zhang W. Immune protection from a multiepitope shigellosis candidate vaccine (ShigVax). **Vaccine Day JHU, 2025.**
 8. Dash S (speaker), Sultana E, Naz F, Ali M, Lewis J, Rahman R, Das S, Ahmed T, Faruque ASG, **Chakraborty S***. Assessing the feasibility and applicability of RLDT for rapid detection of *Shigella* in healthcare facilities in rural Bangladesh. **17th Asian Conference on Diarrhoeal Disease and Nutrition, December 8th to 10th, 2024, Kathmandu, Nepal.**
 9. R. BR (speaker), Sanin KI, Elahi M, Ali M, Dash S, Sultana E, Mamun SA, Naz F, Ram M, Sack D, Ahmed T, Faruque ASG, Tofail F, **Chakraborty S***. Role of watery diarrhea in neurocognitive development and mother child interaction at home in rural Bangladesh. **17th Asian Conference on Diarrhoeal Disease and Nutrition, December 8th to 10th, 2024, Kathmandu, Nepal.**
 10. Naz F (speaker), Dash S, Ali M, Sultana E, Das S, Rahman R, Lewis J, Tahmed A, Faruque ASG, **Chakraborty S***. Validation of a simple and rapid diagnostic assay RLDT for the detection of *Shigella* using rectal swabs at tertiary hospitals in Bangladesh. **17th Asian Conference on Diarrhoeal Disease and Nutrition, December 8th to 10th, 2024, Kathmandu, Nepal.**
 11. Alam J (Poster presenter), Shaima SN, Das R, Haque A, Hossain N, Khan SH, Nuzhat S, Chisti MJ, Ahmed T, **Chakraborty S**, Faruque ASG. Clinical profile of diarrhoea associated with enterotoxigenic *Escherichia coli* and *Vibrio cholerae* in Bangladesh: findings from hospital-based surveillance, 2008-2023. **17th Asian Conference on Diarrhoeal Disease and Nutrition, December 8th to 10th, 2024, Kathmandu, Nepal.**
 12. Faruque ASG (poster presenter), Dash S, Ali M, Sultana E, Ram M, Perin J, Naz F, Roy BR, Hasan AA, Afroze F, Tofail F, Ahmed T, **Chakraborty S***. Healthcare seeking behavior and antibiotic use for diarrhea among children in rural Bangladesh before seeking care at a healthcare facility. **17th Asian Conference on Diarrhoeal Disease and Nutrition, December 8th to 10th, 2024, Kathmandu, Nepal.**
 13. Ali M (Poster presenter), Dash S, Sultana E, Naz F, Lewis J, Rahman R, Das S, Ahmed T, Faruque ASG, **Chakraborty S***. Malnutrition and associated factors among children under five years old seeking care with watery diarrhoea in rural Bangladesh. **17th Asian Conference on Diarrhoeal Disease and Nutrition, December 8th to 10th, 2024, Kathmandu, Nepal.**
 14. Héma A, Sermé SS, Sawadogo J, Diarra A, Barry A, Ouédraogo AZ, Nébié I, Tiono AB, Houard S, **Chakraborty S**, Ouédraogo A, Sirima SB. Application of the rapid diagnostic test based on loop-mediated isothermal amplification (RLDT) for *Shigella* and enterotoxigenic *Escherichia coli* (ETEC) detection in childhood diarrhea in Burkina Faso.

American Society of Tropical Medicine and Hygiene (ASTMH), New Orleans, Louisiana. 13-17 November 2024.

