MIHIR ANAND

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Education

Integrated Dual Degree (Bachelors and Masters) in Biochemical Engineering and Biotechnology
Indian Institute of Technology (BHU), Varanasi, India 📅 2016-2021   CGPA- 7.90/10

Senior secondary school   Secondary school
Dr. K.K Mandal college, India   **DAV Public School, Ara, India**
📅 2014-2016   Percentage- 73.2/100   📅 2016-2021   CGPA- 10/10

Research Experience

Australian National University, Australia || Prof. Colin Jackson	April 2020- Present
Indian Institute of Technology (BHU),Varanasi || Prof. V.K Dubey	

Research School of Chemistry   *Remote Internship* cum   *Joint Master's Project*

- Prediction of resistance mutations in the SARS-CoV-2 RNA dependent RNA Polymerase (RdRp) to prolong the clinical usefulness of Remdisivir and Favipiravir and aim for second generation of drugs
- Did *in silico* analysis of RdRp domain of SARS-CoV-2 and generated stable mutations in the binding domain and it's hotspot of Remdisivir and favipiravir using Schrodinger's Package (Glide, Desmond, Bioluminate)
- Further planned for experimental validation of predicted resistance mutations in the wet laboratory

The University of Edinburgh, UK || Dr Leonardo Rios Solis	June 2020-Present

Centre of Systems and Synthetic Biology   *Remote Internship*

- Reviewed the bottlenecks in automating different available CRISPR based diagnostics for SARS-CoV-2 and writing a **review article on it as second Author** and will be submitted soon
- Automating CRISPR-Cas-12a based test with target to make it high-throughput with minimum no of Opentron OT-2 robots and my role is to write Python protocol to automate OT-2 robots

Chang Gung University, Taiwan || Prof. Chi Hsien Liu	May-July 2019 (2 months)

Department of Chemical and Materials Engineering   *Visiting Research Internship*

- Worked on preparation of Curcumin loaded layer by layer nanoemulsion, did its various physiochemical characterization and calculated its topical drug delivery in SIF system (Simulated Intestinal Fluid)
- Did various wet lab characterisations of emulsion like DPPH assays, chelating assays, drug penetration, entrapment efficiency. Used HPLC, Zeta Sizer, Transmission Electron Microscope, FTIR, Nanodrop spectrophotometer, Surface tension and contact angle, Viscometer, conductivity meter
- Learned cell culture in cell culture room and worked on animal models (mouse) for bioavailability assays

Indian Institute of Technology (BHU), Varanasi || Prof. S.K Srivastava	Aug'18-Nov'19

School of Biochemical Engineering *Undergraduate Project*

- Worked on production of beta-glucosidase from Aspergillus wentii, optimize the activity of the crude and purified enzyme, did various biochemical characterizations of beta-glucosidase like substrate specifity etc
- Explored industrial products developed using beta-glucosidase and its scaleup production using bioreactors

Indian Institute of Technology, Guwahati, India || Prof. Arun Goyal	May-July 2019 (2 months)

Department of Bioscience's and Bioengineering   *Visiting Research Internship*

- Worked on *in silco* Protein sequence BLAST, Phylogenetics tree*, structural modelling, molecular docking, MD simulation of *Ps*GH11F &*Ps*GH43 from *pseudopedobacter saltans*
- Learned various molecular biology tools and did transformation, expression, protein purification, PCR and did biochemical characterization of BoGH43 xylanase from *bacterio ovatus*

Industrial Experience and Workshops

Aranca: Global Research and Analytics Firm (Consultancy)	December 2019 (1 month)

Technology Research and Advisory Team *Research Consultant (Healthcare and Medicine)*
- Consulted on a live project in the area of research instrumentation by collecting data from secondary resources(Internet and Databases) and analyze it using Microsoft Excel and connect Scientist directly
- was directly involved in conversation with USA based client and did 50% progress on the project in a month

University of California, San Diego Jacob's School of Engineering	June-August'20(8 Weeks)

ZOOM Research Experience for Undergraduate (REU)
- Selected to participate in UCSD ZOOM REU to learn about research and career paths that follow an undergraduate degree through different workshops
- Attended 11 research talks by program faculty, 8 research skill workshops on research ethics, library resources, and experimental design and networking and community building sessions

Publications/Presentations

Formosa Conference, Department of Chemical and Materials Engineering, Chang Gung University, Taiwan

- Presented a poster entitled ''Development of layer-by-layer nanoemulsion for topical drug delivery'' at a prestigious national conference   14 July 2019

Skills

Programming Languages	Python	SQL	MATLAB
Computational Skills	Sim Biology, Schrodinger's Package(DESMOND, Bioluminate, Glide MODELLER, Chimera, PyMol, Auto dock, GROMACS, Phylogenetics, MySQL, Jupyter notebook		
Wet Laboratory Skills + Instruments	Protein purification, protein biochemical characterisation, different drug delivery assays, PCR, Gel electrophoresis, HPLC, Transmission electron microscopy (**TEM**), Zeta-sizer, FTIR		

Honours And Awards

Future Research Scholarship(FRT) at Australian National University	Postponed due to COVID-19

- Selected among 50 students from India to do 3 month summer internship at Australian National University, Australia but it is postponed due to pandemic travel ban

Taiwan Experience Exchange Program (TEEP), Taiwan	May-July'19

- Awarded scholarship to support a two month-long summer internship at Chang Gung University, Taiwan

Certified Courses
- Dynamical Modelling Methods for Systems Biology in **MATLAB** (Coursera Course)
- Healthcare IT: Challenges and Opportunities (Coursera Course)

Leadership Experience

Coverage Head-Kahiyatra'18, Technex'19, Centenary Celebrations'19 IIT(BHU)	Jan'18- Mar'19

- Led a team of 100+ members to cover videos of events that increased the marketing and publicity by more than 10% and increased the reach of the fest by 20% on all social media platforms

Public relation coordinator-FMC Weekend - Annual Digital Arts Festival IIT(BHU)	Jan'17-Nov'18

- Invited cinematographers, animators of Disney, and organized photography workshop by topphotographers which increased the participation by 50% in the fest

Extracurricular activities

Won several prizes as a part of Cinematography club of University	Aug'16-Mar'20

2nd Runner Up in 48 Hr Short Film Making Competition at Inter IIT Cult Meet 2017, IIT Kanpur. **2nd Runner up** in 51 hr Short Film Making Competition, 4th Position in online Short Film Making Competition and 5th Position in screenplay writing Competitions IIT Cult Meet 2018 at IIT Roorkee. (23 Teams)