



Dr. HUSSAINA BANU

FACULTY | BIOLOGY / HEALTH SCIENCES

SUMMARY

Adjunct Faculty – Health Sciences •
Abu Dhabi University • Al Ain & Abu
Dhabi • UAE • Sep 2019 Till date

- ✓ **Introduction to Public Health;**
Biostatistics; Epidemiology;
Environmental Science, Maternal
& Child Health
 - BSc Public Health
 - BSc Environmental Health & Safety

Visiting Faculty – Health Sciences •
Jumeira University • Dubai • UAE • Feb
to June 2021

- ✓ **Microbiology; & Organic**
Chemistry for Health Sciences
 - BSc Environmental Health Science

Senior Lecturer – Life Sciences • 10
years • Manipal University, Dubai, UAE

- ✓ University Teaching:
 - **Handled more than 15 courses of**
Biology & Biotechnology

- **Temp Biology Teacher – Institute of**
Applied Technology • Al Ain • UAE • Jan
to Feb 2020

Research Assistant • Jun – Nov 2021
• Higher Colleges of Technology

- **Research**
 - ✓ ResearchGate Score: 10.34
 - ✓ 7 publications
 - ✓ Citations 174; h-index: 5

IELTS ACADEMIC

Overall Band Score: 7.5

- CEFR C1 (Advanced)
- Completed Feb 2019



hussainamalkhan@gmail.com

EDUCATION

PhD Biomedical Science • 2016 (Equivalency under
process by MOE)

- Bharathidasan University, India
Folate conjugated Gold nanocomposite mediated
Hyperthermia: Approach for enhanced cancer
chemotherapy

■ **MPhil Biotechnology • 2005**

Bharathidasan University, India

■ **MSc Biochemistry • 2003**

University of Madras, India

■ **BSc Biochemistry • 2001**

University of Madras, India

University seventh rank holder

ADDITIONAL TRAININGS & SKILLS

Online Teaching – MS Teams, BlackBoard, Lockdown

- **Browser, Eklavia • 2020-21**
- **Statistical Package for Social Sciences (SPSS) • 2019**
- **Protein expression & Molecular techniques • 2019**
 - Madras Diabetic Research Foundation, India
- **Human Cell Culture Techniques • 2011**
 - Rajiv Gandhi Center for Biotechnology, India
- **Techniques of Nanotechnology • 2012**
 - Bharathidasan University, India
- **Molecular Biology Techniques • 2014-2016**
 - Manipal University, UAE
- **Paramedical science & technology • 1999-2000**
 - Bio-gene Diagnostics & Research Center, India
 - Voluntary health services, India
- **Plant Cell Culture Techniques • 2006**
 - University of Madras, India
- **Tools of Computational Biology • 1999-2006**
 - Bharathiar University, India



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SPECIALIZATION

- Health Sciences
- Applied Biology
- Biochemistry
- Biotechnology
- Computational Biology
- Environmental Science

BIOLOGY COURSES

- Foundation Biology
- Biotechnology
- Plant & Agricultural Biotechnology
- Environmental Biology
- Cell Biology
- Genetics
- Microbiology
- Anatomy & Physiology
- Histology
- Biochemistry
- Genomics & Proteomics
- Molecular Modeling
- Bioinformatics
- Enzymology
- Nanotechnology

HEALTH SCIENCE COURSES

- Biostatistics
- Epidemiology
- Microbiology
- Tissue Engineering
- Introduction to Public Health
- Organic chemistry for Health



ACADEMIC EXPERIENCE

- Adjunct Faculty • Abu Dhabi University – College of Health Sciences (Al Ain & Abu Dhabi Campus) • UAE• Sep 2019 Till date
- ✓ Biostatistics, Epidemiology, Environmental Science, Introduction to Public Health, Maternal & Child health
 - BSc Public Health
 - BSc Environmental Health & Safety
- Visiting Faculty • Jumeira University • UAE• Feb - June, 2021
- ✓ Microbiology; & Organic chemistry for Health Sciences
 - BSc Public Health
 - BSc Environmental Health & Safety
- Research Assistant• Higher Colleges of Technology• ADWC, UAE• Jun - Nov, 2021
- Temp Biology Teacher • Institute of Applied Technology• Al Ain, UAE• Jan - Feb, 2020
- Taught Biology & Health Sciences
- Senior Lecturer • Manipal University, Dubai • 2007 – 2017
- ✓ Handled about 15 different courses of Biology, Biotechnology & Health
 - BSc Biotechnology
 - MSc Medical Biotechnology