15. Mirza Velagic, Francis Ongole, Zayyanatu Nuru, Kamrul Islam, Yiyi Zhou, Chinedu Okoroafor, Ashraful Islam Khan, Taufiqur Rahman Bhuiyan, Iliya Cheshi, David A Sack, Tochi Okwor, Firdausi Qadri, **Subhra Chakraborty (Speaker)**. RLDT - a simple molecular diagnostic tool to aid rapid detection of outbreaks and surveillance of cholera. **57th United States – Japan Cooperative Medical Science Program – Joint Panel Conference on Cholera and Other Bacterial Enteric Infections**. Kukuru Itoman, Okinawa, Japan on December 12-14, 2023.
16. **Subhra Chakraborty**, RLDT Consortium. RLDT - A rapid and simple molecular diagnostic tool to aid surveillance and vaccine evaluation of enterotoxigenic *E. coli* and *Shigella*. **EDCTP Forum Conference**, Paris, France from 7-10 November 2023.
17. Xueyan Zhang, Jessica Brubaker, Kawsar R. Talaat, Chad K. Porter, Brittany L Feijoo, Brittany Adjoonani, David A Sack, Susanne Eder-Lingelbach, Christian Taucher, **Subhra Chakraborty* (Speaker)**. Intestinal inflammation induced by the heat-labile toxin-producing enterotoxigenic *E. coli* infection and impact on immune responses in an experimental challenge model in humans. **VASE Conference**. Renaissance Hotel, Washington DC, Nov 29th-Dec 1st, 2022.
18. Monica J Pajuelo, Sassan Noazin, Lilia Cabrera, Angie Toledo, Mirza Velagic, Lucero Arias, Mayra Ochoa, Larry Moulton, Mayuko Saito, Robert H Gilman, **Subhra Chakraborty* (Speaker)**. Early life enterotoxigenic *Escherichia coli* infections and impact on health in a birth cohort study in Lima, Peru. **VASE Conference**. Renaissance Hotel, Washington DC, Nov 29th-Dec 1st, 2022.
19. Tuz-Johura F, Sultana M, Zhang X, Velagic M, Sayed A, George CM, Brubaker J, Monira S, Sack DA, Sack RB, Alam M, **Chakraborty S***. Impact of environmental parameters on the population of enterotoxigenic *Escherichia coli* in the surface water of coastal Bangladesh. **VASE Conference**. Renaissance Hotel, Washington DC, Nov 29th-Dec 1st, 2022.
20. Sultana Al-A, Naz F, Khan SH, **Chakraborty S**, Faruque ASG. Epidemiology of ETEC and EPEC diarrhea in under five children with moderate-to-severe diarrhea in South Asia and Sub-Saharan Africa from the Global Enteric Multicenter Study (GEMS). **VASE Conference**. Renaissance Hotel, Washington DC, Nov 29th-Dec 1st, 2022.
21. Nuzhat S, Das R, Das S, Islam SB, Palit P, Haque MA, **Chakraborty S**, Khan SH, Ahmed D, Alam B, Ahmed T, Chisti MJ, Faruque ASG. Antimicrobial resistance in shigellosis: A surveillance study among urban and rural children over 20 years in Bangladesh. **VASE Conference**. Renaissance Hotel, Washington DC, Nov 29th-Dec 1st, 2022.
22. Monica J Pajuelo, Sassan Noazin, Lilia Cabrera, Angie Toledo, Mirza Velagic, Lucero Arias, Mayra Ochoa, Larry Moulton, Mayuko Saito, Robert H Gilman, **Subhra**

