

# MANAV VANGA

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## PROFESSIONAL SUMMARY

- Research Associate with expertise in organoid culture, assay development, and quality control for advanced in vitro models.
- Skilled in generating reproducible liver and brain organoids from iPSCs, optimized for high-throughput applications.
- Experienced in production, validation, and quality control of pillar/perfusion plate platforms for drug discovery and disease modeling.
- Proficient in functional assays (viability, proliferation, hepatotoxicity) and co-culture systems for cancer and immune cell studies.
- Experienced in developing and standardizing SOPs to ensure reproducibility and regulatory compliance.
- Published researcher with peer-reviewed contributions on organoid-based platforms and assay systems.
- Collaborative team member with experience in academia–industry partnerships, advancing translational research and commercialization.
- Adept in applying molecular biology and biotechnology techniques to strengthen organoid research and assay validation pipelines.

## CORE COMPETENCIES

- Organoid Culture (Liver, Brain, Tumor Spheroids) & 3D Bioprinting Applications
- iPSC Differentiation & Co-culture Assays
- Molecular Biology: PCR, qPCR, ELISA, Immunofluorescence
- Phenotypic & Functional Assays (Viability, Proliferation, Hepatotoxicity)
- Imaging & Cytometry: Confocal Microscopy, Flow Cytometry, ImageJ
- Data Analysis & Statistics: GraphPad Prism, FlowJo
- Bioprocessing & Quality Control (Vaccine & Biologics Testing)
- SOP Development and Scale-Up for Organoid Platforms

## RESEARCH EXPERIENCE

### Research Associate | Bioprinting Laboratories Inc., TX | Jan 2024 – Present

- Support production and optimization of pillar/perfusion plates for liver and brain organoid culture.
- Establish assays for liver cancer spheroid–immune cell co-culture, enabling drug response studies.

- Oversee mass production and quality control to ensure scalability and reproducibility.
- Validate organoid platforms using phenotypic and functional assays.
- Prepare technical documentation and content to support commercialization efforts.

**Assistant Researcher | Bioprinting Lab, University of North Texas | Feb 2023 – Dec 2023**

- Generated reproducible human liver organoids from iPSCs using microarray 3D bioprinting.
- Performed molecular and functional analyses (immunofluorescence, ELISA, qPCR, viability assays).
- Optimized integrated plate platforms (micro-pillar/well, 36Pillar/Perfusion, 384-pillar).
- Contributed to publications on regenerative liver organoids and dynamic culture systems.

**Co-op Quality Control Specialist | Biological E Limited, India | Nov 2020 – Mar 2021**

- Conducted quality control tests for tetanus antitoxin and COVID-19 vaccines.
- Performed pH, conductivity, and toxicity assays to ensure vaccine safety compliance.
- Collaborated with senior scientists to support regulatory and GMP standards.

## EDUCATION

M.S., Biomedical Engineering | University of North Texas, USA | 2023 | GPA: 3.25/4.0

B.Tech., Biotechnology | K L University, India | 2021 | GPA: 7.8/10

## PUBLICATIONS

- Lekkala, V. K. R., Kang, S. Y., Liu, J., Shrestha, S., Acharya, P., Joshi, P., ... Vanga, M. G., et al. (2024). A pillar/perfusion plate enhances cell growth, reproducibility, throughput, and user friendliness in dynamic 3D cell culture.
- Shrestha, S., Lekkala, V. K. R., Acharya, P., Kang, S. Y., Vanga, M. G., & Lee, M. Y. (2024). Reproducible generation of human liver organoids (HLOs) on a pillar plate platform via microarray 3D bioprinting.
- Joshi, P., Kang, S. Y., Lee, M., Vanga, M. G., et al. (2024). Dynamic culture of bioprinted liver tumor spheroids in a pillar/perfusion plate for predictive screening of anticancer drugs. *Biotechnology & Bioengineering* (submitted).

(Additional publications available on [Google Scholar](#))

## CERTIFICATIONS

- Good Clinical Practices – International Conference Harmonization (Nidatraining.org)
- Clinical Data Management in Medical Devices – Cavaxion Clinical Research
- Cell Culture Technologies – NPTEL
- DNA Decoded – Coursera
- Industrial Biotechnology – Coursera
- Whole Genome Sequencing of Bacteria – Coursera
- The Science of Stem Cells – Coursera

## PROFESSIONAL MEMBERSHIPS

- **Member, 3Rs Collaborative – MPS Initiative (2024–Present):** Supporting the adoption of organoid and microphysiological systems (MPS) technologies to replace, reduce, and refine animal use in research.