

ANKUR MUTREJA

Date of birth: February 11, 1986;

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Summary: I am a trained genome scientist, microbiologist, molecular biologist and bioinformatician currently working at the Merck and Wellcome Trust funded Hilleman Laboratories as a Project Lead for an Enterotoxigenic *Escherichia coli* vaccine program. My scientific training in both academia and industry and experience in article and grant writing will benefit any research position. I have always enjoyed the teaching and training aspects of the jobs I have held. As a keen communicator of science to the public, I have presented my work at numerous conferences and meetings as an invited or selected speaker. I have experience working both in the United Kingdom and India.

EDUCATION

- **PhD Molecular Biology**, Wellcome Trust Sanger Institute (WTSI), University of Cambridge (Oct'09-Sep'13)
 - **Project:** The Origins and Evolution of *Vibrio cholerae* O1 El Tor
 - Invited speaker at the US-Japan Cholera meeting, 2013
 - Invited speaker at the US-Japan Cholera meeting, 2011
 - Invited speaker at ICDDR, Bangladesh, 2011
 - Work orally presented at prestigious ASM, SGM, eSCAMPS and SymBLS conferences
 - Visited WHO cholera surveillance sites in Bangladesh and India
 - Trained students and scientists in pathogen genomics
 - My research was a part of global collaboration with the organizations in both developed and developing nations
 - **Techniques learnt:** Genomic sequencing, phylogenetic analysis, molecular epidemiology, bioinformatics analysis for outbreak and antibiotic resistance typing/tracking
- **MSc Industrial and Commercial Biotechnology**, Newcastle University (2007-2008)
 - **Result:** Masters with Distinction
 - **Award:** Best student of the year - Annual Helena Biosciences Prize Winner
 - **Modules (Grades):** Biodiversity & Phylogeny (A), Bioinformatics (A), Bioremediation (A), Commercialization of Technology (A), Gene Technology (A), Genetic Modification & Cloning of Animals (A), Genetically Modified Organisms: Food and Agriculture (A), Microbial & Molecular Pharming (A), Modelling and Control in Bioprocess Systems (A) Molecular Ecology (A) and Research Project (A)
 - **Project:** Culture-independent approaches to detect actinomycete diversity in Atacama Desert soils
 - Determined the diversity of actinomycetes in Atacama Desert soil samples and applied culture-independent methods for selective isolation of major populations of actinomycetes.
 - Screened representative novel actinomycetes for polyketide synthase (PKS) and non-ribosomal peptide synthase (NRPS) genes for antibiotic biosynthesis

- Derived a new procedure for the direct isolation of community DNA from hyper arid soils and identification of novel actinomycetes containing new PKS and NRPS genes
 - **Techniques learnt:** Isolation and culturing of microorganisms, biochemical testing, gene cloning, PCR, small-scale fermentation setups, 16S rRNA gene sequencing and DGGE (Denaturation gradient gel electrophoresis)
- **BSc Microbiology**, SSN College, University of Delhi, India (2004-2007)
 - **Result:** First Class, Honours
 - **Modules (Grades):** Biochemistry (A), Biostatistics (A), Food and Dairy Microbiology (A), Immunology (A), Industrial Microbiology (A), Medical Microbiology (A), Microbial Physiology (A), Plant Pathology (A), rDNA Technology & Biotechnology (A) and Virology (A)
 - **Techniques learnt:** Light Microscopy, ELISA (Enzyme linked immune sorbent assay) and Electrophoresis and Chromatography (TLC)

WORK EXPERIENCE

- **Scientist (Project Lead)** at MSD-Wellcome Trust Hilleman Labs (Feb'15-present)
 - Formulating a novel vaccine against the ETEC for broadest possible coverage
 - Setting up a molecular biology lab
 - Designing the overall project strategy and conducting experiments
 - Training the team members for wet lab and *in silico* work
- **Experienced Researcher (Academia-Industry Bridging Fellow)** at the Novartis Vaccine Institute for Global Health (NVGH), Siena, Italy (Oct'13-Dec'14)
 - Conducting research for the vaccine development against Group A Streptococcus (GAS)
 - Visiting worker at the Wellcome Trust Sanger Institute
 - Invited Speaker at the British Society for Genetic Medicine (BSGM) meeting, Liverpool, 2014
- **Visiting Scientist** at the Wellcome Trust Sanger Institute, Cambridge, UK (Oct'13-present)
 - Remote bioinformatics analysis
 - Working and liaising on *V. cholerae* and *C.difficile* projects
- **Staff Scientist** at the Microbial Resources Laboratory, Newcastle University (Sep'08-Aug'09)
 - Conducted research on novel antibiotic producing actinomycetes
 - Taught and supervised undergraduate students
- **Intern** at Food Quality testing unit of ITC group of Hotels (2 months program, 2005)
- **Reviewer** for PLoS One and Cambridge University Press (Oct'10-present)
- **Corporate Sponsorship Manager** of Cambridge Hands on Science (Dec'10-Nov'11)
 - Secured significant sponsorship for the public science display events
- **Interpreter** at ITL (Interpreting Translation Line), Newcastle (Oct'07-Aug'09)
 - Did real time Punjabi to English interpretation at several court hearings
- **Staff Trainer and Trainee Manager** at McDonald's, Newcastle (Dec'07-Aug'09)
 - Awarded 'Employee of the Month' and 'Staff Member of the Quarter'