ACADEMIC TRAININGS

- Online Teaching & Assessment - MS Teams/Lockdown browser • 2020
- BlackBoard – Learning Management System & H5P • 2019
- Abu Dhabi University, UAE
- Basic Arabic Learning Program • 2017
- Learning Management System – e-learning • 2016
- SmartBoard Techniques • 2016
- Outcome based learning • 2015
- Classroom teaching effectiveness • 2014
- Pedagogic & Personal Effectiveness • 2013
- Effective teaching skills • 2009
- Manipal University, UAE



RESEARCH AWARDS

- **Second Prize • Fourth UAE National Genetic Diseases Conference • 2013**

■ Sheriff A, Edgar A, Sethi DK, Rayees N, Renuka N, **Banu H.** Gold Nanocomposites: A novel approach towards breast cancer therapy, Dubai

- **Fifth Prize • Fourth UAE National Genetic Diseases Conference • 2013**

■ Chokly A, Ganesh M, Narayanan K, Khan SS, Renuka N, **Banu H.** Structural insight into p53 – Bcl2 protein complex in breast cancers through molecular dynamics simulation and docking studies using wild type as well as top three p53 missense mutants of breast cancer and Bcl2 computational models, Dubai.

INDUSTRIAL EXPERIENCE

- **Scientific Writing – Project Associate • Lapiz Digital Services, India • 2004 – 2006**
- Ensuring the quality of electronic scientific abstracts of Pharma-Chemistry and Pharma-Biology patents for a UK-based client for a team of about 15 members.
- **Scientific Patent Abstractor • Lapiz Digital Services, India • 2003 – 2004**
- Writing electronic scientific abstracts of Pharma-Chemistry and Pharma-Biology patents.

RESEARCH PUBLICATIONS

- **Springer • Biol Trace Elem Res • Impact factor: 2.43 • 2018**
Banu H, Renuka N, Faheem SM, Ismail R, Singh V, Saadatmand Z, Khan SS, Narayanan K, Raheem A, Vasanthakumar G, Premkumar K. Green synthesized gold and silver nanoparticles using date palm pollen extract induces apoptosis and regulates p53 and Bcl-2 expression in human breast adenocarcinoma cells. doi: 10.1007/s12011-018-1287-0.
- **Elsevier • Comput Biol Chem • Impact factor: 1.850 • 2018**
Banu H, MC Joseph, MN Nisar. In-silico approach to investigate death domains associated with nano-particle-mediated cellular responses. 75:11-23.
- **Elsevier • J Photochem Photobiol B • Impact factor: 4.383 • 2015**



First Prize • Third Ras-Al-Khaimah Medical & Health Sciences University Scientific Conference • 2012

- Nasab R, D'Silva J, George E, Ghaddar Z, Kedhari M, **Banu H**, Ansari Z, Renuka N, Vasanthakumar G, Matar M. Altered α Hb structure and its unstable complex formation with AHSP increases the formation of Reactive Oxygen Species in Hemoglobin Fontainebleau [$\alpha 21(B2)Ala \rightarrow Pro$]: Molecular dynamics simulation and docking studies

OTHER AWARDS

- **Second Prize • Dubai RTA's Innovation Journey • 2016**
- **Banu H**, Popy Akther, Jumana Abdul Samad, Idea for eco-friendly and safe transportation system for future – Car Metro.
- **First Prize • Essay on biography of India • 2001**
- **First Prize • Islamic: University essay writing • 2000 Second Prize • Inter-departmental**

Banu H, Sethi DK, Edgar A, Sheriff A, Rayees N, Renuka N, Faheem SM, Premkumar K, Vasanthakumar G. Doxorubicin

Loaded Polymeric Gold Nanoparticles Targeted To Human Folate Receptor Upon Hyperthermia Potentiates Chemotherapy In Breast Cancers. 149:116-28.

■ Springer • Plasmonics • Impact factor: 2.335 • 2014

Banu H, Stanley B, Faheem SM, Renuka N, Premkumar K, Vasanthakumar G. Thermal Chemosensitization of Breast Cancer Cells to Cyclophosphamide Treatment Using Folate Receptor Targeted Gold Nanoparticles 9 (6), 1341-1349.

■ Austin • J Biotechnol Bioeng • Open Access • 2014

Faheem SM, **Banu H**, Gold Nanoparticles in Cancer Diagnosis and Treatment: A Review. 1(6):5

■ Elsevier • Biochimie • Impact factor: 3.413 • 2011

Banu H, Renuka N, Vasanthakumar G. Reduced catalytic activity of human CYP2C9 natural alleles for gliclazide: Molecular dynamics simulation and docking studies. 93: 1028-1036.