- Chakraborty* (Speaker).** Epidemiology of enterotoxigenic *Escherichia coli* and impact on children in the first 2 years of life in Peru. **American Society of Tropical Medicine and Hygiene (ASTMH)**, Washington Convention Center, Seattle, Nov **2022**.
23. Pajuelo MJ, Rivera M, Pando A, Nadimpalli M, Cabrera L, Saito M, Gilman RH, Chakraborty S. Antibiotics use in children under two years old from a prospective birth cohort from Lima, Peru. **American Society of Tropical Medicine and Hygiene (ASTMH)**, Washington Convention Center, Seattle, Nov **2022**.
24. Nuzhat S, Das R, Das S, Islam SB, Palit P, Haque MA, **Chakraborty S**, Khan SH, Ahmed D, Alam B, Ahmed T, Chisti MJ, Faruque ASG. Antimicrobial resistance in shigellosis: A surveillance study among urban and rural children over 20 years in Bangladesh. **ASCODD**, Westin, Kolkata, India, Nov **2022**.
25. Goutam Chowdhury, Debjani Ghosh, YiYi Zhou, Alope Deb, Asish Kumar Mukhopadhyay, Shanta Dutta, **Subhra Chakraborty (Speaker)**. Field evaluation of RLDT, a simple and rapid diagnostic for *Shigella* and enterotoxigenic *E. coli*. **16th Asian Conference on Diarrheal Diseases and Nutrition**, Westin, Kolkata, India, Nov **2022**.
26. Faruque ASG, Sultana Al-A, Naz F, Khan SH, Chakraborty S. Enterotoxigenic *E. coli* diarrhea and its surges during summer cholera peaks in urban and peri-urban areas of Dhaka city, Bangladesh: An analysis of hospital-based surveillance data, icddr,b, 2008-2022, Dhaka, Bangladesh. **16th Asian Conference on Diarrheal Diseases and Nutrition**, Westin, Kolkata, India, Nov **2022**.
27. Hoque KM, Hayashi M, Ali SI, Banerjee A, Verma S, Leblanc N, Nadia Ameen N, J Zeiss CJ, **Chakraborty S**. Elevated 5-hydroxytryptamine in COVID-19 Stimulates ANO1 Mediated Cl Secretion in Lung & Intestinal Epithelial Cells. **Experimental Biology**, Pennsylvania Convention Center, Philadelphia, Pennsylvania, April 2-5, **2022**.
28. Nadimpalli ML, Salvatierra LR, Arias L, Swarthout JM, Ochoa M, Cabrera LZ, Pickering, **Chakraborty S**, Calderon M, Gilman RH, Mayuko Saito, Pajuelo MJ. Breastfeeding reduces children's risk of acquiring ESBL-producing *Enterobacteriaceae* in an urban informal settlement of Lima, Peru. **Association for Clinical and Translational Science**. Hyatt Regency, Chicago, IL, USA, April 20-22, **2022**.
29. **Subhra Chakraborty (Speaker)**, Mirza Velagic, Xueyan Zhang, Jessica Brubaker. A rapid and simple diagnostic tool for enterotoxigenic *E. coli* and *Shigella* applicable to endemic countries. **International VASE Conference Webinar**, September 28th & 30th **2021** (Virtual).
30. **Chakraborty S (Speaker)**,* Brubaker J, Bourgeois AL, Sack DA,. Intestinal & systemic inflammation induced by symptomatic & asymptomatic enterotoxigenic *E. coli* infection in an experimental challenge model in humans. **American Society of Tropical Medicine and Hygiene (ASTMH)**, November **2020** (Virtual).

