DIVYA DEODAS PRABHU

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EDUCATION

University of California, San Diego, USA **Sep 2023 – Aug 2025**
Master of Science in Bioengineering
Thesis: Integrating calcium dynamics and NAD(P)H metabolism to study β-cell dysfunction in Type 2 Diabetes (T2D)

University of Mumbai, India **Aug 2016 – Oct 2020**
Bachelor of Engineering in Biomedical

EXPERIENCE

Research Associate III – J. David Gladstone Institutes, San Francisco, USA **Oct 2025 – Present**

- Model frontotemporal dementia using patient iPSC-derived cell types spanning neuronal (NPCs, iNeurons) and immune (HPCs, iMGs, monocytes) lineages to dissect cell-type-specific contributions to neurodegeneration.
- Execute co-culture experiments pairing iPSC neurons with microglia and monocytes to quantify inflammatory activation, phagocytosis, and neuronal toxicity across C9orf72 and TDP-43 FTD variants.
- Operate robotic microscopy systems to capture multi-day time-lapse imaging of iPSC differentiation (NPCs → neurons, HPCs → microglia) and neuron-glia interactions in FTD models.
- Optimize protocols for iPSC maintenance, directed differentiation (cortical neurons, microglia), and primary cell integration (patient fibroblasts, blood-derived monocytes) to support disease modeling screens.

Research Associate – Kravets Lab, University of California, San Diego, USA **Apr 2024 – Aug 2025**

- Characterized beta-cell heterogeneity in Type 2 Diabetes using FLIM and calcium imaging across 20+ mouse samples, revealing distinct metabolic subpopulations linked to insulin secretion patterns.
- Mapped immune-islet interactions in Type 1 Diabetes using spatial transcriptomics and 4D confocal imaging, identifying 3 novel mechanisms of autoimmune destruction.
- Developed MATLAB/ImageJ pipelines to extract calcium oscillation dynamics from 50+ tissue slices, improving analysis accuracy by 80% and enabling high-throughput quantification of beta-cell activity.
- Standardized experimental workflows for islet isolation, staining, and IF imaging across transgenic mouse models and human islets, boosting reproducibility and data quality across multi-modal datasets.

Research Associate – Cheresh Lab, University of California, San Diego, USA **Jan 2024 – Mar 2024**

- Investigated tumor-stroma signaling in pancreatic cancer by analyzing LPAR4 and fibronectin expression via flow cytometry, western blotting, and gel electrophoresis, uncovering key regulators of ECM remodeling and metastasis.
- Designed and executed tumor–fibroblast co-culture assays with siRNA knockdowns and IF imaging, revealing novel fibroblast-mediated mechanisms driving tumor invasion and chemoresistance.
- Conducted in vivo studies using xenograft and transgenic mouse models; applied AFM and IHC to evaluate ECM stiffness and biomarker profiles, contributing data toward development of anti-stromal therapeutic strategies.
- Streamlined experimental workflows by integrating high-content imaging, transcriptomic profiling, and protein quantification tools, enhancing data reproducibility and accelerating project timelines by 30%.

Product Manager – Krishagni Solutions Private Limited, Mumbai, India **Jul 2020 – Aug 2023**

- Deployed 30+ LIMS/ELN integrations for oncology and metabolic disease research, reducing specimen tracking errors by 75% and improving regulatory compliance.
- Managed 20+ cross-functional projects integrating LIMS, ELN, and EDC tools, enhancing data quality, research reproducibility, and clinical workflow alignment.
- Led system design, testing, and feature validation cycles, contributing to key releases with minimal errors; authored 40+ technical documents and SOPs used globally as internal knowledge bases and user guides.
- Built and mentored a 4-member team; conducted 50+ client training sessions and implemented JIRA-based analytics dashboards, enabling real-time decision-making, reducing turnaround time, and driving adoption of lab informatics platforms.

SKILLS

- **Laboratory**: iPSC culture and differentiation, Flow cytometry, Live-cell imaging, Confocal microscopy, FLIM, Multiphoton imaging, Western blotting, ELISA, Immunofluorescence, Immunocytochemistry, CRISPRi, Viral transduction, Molecular cloning, PCR/qPCR, Islet isolation, Co-culture assays, High-content imaging, Robotic microscopy
- **Computational**: MATLAB, Python, R, ImageJ, Imaris, GraphPad Prism, Image analysis, Spatial transcriptomics analysis, Statistical analysis
- **Software & Tools**: Leica LAS X, BioTek Cytation Imager, JIRA, Atlassian Suite, LIMS/ELN systems, AutoCAD, SolidWorks
- **Project Management**: Workflow automation, Agile methodologies, Cross-functional team leadership, SOP development, Regulatory documentation