■ In preparation • 2021

Renuka N, **Banu H**, Vasanthakumar G. Docking studies on reduced metabolism of Losartan in Human CYP2C9 natural Alleles.

Perera HJ, **Banu H**, Recent developments in composite reinforcement using date palm fibers for improved performance through physical and chemical modifications Perera HJ, Goyal A, **Banu H**, Saeed AlKhazraji. Low Cost Fluorinated Diatomaceous Earth Polyurethane Foam for the Absorption of Oil

Perera HJ, **Banu H**, Superhydrophobic diatomaceous earth for water repellent surfaces – A review



Creative Writing Competition • 2000

- **Second Prize • Islamic: University essay writing • 1999**
- **First Prize • Islamic: University essay writing • 1998**

PROFESSIONAL MENTORING

■ Post-graduates

Nanotechnology & Cancer • 2017 (1)
Nanotechnology & Cancer • 2016 (1)
Nanotechnology & Cancer • 2015 (2)
Nanotechnology & Cancer • 2014 (3)
Nanotechnology & Cancer • 2013 (4)

■ Under-graduates

Nanotechnology & Cancer • 2017 (4)
Computational Biology • 2014 (1)
Computational Biology • 2010 (1)

PROFESSIONAL SERVICE AS PEER REVIEWER

- **Elsevier • Life Sciences**
- **Elsevier • Photochemistry & Photobiology B: Biology**

CONFERENCE PRESENTATION

Fifth UAE Undergraduate Student Research Competition • 2017

Parvez N, Panesar M, Kedari M, Khan MA, **Banu H**, Hussain A. Sulforophane induces apoptosis in cervical cancer cell lines, Abu Dhabi

■ Current Trends in Biotechnology, Manipal University • 2016

Banu H. Conjugated gold nanoparticles for enhanced drug delivery, Dubai

■ Current Trends in Biotechnology, Manipal University • 2015

Faheem SM, **Banu H**. Nanoparticles for cancer treatment, Dubai

■ Middle East Molecular Biology Congress & Exhibition • 2014

Banu H, Renuka N, Faheem SM, Vasanthkumar G, Khan SS, Ismail R, Saadatmand N, Singh V. In vitro cytotoxicity testing and molecular analysis of modulation of gene expression of pro-apoptotic gene p53 and anti-apoptotic gene BCL2 on cancer

cell lines after treatment with green synthesized metal nanoparticles, Cancer genomics session, Dubai

■ Second UAE Undergraduate Student Research Competition • 2014

Raheem A, Narayanan K, **Banu H**, Renuka N. Rapid One-Pot Green Synthesis of Stable Silver and Gold Nanoparticles using Bioflavanoids of Date Palm Pollen Extract and in vitro Cytotoxicity Study for Breast Cancer Treatment, Abu Dhabi

■ Second UAE Undergraduate Student Research Competition • 2014

Khan SS, Hashim S, Puttekkadan SA, Renuka N, **Banu H**, Enhancing The Bioavailability Of Anticancer Compounds From Medicinal Desert Plants In Cancer Cells Using Nanotechnology, Abu Dhabi



- Elsevier • Ethanopharmacology
- Elsevier • Materials Science & Engineering C
- Elsevier • Biological Trace Element Research
- SpringerLink • 3Biotech

MEMBERSHIP

- UNESCO – Organization for Women in Science for the Developing World (OWSD)

PROFESSIONAL SERVICE AS JUDGE

- Fifth UAE Undergraduate Student Research Competition • Public Health • Abu Dhabi • 2017
- 24th National Children's Science Congress • Dubai • 2016
- 22nd National Children's Science Congress • Dubai • 2014
- Science India Forum • 2014

■ Fourth UAE National Genetic Disease Conference • 2013

Sheriff A, Edgar A, Sethi DK, Rayees N, Renuka N, Faheem SM, **Banu H**. Gold Nanocomposites: A novel approach towards breast cancer therapy, Dubai

■ Fourth UAE National Genetic Disease Conference • 2013

Chokly A, Ganesh M, Narayanan K, Khan SS, Renuka N, **Banu H**. Structural insight into p53 – BCL2 protein complex in breast cancers through molecular dynamics simulation and docking studies using wild type as well as top three p53 missense mutants of breast cancer and BCL2 computational models, Dubai

■ Third Ras Al Khaimah Medical and Health Sciences University Student Scientific Conference • 2012

Nasab R, D'Silva J, George E, Ghaddar Z, Kedhari M, **Banu H**, Ansari Z, Renuka N, Vasanthakumar G, Matar M. Altered α Hb structure and its unstable complex formation with AHSP increases the formation of Reactive Oxygen Species in Hemoglobin Fontainebleau [$\alpha 21$ (B2)Ala \rightarrow Pro]: Molecular dynamics simulation and docking studies, Dubai

CONFERENCE PROCEEDINGS & POSTER PRESENTATION

■ Proceedings of Bioinformatics & Computational Biology • 2011

Renuka N, **Banu H**, Vasanthakumar G. Altered gliclazide metabolic pathway and its implications on increased therapeutic response in CYP2C9*2: Molecular Dynamics and Simulation Studies. 2: 537-543.