31. **Chakraborty S (Speaker)**, Connor S, Voeglein JB, Alam M, Wierzba T, Bourgeois AL, Sack DA. A novel diagnostic tool to aid surveillance and vaccine evaluation for diarrhea due to cholera, enterotoxigenic *E. coli* and *Shigella* spp. **U.S.-Japan Cooperative Medical Sciences Program (USJCMSP) 21st International Conference on Emerging Infectious Diseases in the Pacific Rim. Hanoi, Vietnam, Feb 26th to March 1st, 2019.**
32. **Chakraborty S**, Randall A, Vickers TJ, Molina D, Harro CD, DeNearing B, Brubaker J, Sack. DA, Bourgeois AL, Flegner PL, Liang. X, Mani. S, Wenzel H, Townsend. RR, Gilmore PE, Darsley MJ, Rasko. DA, Fleckenstein JM. Molecular and immunological characterization of a live-attenuated enterotoxigenic *E. coli* vaccine. **U.S.-Japan Cooperative Medical Sciences Program (USJCMSP) 21st International Conference on Emerging Infectious Diseases in the Pacific Rim. Hanoi, Vietnam, Feb 26th to March 1st, 2019.**
33. **Chakraborty S (Speaker)**, Connor S, Voeglein JB, Alam M, Wierzba T, Bourgeois AL, Sack DA. A novel diagnostic tool to aid surveillance and vaccine evaluation for diarrhea due to enterotoxigenic *E. coli* and *Shigella* spp. **2nd International VASE Conference. Mexico City, Hyatt Regency Mexico city, June 12-14, 2018.**
34. Chitradevi STS, Heine SJ, Mani S, Kotloff KK, Harro C, **Chakraborty S**, Pasetti MF. *Shigella*-specific serum bactericidal and opsonophagocytic killing antibodies induced by oral vaccination with *S. flexneri 2a* whole cell killed and live attenuated vaccine strains. **2nd International VASE Conference. Mexico City, Hyatt Regency Mexico city, June 12-14, 2018.**
35. Randall A, Trappi-Kimmons K, **Chakraborty S**, Sack DA, A. Bourgeois AL, Liang X, Rasko DA, Fleckenstein JM, Sachin Mani S. Immune-profiling of fecal IgA samples on ETEC protein microarray. **2nd International VASE Conference. Mexico City, Hyatt Regency Mexico city, June 12-14, 2018.**
36. Ndungo E, Randall A, Hazen TH, Kania DA, Trappi-Kimmons K, Liang X, Barry EM, **Chakraborty S**, Rasko DA, Mani S, Pasetti MF. Development of *Shigella* proteome microarrays and analysis of human antibody responses following vaccination and challenge. **2nd International VASE Conference. Mexico City, Hyatt Regency Mexico city, June 12-14, 2018.**
37. **Chakraborty S (Speaker)**, Harro. C, Brubaker. J, DeNearing B, Baures. N, Dally. L, Fix A, Mani S, Bourgeois. L, Sack. D, Walker. R. Immunogenicity and protective efficacy of a live attenuated ETEC vaccine candidate against virulent enterotoxigenic *Escherichia coli* (ETEC) in a human ETEC challenge model. **American Society of Tropical Medicine and Hygiene (ASTMH), Baltimore, USA 5-6 Nov, 2017.**
38. **Chakraborty S (Speaker)**, Harro. C, Brubaker. J, DeNearing B, Baures. N, Dally. L, Fix A, Mani S, Bourgeois. L, Walker. R, Sack. D. Immunological factors contributing to

enhanced protective efficacy in volunteers immunized with the dmLT adjuvanted ACE 527 ETEC vaccine. **Vaccine for Enteric diseases**. Albufeira, Portugal, 9-11 October 2017.

