

APARNA KISHOR

PHYSICIAN-SCIENTIST

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PROFESSIONAL PROFILE

Physician-scientist committed to the development of tools and therapies to further human health. Goal is to foster and champion innovative, productive, collaborative, and rigorous scientific teams. Noted for strong mentorship and leadership. Significant expertise in CRISPR therapeutics as well as mRNA decay.

CORE COMPETENCIES

- Extensive experience with a large array of molecular biology techniques and assay development.
- Facility with next generation sequencing techniques and analysis.
- Innovative research program design through application of a broad research tool kit.
- Empathetic and effective team management, both upward and downward through the organization.
- Excellent communication skills including oral presentations.

SKILLS

- **Management** – Team leadership in a highly fluid and matrixed research environment; fostering cohesion, innovation, and rigor in a multidisciplinary team; working with those above and below in the institutional hierarchy; building research and business collaborations with groups both within the organization and beyond; general laboratory management including purchasing, budgeting, housekeeping, and development and documentation of standard protocols.
- **Laboratory** – Antisense oligonucleotides (ASO) development for splice site regulation, assay development (exploiting expertise from within the group as well as collaborators), cloning, confocal microscopy (immunohistochemistry, DNA and RNA FISH, confocal, high content), CRISPR-Cas9 gene editing in primary cells and laboratory lines (including guide design and evaluation), electrophoretic mobility shift assays (EMSA), flow cytometry, fluorescence anisotropy, immunoprecipitation of proteins and RNA-containing complexes, mass spectrometry data analysis, mRNA decay time courses using various biochemical and bioinformatics techniques, Northern blots, nucleic acid extraction (both RNA and DNA from cells and tissues), PCR (standard PCR, genotyping, qPCR with and without TaqMan probes, semi-quantitative PCR, ddPCR), recombinant protein purification from bacterial cells, RNA-seq data analysis using standard and custom-made tools, RNA-seq library preparation, splice site evaluation, stable cell line generation including screening of clones, tissue culture (adherent and nonadherent mammalian cell lines, primary cell lines, iPSCs), transgene delivery to mammalian cells (transfection, transduction, electroporation), transient depletion of RNA transcripts by siRNA and shRNA, validation of antibody target specificity, Western blots.
- **Communication** – Delivery of short and long formal oral presentations, relationship-building with medical providers and patients, presentation of information in pedagogical contexts, manuscript writing and editing, generation of cogent scientific figures and tables.
- **Software and Informatics** – Deep experience with JMP, Prism, Microsoft Office Suite; moderate experience with Python and Adobe Illustrator.

WORK EXPERIENCE

INTELLIA THERAPEUTICS, Cambridge, MA

2021 – 2024

Principal Scientist

Team lead for development of all aspects of DNA templates for nonviral delivery in CRISPR therapeutics.

- Forged a multidisciplinary group into a dynamic and well-respected team with a culture of curiosity and exploration. Team-building approach centered on intrateam collaborative experiences including data

deep dives, journal clubs, and brainstorming sessions. Each team member was encouraged to establish scientific relationships with other groups at Intellia.

- Built research- and large-scale product manufacturing methods including analytics package for each product.
- Established high-efficiency protocols for template use in dividing and post-mitotic primary cells.
- Developed and implemented basic research projects designed to expand innovation in template technology.
- Involved in patent processes for both template production and applications.
- Delivered formal progress updates and data presentations to senior management.
- Created successful collaborations with Intellia's manufacturing, delivery chemistry, and platform innovation teams to develop applications and use cases for template technology.
- Worked with Intellia's business development team to establish collaborations with outside organizations to triage products in the space.

Patents:

- Pan, V., Donahue, N., Kishor, A., Kramer, T. (2025). *Nuclease resistant single stranded DNA product for non-viral delivery to a cell and methods of production thereof* (International Publication Number WO2025/064401 A1). World Intellectual Property Organization.
- Kramer, T., Kishor, A., Pan, V. (2025). *Nuclease resistant double stranded DNA product for non-viral delivery to a cell and methods of production thereof* (International Publication Number WO2025/064396 A1). World Intellectual Property Organization.

