

# Tanmoy Sarkar

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[https://github.com/elvenkingfeanor/my\\_cv](https://github.com/elvenkingfeanor/my_cv)

## Brief Profile

I am an analytical-minded Biotechnology post-grad with graduate level teaching experience, having 6+ years of STEM research background. I possess a keen attention to detail, an inclination to think outside the box, and a dedication to improve workplace competency through utmost dedication, research and perseverance. I am endowed with a wide variety of skill-sets ranging from **cell culture and molecular biology** to **data analysis**. I am adept in efficient communications required in either a laboratory or a classroom, in clinical or industrial settings. Ancillary interest in a variety of **programming languages and Linux tools** equates to ability for rapid multitasking and thorough reproducible job completion.

## Summary of Skills

Core Skills	<ul style="list-style-type: none"><li>• <b>Cell culture protocols</b> a) <i>Primary stem cell culture</i> – tissue isolation, stem cell enrichment, cryopreservation, FACS, immunostaining, MTT assay, b) <i>Secondary cell culture</i> – subculture, complete media formulation and serum handling, Trypan Blue staining, lysis, c) <i>Bacterial cultures</i> – broth media formulation, agar media plating, quantitation, lysis</li><li>• <b>Proteomics</b> SDS-PAGE, 2D-PAGE, ELISA, MALDI-TOF, HPLC, Western blotting, spot analysis</li><li>• <b>Genetic engineering</b> gene cloning, vector engineering, electroporation, qRT-PCR, cDNA, restriction mapping, epigenetic profiling</li><li>• <b>Microscopy</b> confocal microscopy, live-cell imaging, inverted microscopy, compound microscopy for histological, hematological and microbial studies.</li><li>• <b>Data visualisation</b> using R statistical programming language for a) <i>Correlation studies</i> – scatter plots, heatmaps, b) <i>Ranking studies</i> – bar graphs, spider plots, dendrogram plots, c) <i>Proportion studies</i> – pie charts, doughnut charts, grouped and stacked bar graphs</li><li>• <b>Statistical data analysis</b> t-tests, Chi-square tests, ANOVA analyses.</li><li>• <b>Biomedical communications</b> academic writing including bibliography management using BibTeX, proposal and grant writing, research and reporting, collaboration</li><li>• <b>Laboratory animal handling</b> <i>Rattus norvegicus</i> (laboratory rat) strains – Wistar, Sprague-Dawley</li><li>• <b>Clinical physiology</b> sphygmomanometry, phlebotomy, spirometry.</li><li>• <b>Clinical biochemistry</b> blood sugar, blood uric acid, serum urea estimations.</li><li>• <b>Bioinformatics strategies</b> BLAST, FASTA3, ClustalW</li><li>• <b>Biological instrumentation</b> BD FACScalibur, Roche LightCycler 480, Biorad Image Lab, Nanodrop</li></ul>
Technical skills	<ul style="list-style-type: none"><li>• <b>Programming languages</b> a) <i>Typesetting</i> – Groff <sup>1</sup>, LaTeX, Markdown, HTML, b) <i>Big data and data-base management</i> – R, SQL, c) <i>Basic scripting and automation</i> – Bash, Lua, Python</li><li>• <b>Git-based version control systems</b> git, diff, patch</li><li>• <b>Image editing and quantitation</b> ImageJ, PDQuest, Inkscape, GIMP, imagemagick</li><li>• <b>Linux sysadmin tools</b> vi, cron, ssh, sed, awk, grep, find, fdisk, systemd, ip, curl, wget, grub</li><li>• <b>Advanced MS-Office proficiencies</b> pivot table creation, batch operations</li><li>• <b>Advanced Web-based skills</b> OAuth token generation, XML feed generation, search engine optimization (SEO)</li></ul>
English Skills	Excellent verbal and written communication skills <sup>2</sup> , with a decent typing speed of 45WPM.
Key Strengths	A dependable, hard-working and self-motivated employee. Also an excellent and empathetic team player, who can easily instill trust and confidence in colleagues, and is a problem-solver to boot.

## Professional Experience

<sup>1</sup> This document was prepared in the vi text editor using groff typesetting language.

<sup>2</sup> Score of 098/120 in Test of English as a Foreign Language (TOEFL) Internet-Based Test (iBT), from August 2012.

