

Neveda Naz, PhD

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Summary

A dedicated microbiologist with over twelve years of experience working in academic and medical laboratories, I have developed a range of skills that include conducting collaborative and independent research using microbiological, molecular biology and biochemistry techniques. Throughout my graduate studies, I taught on MSc level courses within my institutions, as well as privately tutored external students in biology, physics, earth science, and chemistry. I aspire to pursue a career in astrobiology and am particularly interested in the conditions of the early Earth when life arose, microbial evolution, ecology, diversity, microbial survival in extreme environments and the impact this will have on the nature of life beyond our planet.

Education

Certificates	FutureLearn: Gravity: From The Big Bang to Black Holes	[2015]
	HarvardX edX: Super-Earths and Life	[2015]
	Coursera: Astrobiology and the Search for Extraterrestrial Life	[2014]
PhD	London School of Hygiene and Tropical Medicine, London, UK	[2009-2015]
	Research topic: Reinvestigation into the mechanisms of <i>Campylobacter jejuni</i> invasion of intestinal epithelial cells (IECs)	
MSc	Manchester University, Manchester, UK	[2002-2004]
	Medical and Molecular Microbiology	
BSc (Hons)	Manchester Metropolitan University, Manchester, UK	[1999-2002]
	Biomedical Science	

Work experience

London School of Hygiene and Tropical Medicine, UK [Oct 2008- March 2015]
PhD Research Degree Student

- Construction of single and double knockout mutant strains of *C. jejuni* using PCR and IPCR.
- Characterization of mutant strains using growth kinetics, autoagglutination and motility assays.
- Measurement of bacterial cell attachment and invasion of Caco-2 and T84 IECs between *C. jejuni* strains using an adhesion and invasion assay.
- Measurement of the innate immune response from IECs by cytokine release using ELISAs as well as cell damage using a cytotoxicity assay to detect levels of lactate dehydrogenase.
- Extraction of outer membrane vesicles (OMVs) from wild type and

mutant *C. jejuni* strains.

- Quantification of OMVs using Qubit protein assay kits.
- Assisted with the development of a new in vitro model of infection permitting the co-culture of bacteria and host cells under different medium and gas conditions, the Vertical Diffusion Chamber (VDC). Using the VDC to co-culture *C. jejuni* with IECs under microaerobic conditions resulted in dramatic changes in the host-pathogen interactions observed. This model provided an improved mimic of the in vivo situation encountered by *C. jejuni* in the human intestinal lumen.
- Presentation of data collected in weekly scientific meetings and academic conferences.

London School of Hygiene and Tropical Medicine, UK

[July 2009- June 2014]

Student demonstrator/Exam invigilator/Exam marker/Scribe

- Prepared and set up the laboratories each day for the planned teaching and demonstrating on the MSc "Molecular Biology and Recombinant DNA Technologies" course.
- Worked closely with the examinations department; provided invigilation during exams; Worked as an exam scribe for students with physical disabilities; Marked examinations.

Medilab, Manchester, UK

[Dec 2007- Oct 2008]

Laboratory Assistant

- Provided pathology services to major medical laboratories.
- Conducted daily STI profiles to include HIV 1 & 2, Syphilis, Chlamydia, Gonorrhoea, Hepatitis B, and Hepatitis C antibodies and antigen.
- Conducted immunity tests (e.g. Rubella IgG and Varicella Zoster IgG antibodies.)

National Blood Service, Manchester, UK

[July 2007- Dec 2007]

Platelet Process Improvement Project

- In charge of bacterial sampling and testing of platelets for pathogens including CJD, Syphilis, and Hepatitis using the BacT/ALERT® system to enhance the safety of blood products for the use of patients.

Hope Hospital, Manchester, UK

[Sept 2006-June 2007]

Medical Laboratory Assistant

- Provided support to senior biomedical scientists, pathologists, clinical scientists and medical staff.
- Prepared chemical and biological solutions, Labeled, sorted, and analyzed tissue and fluid samples.

Syngenta CTL, Macclesfield, UK

[Dec 2005-Oct 2006]

Clinical scientist

- Responsible for the preparation, processing and analysis of clinical pathology samples for chemistry, hematology, urinalysis and microbiology according to study/experimental protocols to support regulatory and research studies within CTL.
- Performed routine maintenance procedures and trouble-shooting on a variety of clinical pathology analyzers. Responsible for data entry and QC checking.
- Collaborated with study management staff and statisticians to advise on the appropriateness of proposed experimental protocols.

University Of Manchester

[March 2004-Dec 2005]

Laboratory Technician

- Involved in research projects in the fields of molecular biology, epidemiology, and infectious diseases.
 - Supervised MSc students.
 - Responsible for the recording of experimental data and the preparation of Standard Operating Procedures.
 - Maintained all Risk Assessments and health and safety records.
 - Maintained bacterial cultures and ensured laboratory stocks were replenished.
 - Responsible for testing blood plasma for *Bordetella pertussis* and inputting details onto centralized database as part of the *Pertussis* reference laboratory service.
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Skills

Molecular Biology Skills

- DNA & RNA Isolation, purification & quantification (Nanodrop ND-1000 & Qubit)
- Oligonucleotide design
 - Polymerase Chain Reaction, qPCR, RTPCR, IPCR
 - DNA agarose gel Electrophoresis
 - Molecular Cloning & Genetic manipulation of bacterial genomes
 - DNA Restriction & Digestion Techniques
 - Southern hybridization
 - Western blot
- Protein expression/purification
- eGFP tagging
- Construction of mutants
- Construction of complements
- Construction of DNA libraries
- Transformation of bacteria by electroporation
- DNA Sequencing & analysis
- Gene Expression analysis
- Molecular 16S rRNA phylogenetic analysis
- Proteomics
- Bioassay
- ELISA/ cytokine studies

Microbiology & Biochemistry Skills

- Isolated and maintained cultures of bacteria including *Campylobacter jejuni*, *E. coli*, *Bacillus*, *Pseudomonas*, *Corynebacterium*, *Staphylococcus*, *Streptococcus* species and other microorganisms.
- Growth & detection of microaerophilic & anaerobic bacteria.
- Identified, enumerated and classified microorganisms found in H₂O/soil and human specimens.
- Microfiltration
- Spectro Photometric Techniques
- Performed staining & microscopic examination of microorganisms to determine morphological and physiological characteristics.
- Gram Staining/Negative staining/Acid fast and Endospore staining techniques
- Bacterial Biofilm studies
- Antibiotic sensitivity testing and API-testing for identification of various microorganisms.
- Immunofluorescent Staining of IECs
- Anti-*C.jejuni* antibody Staining (to distinguish between adhered and invaded bacteria)
- Tissue culture storage and maintenance
- Infection studies of Human and Animal Tissue Culture
- Electron, confocal and fluorescent Microscopy incl: preparation and observation for studies of (Live/dead bacteria)
- Highly skilled in microbiology techniques, terminology, use of equipment, supplies, aseptic techniques and appropriate handling of pathogens.
- Sterilized bacteriology media and contaminated materials using the autoclave
- Aseptic and sterile technique
- Preparation of Standard Operating procedure documents.

IT Skills

- Microsoft Office, Artemis, Chromas, BLAST, NCBI gene and protein comparison software, STATA, Graphpad Prism, ClustalW2, Volocity, Endnote.

Professional References

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