Biodata

1. **Name**: **Dr. Feroz Khan**

2. **Designation**: Senior Principal Scientist

3. **Postal Address** Technology Dissemination & Computational Biology Division,
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4. **Date of Birth**: 30-06-1977

5. **Google Scholar Citation**:
https://scholar.google.co.in/citations?user=gNqEwYwAAAAJ&hl=en
Citations: 3860; h-index: 37; i10-index: 101

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6. **Educational Qualification**:

Degree	Institution/University	Subject Area	Year
Post-doc Research	Skaggs School of Pharmacy & Pharmaceutical Sciences, University of California, San Deigo (UCSD), CA, USA	Bioinformatics	2016-17
Ph.D.	U.P. Technical Univ., Lucknow (now AKTU)	Bioinformatics	2009
M.Tech.	U.P. Technical Univ., Lucknow (now AKTU)	Biotechnology	2003
M.Sc.	D.A.V. College, C.S.J.M. Univ., Kanpur	Botany (*Plant Breeding & Cytogenetics)	2000
B.Sc.	D.A.V. College, C.S.J.M. Univ., Kanpur	Botany, Zoology & Chemistry	1997

*Specialization

7. **Teaching & Research Experience**:

Duration	Institute/University	Designation
2020-Cont.	CSIR-Central Institute of Medicinal & Aromatic Plants (CIMAP), Lucknow	Senior Principal Scientist
2015-20	CSIR-Central Institute of Medicinal & Aromatic Plants (CIMAP), Lucknow	Principal Scientist
2011-15	CSIR-Central Institute of Medicinal & Aromatic Plants (CIMAP), Lucknow	Senior Scientist
2007-11	CSIR-Central Institute of Medicinal & Aromatic Plants, Lucknow	Scientist (Sci. C)
2004-07	Institute of Engg. & Tech. (IET), Uttar Pradesh Technical Univ., Lucknow	SRF (CSIR) & Ph.D. Scholar
2003-04	Institute of Engg. & Tech. (IET), Lucknow	Guest Lecturer (Biotechnology)
Apr-Jul 2001	Indian Institute of Pulses Research, Kanpur	SRF (ICAR)

8. Research specialization (Major scientific fields of interest) –
9. My research interests lie in the areas of Bioinformatics, Biomed-Informatics, Cheminformatics, and Computational Biology. I employ computational Artificial Intelligence (AI)/Machine Learning (ML) methods/algorithms to elucidate intertwined relationships between protein/gene/ESTs/RNA-seq sequences, structure-function relationships, genome/transcriptome data analysis, and plant secondary metabolites structure-activity relationship. The goal of my research is to obtain a new, comprehensive understanding of how structures and functions are coded in molecular sequences or chemical structures, and how functions of molecules are orchestrated in a cell.
10. Expertise in computational methods:
    - Lead identification/optimization: QSAR/QSPR/QSTR (Quantitative Structure-Activity/Property/Toxicity Relationship) modeling, Pharmacophore Modeling, and Virtual screening through different methods.
    - Target identification/binding affinity: Molecular Docking
    - Target binding stability: Molecular Dynamics Simulation (MDS) (GROMACS)
    - *In-silico* oral bioavailability/Drug-likeness/Alerts/Pharmacokinetics Assessment: Lipinski's Rule of Five (Pfizer), Ghose Rule (Amgen), Veber Rule (GSK), Egan Rule (Pharmacia), Muegge Rule (Bayer), PAINS & Brenk Alets, Lead-likeness, Synthetic accessibility, ADME analysis, Predictive metabolites and sites of metabolism, PK/PD analysis (dose-dependent), and Toxicity risk assessment for high doses and long-term use (Hepatotoxicity, Reproductive/developmental toxicity, Mutagenicity, Tumorogenicity, Allergenic skin sensitization (mice model), hERG K+ channel cardiac toxicity, Acute toxicity (LD50)).
    - *In-silico* Pharmacology- Systems pharmacology network analysis, Enrichment studies, Protein-protein network analysis, target mapping, off-target mapping.
    - Artificial Intelligence (AI)/Machine Learning (ML) methods: Reinforcement, Supervised (inductive), Semi-supervised, and Unsupervised. Supervised Classification methods used- Decision Tree, Bayesian Learning, Random Forest, Logistic Regression, kNN, ANN, SVM. Supervised Regression methods used- Simple linear, Multiple linear, and non-linear. Unsupervised clustering methods used- k-means clustering, Hierarchical clustering, and Dimensionality reduction (PCA).
    - RNA-Seq data analysis (transcriptome data assembly and functional annotation)
    - Statistical analysis- Descriptive, Hypothesis testing, ANOVA, Inferential, Multivariate analysis, Survival analysis, Non-parametric analysis, Power and sample size analysis, ROC curve, Fitting analysis (Linear/Curve).
    - Application tools and Database design & development.

Achievements:

- Ph.D. Students Guided: 9 (awarded), 2 (completed) & 4 (pursuing)
- UG/PG Trainees supervised for Project Dissertation: >100
- Delivered Invited Talk: >100 talks
- Attended International/National Conference/Symposia: >100
- Research articles published (as Corresponding Author): >130
- Book Chapters (as Corresponding Author): 04
- Research Projects completed (as PI/Co-PI): >20

- Patent (INDIAN): 01 (as Team Member)
- Attended Workshops & Training Programs: >50
- Organized Bioinformatics conference/seminar/workshop (as Convenor): >15

Member of Academic Societies/Institutes/University/Govt. Agency/Journals:

- Member, Project Evaluation Committee, Environmental Science, UPCST, Lucknow
- Executive Council Member, Bioinformatics & Drug Discovery Society (BIDDS), Alagappa University, Karaikudi, Tamil Nadu, India (since Feb.2020)
- Member, RDC, Biotechnology & Bioinformatics, Dr. APJ Abdul Kalam Technical University (AKTU), Lucknow
- Board of Studies (BOS) member, Biotechnology Dept., Institute of Engg. & Tech., Lucknow
- Faculty of Bioinformatics, JNU and AcSIR Ph.D program, CSIR-CIMAP, Lucknow
- Member, The Society of Biological Chemists (SBC), India, Bangalore. (Membership no.2667)
- Editorial Board member, Journal of Medicinal & Aromatic Plant Sciences (JMAPS), CSIR-CIMAP, Lucknow, India
- Advisory board member, Bioinformatics, WebMed Central open journals, UK
- Guest Editor, Current Topics in Medicinal Chemistry (CTMC) journal, Bentham Science Publishers, UAE (IF: 3.5) 2023