2024 - 2024	<b>School of Engineering (SoE), Tezpur University</b> – Napaam, Assam <i>Guest Faculty</i> Elucidated the importance of biology and biochemical reactions to B.Tech students through: <ul style="list-style-type: none"> <li>• conveying the significance of biomolecules and their myriad manifestations</li> <li>• imparting the application of thermodynamic principles to biological systems</li> <li>• expounding the central role of enzymes in a diverse range of metabolic pathways</li> </ul> – and evaluate them as per NAAC and UGC guidelines.
2014 - 2021	<b>CSIR-Institute for Genomics &amp; Integrative Biology (IGIB)</b> – New Delhi <i>Research Fellow</i> Meticulously worked under the supervision of Dr. Sagarika Biswas to accomplish: <ul style="list-style-type: none"> <li>• viable cell culture laboratory setup and stem cell culture protocol standardization</li> <li>• RNA and protein studies on patient samples using cDNA libraries, RT-PCR, Western blotting and other gel-based experiments</li> <li>• utilized R, Python and Linux tools on proteomics data to produce – a) <i>data visualization charts</i> like scatter plots for correlation studies and pie charts for proportion studies, b) <i>statistical analyses</i> like t-tests and ANOVA.</li> <li>• undertook academic writing exercise involving LaTeX style sheets, including bibliography management using BibTeX, proposal and grant writings, collaborations and reports.</li> <li>• carried out animal handling and dissection in accordance with ethical committee procedures</li> <li>• additionally, arranged seminars, guided trainees, collected samples, and other laboratory related subsidiary works</li> </ul> – thesis titled <i>Cytokine-mediated modulation of stem cell behaviour in rheumatoid arthritis</i> .
2011 - 2012	<b>DBT-Centre for DNA Fingerprinting &amp; Diagnostics (CDFD)</b> – Hyderabad <i>Research Fellow</i> Worked under the guidance of Dr. Subhadeep Chatterjee to achieve: <ul style="list-style-type: none"> <li>• established and maintained broth- and agar-based bacterial cultures</li> <li>• studied gene of interest in the GenBank database and designed PCR vectors using the Primer3 tool</li> <li>• performed plasmid vector engineering via restriction mapping and transformed bacterial cells via electroporation</li> <li>• screened transformed bacterial colonies via replica plating and confirmed them via further PCR tests</li> </ul> – thesis titled <i>Probing plant-microbe interactions in Xanthomonas quorum sensing</i> .

## Awards & Achievements

2014	<b>CSIR-UGC National Eligibility Test (NET) for JRF &amp; LS</b> – CSIR Rank – <i>CSIR 064</i>
2013	<b>CSIR-UGC National Eligibility Test (NET) for JRF &amp; LS</b> – UGC Rank – <i>UGC 048</i>
2012	<b>Graduate Records Examination (GRE)</b> – ETS Percentile Rank – • <i>Verbal Reasoning</i> – 64 • <i>Quantitative Reasoning</i> – 82
2011	<b>Graduate Aptitude Test in Engineering (GATE)</b> – IIT Madras Rank – <i>515</i>
2010	<b>CSIR-UGC National Eligibility Test (NET) for JRF &amp; LS</b> – CSIR Rank – <i>CSIR 091</i>
2006	<b>DST-Kishore Vaigyanik Protsahan Yojana (KVPY) Fellowship</b> – IISc Bangalore <b>National Level Science Talent Search Examination (NSTSE)</b> – Unified Council India, Hyderabad Rank – <i>352</i>

## Publications & Posters

2020	Sarkar, A., Sharma, S., Agnihotri, P., <b>Sarkar, T.</b> , Kumari, P., Malhotra, R., Datta, B., Kumar, K., Biswas, S. <i>Synovial fluid cell proteomic analysis identifies upregulation of alpha-taxilin proteins in rheumatoid arthritis: a potential prognostic marker.</i> Journal of Immunology. DOI: <b>10.1155/2020/4897983</b>
2014	<b>38th All India Cell Biology Conference and International Symposium</b> on <i>Cellular Response to Drugs</i> – CSIR-Central Drug Research Institute (CDRI).

## Educational Background

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2016	<b>Senior Research Fellow</b> – University Grants Commission <i>CSIR-Institute of Genomics &amp; Integrative Biology, New Delhi</i>
2014	<b>Junior Research Fellow</b> – University Grants Commission <i>CSIR-Institute of Genomics &amp; Integrative Biology, New Delhi</i>
2011	<b>Junior Research Fellow</b> – Council for Scientific & Industrial Research <i>DBT-Centre for DNA Fingerprinting &amp; Diagnostics, Hyderabad</i>
2011	<b>Master of Science</b> – Utkal University, Bhubaneswar <i>PG Department of Biotechnology, Utkal University, Bhubaneswar</i>
2009	<b>Bachelor of Science with Honours</b> – University of Calcutta <i>erstwhile Presidency College, now Presidency University, Kolkata</i>

## References

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Prof. Partha P. Sahu	Professor & Dean, School of Engineering, Tezpur University, Napaam, Assam, INDIA. PIN — 784028. Email: <a href="mailto:deansoe@tezu.ernet.in">deansoe@tezu.ernet.in</a> Phone: +91-3712273501
Dr. Sagarika Biswas	Scientist 'G', CSIR-IGIB, Proteomics & Metabolomics in Rheumatoid Arthritis and Osteoarthritis lab, Room 311, North Campus, Mall Road, near Jubilee Hall, Delhi University campus, Delhi, INDIA. PIN – 110007. Email: <a href="mailto:sagarika.biswas@igib.res.in">sagarika.biswas@igib.res.in</a> Phone: +91-1127662581
Dr. Dakshayani Mahapatra	Assistant Professor (WBES), Dept. of Physiology, Government General Degree College, Mohanpur, Paschim Medinipur, WB, INDIA. PIN – 721436. Email: <a href="mailto:dakshayani.mahapatra@gmail.com">dakshayani.mahapatra@gmail.com</a> Phone: +91-9830655682