39. **Chakraborty S (Speaker)**, Harro C, Pop M, Yang WE, Paulson JN, Suchindran S, Walker AW et al. Impact of host factors in predicting clinical diarrhea outcome after infection with enterotoxigenic *E. coli* in humans. **Emerging Infectious Diseases and US-Japan Cooperative Medical Sciences Program. NIAID**. Seoul, South Korea. February 6-10, 2017.
40. Kumar P, Kuhlmann FM, **Chakraborty S**, Bourgeois. AL, Sack DA, DeNearing B, Harro CD, Kumar P, Gildersleeve JC, Ciorba M, avid A Sack4, Barbara DeNearing4, Clayton D. Harro4, Santhanam. S, Qingwei L, Fleckenstein JM. Blood Group A Antigen Expression Influences Pathogen-Host Interactions and Clinical Outcome Following Infection with Enterotoxigenic *Escherichia coli*. **Keystone Symposia on Molecular and Cellular Biology, London, UK**. October 26-29, 2016.
41. Pop M, Paulson JN, **Chakraborty S (Speaker)**, Astrovskaya I, Lindsay BR, Li S, Bravo HC, Harro C, Parkhill J, Walker AW, Walker RI, Sack DA, Stine OC. Individual-specific changes in the human gut microbiota after challenge with enterotoxigenic *Escherichia coli* and subsequent ciprofloxacin treatment. **VASE Conference. Washington, DC, USA**. June 28-30, 2016.
42. Randall A, **Chakraborty. S**, Fleckenstein. J, Molina. D, DeNearing B, Brubaker. J, Sack. D, Bourgeois. AL, Felgner. P, Liang. X, Mani. S, Wenzel. H, Rasko. DA. Development and application of proteome microarrays to characterize immune responses in human volunteers following ETEC experimental challenge. **VASE Conference. Washington, DC, USA**. June 28-30, 2016.
43. Kuhlmann FM, **Chakraborty. S**, Bourgeois. AL, Sack DA, DeNearing B, Harro CD, Kumar P, Gildersleeve JC, Ciorba M, avid A Sack4, Barbara DeNearing4, Clayton D. Harro4, Santhanam. S, Qingwei L, Fleckenstein JM. Blood Group A Antigen Expression Influences Pathogen-Host Interactions and Clinical Outcome Following Infection with Enterotoxigenic *Escherichia coli*. **VASE Conference. Washington, DC, USA**. June 28-30, 2016.
44. **Chakraborty. S**, Harro. C, Brubaker. J, DeNearing B, Ram M, Dally. L, Baures. N, Flores. J, Bourgeois. L, Walker. R, Sack. D. Immune response profiles and spectrum of illness after primary infection and following homologous re-challenge in enterotoxigenic *E. coli* (ETEC) human challenge model. **US-Japan Cooperative Medical Sciences Program. NIAID**. Bethesda, MD, USA. Jan 11-12, 2016.
45. Kuhlmann FM, **Chakraborty. S**, Bourgeois. AL, Sack DA, DeNearing B, Harro CD, Fleckenstein JM. Blood Group A Antigens Predict Outcomes in Enterotoxigenic *Escherichia coli* H10407 Challenged Volunteers. **US-Japan Cooperative Medical Sciences Program. NIAID**. Bethesda, MD, USA. Jan 11-12, 2016.

46. **Chakraborty S (Speaker)**, Harro CD, Ram M, Bourgeois L, Bauers N, Flores. J, Dally L, Walker R, Sack D. Dose-dependent spectrum of illness and immune response profiles after primary infection and following homologous re-challenge in a low dose enterotoxigenic *E. coli* (ETEC) challenge model. **Vaccines for Enteric Diseases. Edinburgh, Scotland.** July 8-10, 2015.
47. Harro CD, **Chakraborty S**, Sack D, DeNearing B, Bourgeois L, Darsley M, Bauers N, Dally L, Fix A and Walker R. DmLT adjuvanted Live Attenuated Enterotoxigenic Escherichia coli (ETEC) Vaccine Candidate Protects Against Virulent ETEC in a Human ETEC Challenge Model. **Vaccines for Enteric Diseases. Edinburgh, Scotland.** July 8-10, 2015.
48. **Chakraborty S (Speaker)**, Harro CD, Bream J, Ali M, Brubaker J, Denearing B, Bourgeois L, Van de L, Walker R, Bauers N, Darsley M and Sack D. Modulation of serum cytokines by a killed oral *Shigella* vaccine or a live attenuated oral enterotoxigenic *E. coli* (ETEC) vaccine given alone or with the new mucosal adjuvant, dmLT, to healthy adults. **49th U.S.-Japan Conference on Cholera and Other Enteric Bacterial Infections. Gainesville, FL, USA.** Jan 14-16, 2015.
49. George CM, Talukder KA, Ahmed S, Azmi IJ, Ali S, Akter F, Oldja L, Perin J, Sack D, Sack RB, **Chakraborty S**, Zhang X, Moulton L, Parvin T, Bhuyian. SI, Bouwer E, Colin Stine. O, Faruque AG. Identifying Clinical and Environmental Transmission of Shigellosis among Household Contacts of Patients in Rural Bangladesh. **49th U.S.-Japan Conference on Cholera and Other Enteric Bacterial Infections. Gainesville, FL, USA.** Jan 14-16, 2015.
50. Sarkar P, Sheikh IA, **Chakraborty S** and Hoque. KM. Zinc recovers altered intestinal ion-transport and barrier function caused by *Shigella* infection in T84 cells. **Experimental Biology, San Diego, USA,** April 26th to 30th, 2014.
51. **Chakraborty S (Speaker)**, Mohasin MD, Brubaker J, Harro CD, DeNearing B, Darsley MJ, Bourgeois AL, Walker R, Sack DA. Memory B cell responses to colonization factor antigens and LT toxin following experimental ETEC infection and immunization with the ACE527 vaccine. **Vaccine for Enteric Diseases, Bangkok, Thailand,** 6-8 November 2013.
52. Harro CD, **Chakraborty S (Speaker)**, Sack D, Van de Verg L, DeNearing B, Bauers N, Bourgeois AL and Walker R. A Phase 1 Study to Evaluate the Safety, Tolerability, and Immunogenicity of an Oral Inactivated Whole Cell *Shigella flexneri* 2a Vaccine in Healthy Adult Subjects. **Vaccine for Enteric Diseases, Bangkok, Thailand,** 6-8 November 2013.
53. **Chakraborty S**, Alam M, Scobie HM, Sack DA. Adaptation of a Simple Dipstick Test for Detection of *V. Cholerae* in Environmental Water. **45th Conference, Cholera and other bacterial enteric infections US-Japan Cooperative medical science program, Chiba, Japan,** December 12-14 2012.