■ Poster presented at Middle East Molecular Biology Congress



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VOLUNTEERING SERVICE

- Blood Donation Camp Coordinator • 2012-2017
- Health Awareness Camp Coordinator • 2012-2016
- Measles Vaccination Campaign Coordinator • 2016
- Diabetes Walkathon Coordinator • 2016
- Inter-school Science Competitions • 2012-2016

LANGUAGE PROFICIENCY

- English • Read, Write & Speak
- Arabic • Read
- Tamil • Read, Write & Speak
- Hindi • Read

PERSONAL INFORMATION

- DOB • 28 March, 1980
- Gender • Female
- Marital Status • Married
- Nationality • India
- Passport No • P3915191
- Expiry: 4 Oct, 2026
- Residence Visa – Spouse sponsorship

& Exhibition • 2014

Renuka N, **Banu H**, Vasanthakumar G, Khan SS, Ismail R, Narayanan K, Raheem A, Hashim S, Synthesis and characterization of metal nanoparticles using extracts of indigenous plants of UAE and delivery of anticancer bioflavonoids to MCF-7 breast cancer cell lines, Dubai

OTHER RESEARCHES

- Twelfth International Symposium on Microbial Ecology • 2008

Aarti A, **Banu H**, Kalyani G, Faheem SM, Khan MA. PCR based study on alkane degrading bacteria from UAE Environment, Australia

- Fourth UAE Undergraduate Student Research Competition • 2016

Banu H, Jumana AS, Naval PK, Popy A. Environmental Protection From Vehicular Air Pollutants Using Native Plants Of UAE & Using Plants As Ecological Bio-Indicators Of Air Quality, Abu Dhabi, UAE

- Second Forum for women in research • QUWA: Empowering women in research and innovation

Perera HJ, Banu H, Saeed AlKhazraji, Goyal A. Low cost fluorinated diatomaceous earth polyurethane foam for the adsorption of oil, University of Sharjah, Aug 26, 2021.

STATEMENT OF TEACHING

- Handled several subjects of Biology, Health Sciences & Computational Biology to University students in Dubai and Al Ain, UAE for more than twelve years.
- Academic trainings and long years of teaching experience prepares to be an effective teacher.



REFERENCES

■ **Dr. Renuka Seenivasan •
Higher Colleges of
Technology, UAE**

Faculty, Department of
Engineering,
Higher Colleges of Technology,
Abu Dhabi Men's College,
PO Box 25035, Abu Dhabi, UAE
Tel: +971-2-4451514
Mobile: 0504352446
Mail: renuseenivas@yahoo.co.in

■ **Dr. Helanka Perera •
Higher Colleges of
Technology, UAE**

Faculty, Maths & Natural
Sciences,
Abu Dhabi Women's College,
UAE
Mobile: 00971501607280
Mail: hperera@hct.ac.ae

■ **Dr. Arif Hussain • Professor &
Chairperson, Manipal University,
UAE**

School of Life Sciences,
Manipal University, Dubai,
UAE Mobile: 0556848720 Mail:
dr.arifhussain@yahoo.co.in

- Application oriented teaching skills, student-centered approach, and understanding & patience in class helps in building up a good rapport and harmonious relationship with students.
- Mentored and supervised students in both academics and research projects.
- Active in administrative duties and volunteering services at the department and university.
- Worked with students and colleagues from different ethnic backgrounds.
Excellent communication skills & familiarity in teaching students with modern media aids such as animations and other virtual aids. Also, trained in remote teaching with MS Teams and assessment tools such as Respondus Lockdown.

STATEMENT OF RESEARCH

- Active in scientific research in the area of Cancer Biology, Nanotechnology, Computational Biology & Environmental science.
- Primary goal is continue designing nanoparticle conjugates that provides enhanced drug delivery for the treatment of cancers and inflammatory diseases and reduce systemic toxicity of chemotherapeutic agents.
- Also, use computational biology as a tool to understand the molecular biological basis of diseases and disorders by studying the protein-protein interactions and protein-drug interactions.
- Encourage students to actively participate in academic research projects; present them in International Conferences and other platforms to create interest; and enable them to connect between concepts and their practical applications.