PUBLICATIONS

- **Mutreja A.** et al. (2011). Evidence for several waves of global transmission in the seventh cholera pandemic. *Nature* **477**: 462-5.
- **Mutreja A.** (2012). Bacterial frequent flyers. *Nat Rev Microbiol.* **10(11)**: 734.

- **Mutreja A.** et al. (2013). A study on the geophylogeny of clinical and environmental *Vibrio cholerae* in Kenya. *PLoS One* **8(9)**: e74829.
- **Mutreja A.** et al. (2014). Genomic epidemiology of *Vibrio cholerae* O1 associated with floods, Pakistan, 2010. *EID* **20(1)**: 13-20.
- Knetsch CW, Connor TR, **Mutreja A.** et al. (2014). Whole genome sequencing reveals potential spread of *Clostridium difficile* between humans and farm animals in the Netherlands, 2002 to 2011. *Euro Surveill.* **19(45)**:20954.
- Abd El Ghany M, Chander J, **Mutreja A.** et al. (2014). The population structure of *Vibrio cholerae* from the Chandigarh Region of Northern India. *PLoS Negl Trop Dis.* **8(7)**:e2981.
- Rapa RA, Islam A, Monahan LG, **Mutreja A.** et al. (2014). A genomic island integrated into *recA* of *Vibrio cholerae* contains a divergent *recA* and provides multi-pathway protection from DNA damage. *Environ Microbiol.* **17(4)**:1090-102.
- Rebaudet S, Mengel MA, Koivogui L, Moore S, **Mutreja A.** et al. (2014). Deciphering the origin of the 2012 cholera epidemic in Guinea by integrating epidemiological and molecular analyses. *PLoS Negl Trop Dis.* **8(6)**:e2898.
- Moore S, Thomson N, **Mutreja A.** et al. (2014). Widespread epidemic cholera caused by a restricted subset of *Vibrio cholerae* clones. *Clin Microbiol Infect.* **20(5)**:373-9.
- Davies M, **Mutreja A.** et al. (2015). Whole genome analysis of global GAS and diversity of most promising GAS vaccine candidates (in preparation)
- Miwanda B, Moore S, Muyembe JJ, Nguefack-Tsague G, Kabangwa IK, Ndjakani DY, **Mutreja A.** et al. (2015). Antimicrobial Drug Resistance of *Vibrio cholerae*, Democratic Republic of the Congo. *Emerg Infect Dis.* **21(5)**:847-51.
- **Mutreja A.** Thomson NR. et al. Seventh pandemic cholera in Latin America has different dynamics. (manuscript in preparation)
- MacLennan CA, **Mutreja A** and Dougan G, New approaches for needed vaccines – Bacteria. *The Vaccine Book* edited by Paul H Lambert and Barry R Bloom (chapter in preparation)

AWARDS AND ESTEEM INDICATORS

- Fully funded **Wellcome Trust Scholar** at WTSI (2009-2013)
- **Marie Curie Fellow** at NVGH (Oct'13-Dec'14)
- **Winner** of Cambridge University Entrepreneur 1K Challenge for 'Labbridge' (2010)
- **National Finalist** of Bright Futures & PwC Business Champions for 'Labbridge' (2010-2011)
- **Representative** on the Graduate Committee, Wellcome Trust Sanger Institute (2010-2012)
- **Volley-ball Captain**, Corpus Chritsi College (2011-2014)
- **Cricketer**, JCR and MCR, Corpus Chritsi College, University of Cambridge (2009-2014)
- **Representative** on the Student Staff Committee, Newcastle University (2007-2008)
- **President** of 'Sookshma', The Society of Microbiology, SSN College (2006-2007)
- **House Prefect** during A levels and **Top student** of the school at O level

LANGUAGES

Fluent in English, Hindi and Punjabi and know some Italian

REFEREES

Information provided in Chris6 form