Ganesh Acharya

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Professional Summary:

Innovative and results-driven Ph.D. candidate in Biomedical Sciences with 5+ years of hands-on research experience in translational oncology, cell biology, immunology, molecular biology, and biochemistry. Proven expertise in leading both in vitro and in vivo studies focused on DNA repair mechanism, epigenetics, cellular metabolism, immune modulation, stress response mechanisms, tumor resistance, biomarker identification and therapeutic targeting across several solid-cancer models. Skilled in gene editing (siRNA, shRNA, CRISPR), high-content imaging, functional cell-based assays, 3D organoid cultures, flow cytometry, and in vivo tumor modeling. Proven ability to drive collaborative, cross-disciplinary research with a strong publication record, effective scientific communication, and leadership in project management, assay development, and student mentorship. Passionate about advancing translational research to develop innovative therapeutic strategies from bench-to-bedside.

Education:

Ph.D. in Biomedical Sciences (Biochemistry, Cellular & Molecular Biology) **May 2022 – Dec 2025 (Intended)**
Department of Cell Biology & Biochemistry, School of Medicine, Texas Tech University Health Sciences Center
Lubbock, TX, 79430

MS Biotechnology **Aug 2020 – May 2022**
Graduate School of Biomedical Sciences, Texas Tech University Health Sciences Center
Lubbock, TX, 79430

MS Chemistry (Biochemistry) **Jan 2019 – Aug 2020**
Department of Chemistry, College of Arts & Sciences, Southern Illinois University Edwardsville
Edwardsville, IL, 62026

Bachelor of Pharmacy **Aug 2011 – Oct 2015**
Department of Pharmacy, School of Science, Kathmandu University
Dhulikhel, Nepal, 45200

Skills:

- **Molecular & Cell Biology:** Cell culture & cell-based functional & reporter assays, RT-qPCR, PCR, Gel electrophoresis, DNA/RNA isolation, DNA genotyping, Western blotting, Immunoprecipitation, ChIP, Primary tumor cell isolation, CRISPR, siRNA transfection, shRNA Lentivirus transfection, DNA/plasmid transfection, 3D tumor organoids, TEM, Confocal microscopy & IF, Immunohistochemistry, Multi-color flow cytometry (FACS).
- **In Vivo Models:** Genotyping, breeding, dosing (IV/IP/SC/PO), tumor burden analysis, tumor xenografts, IVIS imaging.
- **Assay Development**: Cell proliferation, Apoptosis, Invasion/Migration, Cell cycle, DNA damage (DrGFP, Comet assay, DNA Fiber, BrDU), cytokine analysis (MSD/ELISA), AldeFluor, , NAD^+/ATP, Oxidate stress, MitoSOX.
- **Protein Purification & Characterization:** Molecular Cloning, Affinity & Size exclusion chromatography (HPLC, FPLC), SDS-PAGE, Fluorescence spectroscopy, UV-Vis Spectroscopy, Isothermal titration calorimetry, Differential scanning calorimetry.
- **Computational skills:** Microsoft Excel, ImageJ, GraphPad Prism, FlowJo, Mod Fit, PyMol, Adobe Illustrator, Adobe Photoshop, Python, NGS library prep and data analysis, Genomic data science, Biostatistics, Bioinformatics.

Research Experiences:

Graduate Research Assistant, Department of Cell Biology & Biochemistry, School of Medicine, Texas Tech University Health Sciences Center **September 2020 – Present**

Researcher, Dr. Komaraiah Palle Lab

- Designed, planned, and executed *in-vitro* as well as *in-vivo* study to explore the novel function of Haspin Kinase in the regulation of DNA damage and immunomodulation in ovarian and kidney cancer models.
- Teamed with the researcher to investigate the novel role of BRIP1/FANCJ in neuronal cells by resolving oxidative stress-induced DNA lesions; discovered that RAD51 as a biomarker for racial disparity in triple-negative breast cancer which is epigenetically regulated by miRNA-214-5p.
- Conducted and led projects identifying novel therapeutic modalities by targeting metabolic, integrated stress response (ISR) and replication stress crosstalk to treat chemo-resistant ovarian cancer cells; investigating that CDK stabilizes RAD18 expression and activates TLS pathway in ovarian cancer.

- Collaborated with medicinal chemist at Wake Forest University School of Medicine to investigate the anticancer effect of novel fluoropyrimidine drug-CF10 in colorectal cancer and overcome 5FU resistance.
- Developed and optimized protocols for assays, organized lab meetings, and presentation on updated data.
- Mentored and assisted MS, MD, & Ph.D. students on technical lab training and guided research projects.

Graduate Research/Teaching Assistant, Department of Chemistry, College of Arts and Science, Southern Illinois University Edwardsville **January 2019 – August 2020**

Researcher, Dr. Chin-Chuan Wei Lab

- Purified and characterized oxidative stress-related enzymes (Dual Oxidase EF-hand, NADPH Oxidase 5) to investigate regulatory mechanisms in cellular redox biology.
- Provided laboratory instruction and technical guidance to undergraduate students in Gen Chemistry & Biochem courses.