- 54.** Lindsay B*, **Chakraborty S*** (Co-first author), Harro CD, Nataro JP, Sommerfelt H, Bourgeois AL, Ochieng B, Ikumapayi U et al. *Co-firsts. Quantitative PCR for evaluation of labile toxin (LT) gene in Enterotoxigenic *E. coli* (ETEC) associated diarrhea in volunteers and children from low income countries. **45th Conference, Cholera and other bacterial enteric infections US-Japan Cooperative medical science program, Chiba, Japan, 12-14 December 2012.**
- 55.** Harro CD, Sack D, Darsley M, Bourgeois AL, DeNearing B, Feller A, **Chakraborty S**, Marcum A, Comendador R, Buchwaldt C and Walker R. Volunteers receiving live attenuated ETEC vaccine (ACE527) have reduced severity of illness following H10407 challenge. **Vaccines for Enteric Diseases. The Novotel Cannes Montleury, Cannes, France. 14-16 September 2011.**
- 56.** **Chakraborty S**, Feller A, Mawanda F, Hnizda B, Harro CD, DeNearing B, Marcum A, t Bourgeois AL, Walker R, Lundgren A, Svennerholm A-M, and Sack D. Immune responses in naïve and veteran volunteers challenged with Enterotoxigenic *E. coli* H10407. **44th Conference, Cholera and other bacterial enteric infections US-Japan Cooperative medical science program, San Diego, California, 12-14 October 2009.**
- 57.** **Chakraborty S**, Feller A, Mawanda F, Hnizda B, Harro CD, DeNearing B, Marcum A, Bourgeois AL, Walker R, Lundgren A, Svennerholm A-M, and Sack D. Immune Responses in Volunteers Challenged with Enterotoxigenic *E. coli*. **Vaccine for Enteric Diseases, Benalmadena, Malaga, Spain, 9-11 September 2009.**
- 58.** Harro CD, DeNearing B, Marcum A, Feller A, **Chakraborty S**, Hnizda B, Bourgeois AL, Walker R, Lundgren A, Svennerholm A-M, and Sack DA. Development of a low-dose challenge model for evaluation of vaccines for enterotoxigenic *E. coli* (ETEC) in volunteers. **Vaccine for Enteric Diseases, Benalmadena, Malaga, Spain, 9-11 September 2009.**
- 59.** **Chakraborty S**, Monfett M, Maier TM, Frank DW and Thanassi DG. Type IV pilus biogenesis in *Francisella tularensis*: *pilB* and *pilT* are essential for fiber assembly, adherence and virulence. **Gordon Research Conferences, Microbial toxins and pathogenesis, Proctor Academy in Andover, NH, USA July 13-18, 2008.**
- 60.** **Chakraborty (Speaker)**, Monfett M, Maier TM, Frank DW and Thanassi DG. Type IV pilus biogenesis in *Francisella tularensis*: *pilB* and *pilT* are essential for fiber assembly, adherence and virulence. **2008 Tularemia Workshop. The Sagamore Resort and Conference Center Bolton Landing, NY, USA, March 30-April 1, 2008.**
- 61.** **Chakraborty S (Speaker)**, Monfett M, Maier TM, Frank DW, Thanassi DW. Biogenesis of type IV pili in *Francisella tularensis* and role in virulence. **4th Annual NIAID RCE Research Meeting, St. Louis, MO, USA, 15th-17th April, 2007.**
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assembly, adherence and virulence. **FASEB Summer Research Conferences. Microbial Pathogenesis: Mechanisms of Infectious Diseases, Snowmass Village, Colorado, USA, July 21-27, 2007.**