NATIONAL INSTITUTES OF HEALTH (NIH), Bethesda, MD

2015 – 2021

Postdoctoral Research, National Heart, Lung, and Blood Institute (NHLBI)

Investigated mechanisms and transcriptome-wide effects of nonsense-mediated mRNA decay; advised by J. Robert Hogg, Ph.D.

Awards:

- NHLBI K22 grant designee.
- Best oral presentation at the Conference on mRNA Turnover, Montreal, Canada, 2019.
- Best poster pitch at the annual NHLBI Intramural Research Festival, Bethesda, MD, 2017 and 2018.

First Author Publications:

- Activation and inhibition of nonsense mediated mRNA decay control the abundance of alternative polyadenylation products. *NAR*. 2020.
- Nonsense-mediated mRNA decay: the challenge of telling right from wrong in a complex transcriptome. *WIREs RNA*. 2019.
 - Highlighted in "Nonsense-mediated mRNA Decay" (2019) *Advanced Science News*.
- A mechanism to protect normal long 3' UTRs from NMD drives failure of mRNA quality control in B cell lymphoma. *EMBO J*. 2019.
 - Reviewed in Wilkinson, M.F., Cook-Andersen, H. (2019) "Nonsense shielding: protecting RNA from decay leads to cancer." *EMBO J*. 2019.

UNIVERSITY OF MARYLAND, SCHOOL OF MEDICINE, Baltimore, MD

2014 – 2015

Surgical Intern

Service in and out of the operating room for the practices in the Department of Veterans Affairs (VA) hospital, minimally invasive surgery, vascular surgery, urology, transplant surgery, surgical oncology, and community surgery.

UNIVERSITY OF MARYLAND, BALTIMORE, Baltimore, MD

2008 – 2012

Graduate Research

Studied novel regulators of AU-rich element-mediated mRNA decay; advised by Gerald Wilson, Ph.D.

Awards:

- Graduate Program in Life Sciences Thesis Project Award, 2013.

First Author Publications:

- Thesis: Post-Transcriptional control of gene expression by the major inducible heat shock protein HSP70.

- Hsp70's RNA-binding and mRNA stabilizing activities are independent of its protein chaperone functions. *J. Biol. Chem.* 2017.
- Hsp70 is a novel posttranscriptional regulator of gene expression that binds and stabilizes selected mRNAs containing AU-rich elements. *Mol. Cell. Biol.* 2013.
- Analyses of RNA-ligand interactions by fluorescence anisotropy, in *Biophysical Approaches to Translational Control of Gene Expression*, Dinman, J.D., ed., *Springer Science+Business Media, Inc.*, New York, NY. 2012.

NATIONAL INSTITUTES OF HEALTH (NIH), Bethesda, MD

2005 – 2006

Postbaccalaureate Research, National Cancer Institute (NCI)

Elucidated T cell signaling pathways; advised by Connie Sommers, PhD and Larry Samelson, MD.

FULL PUBLICATION LIST

Bibliography: ncbi.nlm.nih.gov/myncbi/aparna.kishor.1/bibliography/public

EDUCATION

Doctor of Medicine and Doctor of Philosophy, Medical Scientist Training Program, UNIVERSITY OF MARYLAND, BALTIMORE, Baltimore, MD (2014)

Bachelor of Arts, Biochemistry, SWARTHMORE COLLEGE, Swarthmore, PA (2005)

- Graduated with honors.
- American Society for Microbiology Undergraduate Research Fellow, 2005.
- Summer research internships at NCI (2002, under Jin Jen) and Merck Pharmaceuticals (2003, under Jim Inglese).

ADDITIONAL CLINICAL EXPERIENCE

NATIONAL INSTITUTES OF HEALTH (NIH), Bethesda, MD

2016 – 2019

Participant, Undiagnosed Diseases Program, National Genome Research Institute (NHGRI)

Participated in weekly rounds of the undiagnosed diseases program.

LICENSURE

Maryland Medical License, MARYLAND BOARD OF PHYSICIANS (2015 – Present)