Publications:

1. **Acharya G.**, Mani C., Sah N., Saamarthy K., Young R., Reedy M, Sobol R., and Palle K. (2024) Chk1 inhibitor induced PARylation by targeting PARG causes excessive replication and metabolic stress and overcomes chemoresistance in ovarian cancer. *Cell Death Discovery,* (2024) 10:278.
2. Shahriar M, Molinares M, **Acharya G**, Palle K, Xu C (2025). 3D bioprinting of a perfusable tumor microenvironment model to investigate perfusion and chemotherapeutic responses in ovarian cancer cells. *Int J Bioprint*. doi: 10.36922/IJB025320316.
3. Sah Naresh., Shaik AA., **Acharya G.**, Dunna M., Silwal A., Sharma S., Khan S., and Bagchi S. (2024) Receptor-Based Strategies for Overcoming Resistance in Cancer Therapy. *Receptors,* 2024, 3(4), 425-443.
4. **Mani C.[#], Acharya G.[#]**, Saamarthy K., Ochola D., Mereddy N., Pruitt K., Manne U., & Palle K. (2023) Racial Differences in Rad51 Expression are regulated by miRNA-214-5P, and its inhibition synergizes with olaparib in triple-negative breast cancer. *Breast Cancer Research,* 25, 44 (2023) **[#]Authors Contributed Equally.**
5. Mani, C., **Acharya, G.**, Kshirsagar, S., Vijayan, M., Khan, H., Reddy, P. H., & Palle, K. (2022). A Novel Role for BRIP1/FANCJ in Neuronal Cells Health & in Resolving Oxidative Stress-Induced DNA Lesions. *J Alzheimer's Dis*: JAD, 85(1), 207– 221.
6. Wei CC., Hay E., Smith D., Lloyd L., **Acharya G.**, Ngo R., (2020). Binding of Nox5's EF-Hand domain to the peptides corresponding to the phosphorylatable region and regulatory inhibitory loop in its dehydrogenase domain. *Biophysical Chemistry*, vol-262, 106379.

Conference Papers:

1. Omy, T., Sah, N., Reedy, M., **Acharya, G.**, & Palle, K. (2025). Abstract 3090: miRNA-221-5p-mediated epigenetic regulation promotes chemoresistance and offers therapeutic potential in ovarian cancer**.** *Cancer Res* (2025) 85 (8_Supplement_1): 3090.
2. **Acharya, G.,** Ochola, D., Mani, C., Sah, N., Reedy, M., & Palle, K. (2024). Abstract S20: Targeting Metabolic and DNA Damage Checkpoint Induces Excessive DNA Damage and Causes Synergistic Lethality in GLS^{high} Chemoresistant Ovarian Cancer Cells. *Environmental and Molecular Mutagenesis*: Volume 65, Issue S2, Pages: C1, 1-135 (18).
3. **Acharya, G.**, Mani, C., Reedy, M., & Palle, K. (2023). Abstract 2667: PARG inhibition augments Chk1 inhibitor-induced replication stress and synergistically kills ovarian cancer cells. *Cancer Res* (2023) 83 (7_Supplement): 2667.
4. Luna, P., **Acharya, G.**, Ochola, D., Peddibhotla S., Mani, C., Reedy, M., & Palle, K. (2023). Abstract 5496: Glutaminase inhibition induces replication stress in ovarian cancer cells and inhibition of replication checkpoint causes synthetic lethality. *Cancer Res* (2023) 83 (7_Supplement): 5496.
5. **Acharya, G.**, Mani, C., Manne, U., & Palle, K. (2023). Abstract CO27: miRNA-214-5P regulates RAD51, a biomarker for aggressive disease and racial disparities in triple-negative breast cancer. *Cancer Epidemiol Biomarkers*, 32 (1_Supplement): C027.
6. **Acharya, G.**, Mani, C., Manne, U., & Palle, K. (2022). Abstract PO-131: RAD51 is a biomarker for aggressive disease and racial disparities in triple-negative breast cancer. *Cancer Epidemiology, Biomarkers & Prevention*, *31*(1_Supplement), PO-131.

Thesis Paper

1. **Acharya, G.** (2020). Characterization of the dual Oxidase's EF-hand domain and NADPH oxidase 5's domain-domain Interaction (Order No. 28030062).

Honors & Awards:

1. *National-level Phi kappa Phi Dissertation Grant,* **2025** & The *Love of Learning* Award, **2024** issued by Honor Society of Phi Kappa Phi
2. *Endowed Phonathon Scholarship* issued by Student Government Association, TTUHSC, **2024 & 2025**
3. Merit-based *EMGS Student and Early Career Investigator Award*, EMGS Annual Meeting**, 2024**
4. *AACR-Doreen J. Putrah Cancer Research Foundation Scholar-in-Training Award*, AACR Annual Meeting, **2023**
5. *AACR Scholar-In Training Award*, *15th AACR conference on the science of cancer health disparities, **2022***
6. *2022 Dean's Recognition Award* and Podium Speech, GSBS commencement ceremony, TTUHSC, **2022**
7. Merit-based *Mary Lou Clements-Mann Endowed Scholarship*, **2022;** Merit-based *Helen Hodges Scholar*, **2022 & 2024**
8. *AACR Student & Early Career Investigator Scholarship*, *14th AACR conference on cancer health disparities, **2021***
9. *GSBS Competitive Scholarship*, TTUHSC, **2020;** *School of Sciences (SOS) Scholarship, Kathmandu University,* **2011**