- 63. Chakraborty S (Speaker),** Monfett M, Maier TM, Frank DW, Thanassi DG. Assembly of type IV pili in *Francisella tularensis* and role in virulence. **5th International Conference on Tularemia, Woods Hole, MA, USA, 1st – 4th Nov, 2006.**
- 64. Platz G, Chakraborty S,** Gil-Gil H, Monfett M, Benach J and Thanassi DG. Decreased Virulence of a *Francisella tularensis tolC* Mutant. **106th ASM Meeting, Orlando, Florida, USA, 21st-25th May, 2006.**
- 65. Chakraborty R, Chakraborty S,** De K, Sinha S, Garg P, Ramamurthy T, Takeda Y, Nair GB. Molecular characterization of clinical strains of *Vibrio fluvialis* isolated from pediatric diarrhoea cases that show cell vacuolating activity. **Xth International Congress of bacteriology and applied microbiology, International Union of Microbiological Society (IUMS), Paris, 27th July-1st August, 2002.**
- 66. Chakraborty S,** Sarkar B, Pal A, Nandy RK, Bhattacharya SK, Nair GB, Takeda Y and Ramamurthy T. Characterization of *Escherichia coli* strains harbouring *elt* and *est* genes with reference to serotype and colonization factor antigens. **Indian Science Congress, held in New Delhi, India, from 3rd to 7th January, 2001.**
- 67. Chakraborty S,** Deokule JS, Bhattacharya SK, Nair GB, Yamasaki S, Takeda Y and Ramamurthy T. Molecular analysis of Enterotoxigenic *Escherichia coli* associated with an outbreak of diarrhea in Ahmedabad by pulsed field gel electrophoresis. **5th International Meeting of Molecular epidemiology and Evolutionary Genetics of Infectious Diseases, held at Hyderabad, India, November 12th to 16th, 2000.**

PRESENTATIONS: INVITED SPEAKER

1. Towards Effective Vaccines and Interventions to Control Enteric Diseases. Invited talk at Public Health, the **Centre for Infectious Disease Research, Zambia.** Oct 16th, **2025.**
2. Towards Effective Vaccines and Interventions to Control Enteric Diseases. Invited talk at Public Health, the **University of California, Berkeley.** March 9th, **2025.**
3. Insight into the Etiology of Diarrhea and Challenges. **17th Asian Conference on Diarrhoeal Disease and Nutrition,** December 8th to 10th, **2024,** Kathmandu, Nepal.
4. Workshop “Characterizing the Nature and Severity of Intestinal Inflammation to Guide Enteric Vaccine and Prophylactic Product Development and Evaluation” organized by **PATH,** Washington DC, USA, Nov 29th, **2022.**

5. Global Rotavirus and Pediatric Diarrhea Surveillance Network meeting. Immunization, Vaccines and Biologics, **World Health Organization**, Southern Sun The Cullinan Hotel, Cape Town, South Africa, Nov 28th, 2018.
6. Global Burden of Enteric Diseases meeting. Immunization, Vaccines and Biologics **World Health Organization**. Southern Sun The Cullinan Hotel, Cape Town, South Africa, Nov 29-30th, 2018.
7. Impact of host factors in predicting clinical diarrhea outcome after infection with enterotoxigenic *E. coli* in humans. **2nd International VASE Conference. Mexico City, Hyatt Regency Mexico city, June 12-14, 2018.**
8. CHIMS and Live Attenuated Vaccine. **Joint WHO-NIAID-PATH workshop** on development and standardization of ETEC assays and antigens. Washington DC, **6th March, 2018.**
9. ETEC-RLDT a New ETEC Screening Tool. **Joint WHO-NIAID-PATH workshop** on development and standardization of ETEC assays and antigens. Washington DC, **7th March, 2018.**
10. **Shigella CHIM Assays Workshop, Bill & Melinda Gates Foundation, Washington DC, Tuesday 28 November 2017.**
11. Immunological Markers of Vaccine Responses to Enterotoxigenic *E. coli*. **Asian conference on diarrheal disease and nutrition, Kochi, India.** Oct 30th to Nov 1st 2017.
12. Immunological Factors Contributing to Enhanced Protective Efficacy in Volunteers Immunized with dmLT Adjuvanted ACE 527 ETEC Vaccine. **American Society of Tropical Medicine and Hygiene. Atlanta, Georgia, USA, November 13 to 17, 2016.**
13. Humoral responses to ETEC vaccination and challenge. **VASE Conference. Washington, DC, USA. June 28-30, 2016.**
14. Immune responses to challenge and re-challenge with ETEC H10407. **Microarray workshop, Washington DC, USA, February 25th 2015.**
15. Role of environment in Transmission of ETEC in Bangladesh. **NIH investigators meeting, Bethesda, Maryland, USA, September 15th 2014.**
16. Approaches to develop Enterotoxigenic *E. coli* Vaccine. **International Centre for Diarrhoeal Disease Research (ICDDR'B), Dhaka, Bangladesh, June 11th 2013.**
17. Enterotoxigenic *E. coli* Vaccine: Where we are? **National Institute of Cholera and Enteric Diseases (NICED), Kolkata, India, December 12th 2012.**

18. Immune responses to ETEC H10407 in a challenge model. **The Walter Reed National Military Medical Center, Rockville Pike Bethesda, Maryland, USA, March 2nd 2012.**

ADDITIONAL INFORMATION

INNOVATION

1. Diagnostic assay platform “RLDT” for infectious disease, appropriate for resource-constrained settings (JHTV C16784)
2. Rapid test for the detection of cholera in the environment.
3. Sample sparing Multiplex ELISA for ETEC antigens.
4. Multiplex assay for detecting cytokines in fecal samples.

PERSONAL STATEMENT OF RESEARCH

My research focuses on strategies to reduce morbidity and mortality from infectious diseases. My research includes i) studying the epidemiology of enteric pathogens, immunity from natural infections, and impact on health among children in low and middle-income countries ii) developing, evaluating, and implementing new diagnostic tools for infectious diseases appropriate for resource-poor settings iii) delineating the role of environment and climate change to understand the occurrence and transmission of pathogens and antimicrobial resistance iv) studying vaccine and disease immunology and developing strategies for improved enteric vaccines; v) evaluating candidate enteric vaccines safety, immunogenicity and efficacy using experimental challenge models in humans. vi) study host factors, including gut microbiome, associated with the severity of the clinical outcome of infectious diseases and vaccine efficacy.

KEYWORDS

Diarrhea, infectious disease, tropical diseases, diagnostics, vaccine, immunology, epidemiology, microbiome, ETEC, Shigella, Campylobacter, tuberculosis, host factors.