

Pravrutha Raman, Ph.D.

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EDUCATION AND TRAINING

- 2019–present **Postdoctoral Fellow**, Basic Sciences Division, Fred Hutchinson Cancer Center (FHCC), Seattle, WA, USA.
Advisor: Dr. Harmit Malik; Co-advisor: Dr. Toshio Tsukiyama
Topic: *Evolutionary innovations in histone repertoires drive biological novelties*
- 2012–2019 **Doctor of Philosophy** (Biological Sciences), Department of Cell Biology and Molecular Genetics, University of Maryland (UMD), College Park, MD, USA.
Advisor: Dr. Antony Jose
Topic: *Systemic and transgenerational regulation of gene expression by small RNAs in C. elegans*
- 2011–2012 **Research assistant**, Sultan Qaboos University, Genetics Department, Muscat, Oman.
Topic: *Investigating the genetic basis of breast cancer in Omani populations and chemoprevention strategies.*
- 2009–2010 **Master of Science**, Medical Genetics, Newcastle University, Newcastle upon Tyne, UK.
Advisor: Dr. Robert Taylor
Topic: *Investigating mitochondrial DNA maintenance abnormalities in adult mitochondrial disease presentations.*
- 2005–2009 **Bachelor of Technology**, Biotechnology, VIT University, Vellore, TN, India.

AWARDS AND HONORS

Grants/Fellowships:

- 2026– R00 phase, NIGMS K99/R00 Pathway to Independence Award
2023–2025 K99 phase, NIGMS K99/R00 Pathway to Independence Award
2022–2023 Washington Research Foundation Postdoctoral Fellowship (terminated early to accept the K99/R00 Award)
2012–2013 Dean's Fellowship, Biological Sciences Graduate Program, UMD

Other Awards:

- 2024 Paul T. Englund Emerging Scholar Award, Johns Hopkins University
2023 Emerging Scholars in Genome Sciences Symposium, University of Virginia
2023 MERIT Emerging Leaders Symposium, Memorial Sloan Kettering Cancer Center
2023 Rising Stars in Genetics and Genomics, University of Utah
2022 Hutchinson Mentoring Award, Student/Postdoc Advisory Committee, FHCC
2022 National Science Foundation Award for CSHL Yeast Genetics & Genomic Course
2018 Jacob K. Goldhaber Travel Grant, UMD
2018 Board of Visitors Fellowship (Best All Around Award - Summer Fellowship), UMD
2018 Winner, University of Maryland 3 Minute Thesis Competition
2017 Genetics Society of America and C. elegans Conference Travel Award
2017, 2018 Molecular and Cell Biology Travel Award, UMD
2014, 2017 Best Poster Award, Molecular and Cell Biology (MOCB) Retreat, UMD

PUBLICATIONS (direct mentees are underlined, #corresponding author)

1. Knudsen-Palmer, D.R, **Raman, P.**, Ettefa, F., De Ravin, L., Jose, A.M. (2023). Target-specific requirements for RNA interference can arise through restricted RNA amplification despite the lack of specialized pathways. *eLife*13: RP97487. <https://doi.org/10.7554/eLife.97487.1>
2. Caro, L.*, **Raman, P.***, Steiner, F.A., Ailion, M., Malik, H.S. (2022). Recurrent but short-lived duplications of centromeric proteins in holocentric *Caenorhabditis* species. *Molecular Biology and Evolution*, msac206. <https://doi.org/10.1093/molbev/msac206> (*Equal contribution)
3. **Raman, P.**, Rominger, C.M., Young, J.M., Molaro, A., Tsukiyama, T., Malik, H.S. (2022). Novel classes and evolutionary turnover of histone H2B variants in the mammalian germline. *Molecular Biology and Evolution*, msac019. <https://doi.org/10.1093/molbev/msac019>.
4. Devanapally, S.*, **Raman, P.***, Chey, M., Allgood, S., Ettefa, F., Diop, M., Lin, Y., Cho, Y. E., & Jose, A. M. (2021). Mating can initiate stable RNA silencing that overcomes epigenetic recovery. *Nature communications*, 12(1), 4239. <https://doi.org/10.1038/s41467-021-24053-4> (*Equal contribution)
5. **Raman, P.**, Zaghaf, S., Traver, E.C., and Jose, A.M. (2017) The double-stranded RNA binding protein RDE 4 can act autonomously during feeding RNAi in *C. elegans*. *Nucleic Acids Res.* 45(14):8463-8473. 3. <https://doi.org/10.1093/nar/gkx484>
6. Alston, C.L., Schaefer, A.M., **Raman, P.**, Solaroli, N., Krishnan, K.J. et al. (2013) Late-onset respiratory failure due to TK2 mutations causing multiple mtDNA deletions. *Neurology*. 81(23):2051-3. 4. <https://doi.org/10.1212/01.wnl.0000436931.94291.e6>
7. Fratter, C., **Raman, P.**, Alston, C.L., Blakely, E.L., Craig, K. et al. (2011) RRM2B mutations are frequent in familial PEO with multiple mtDNA deletions. *Neurology* 76(23):2032-4. <https://doi.org/10.1212/WNL.0b013e31821e558b>

Reviews and Perspectives:

8. **Raman, P.**, Malik, H.S. (2021). How to build (and diversify) a new histone variant. *PreLights*. <https://doi.org/10.1242/prelights.27607>
9. Cucinotta, C. E.*, Martin, B.*, Noé González*, M., **Raman, P.***, Teif, V. B.*, & Vlaming, H.* (2021). Strength is in engagement: The rise of an online scientific community during the COVID-19 pandemic. *EMBO reports*, 22(5), e52612. <https://doi.org/10.15252/embr.202152612> (*Equal contribution)
10. Falcone, S., **Raman, P.**, Marzluff, W., Rieder, L. (2026). Adventures through wonderland: the wild world of histone gene organization, evolution, and regulation in over 250 species. *Molecular Biology of the Cell* 37(9).

Preprints or Manuscripts in Review:

10. Chey, M., **Raman, P.**, Ettefa, F., Jose, A.M. (2024). Evidence for multiple forms of heritable RNA silencing. *bioRxiv*, <https://doi.org/10.1101/2024.04.28.591487>.
11. **Raman, P#.**, Khan, H., Young, J., Tsukiyama, T., Malik, H.S. (2025). Dynamic evolution of EZHIP, an inhibitor of the Polycomb Repressive Complex 2 in mammals. *bioRxiv*, <https://doi.org/10.64898/2025.12.12.693809>

Full publication list: <https://www.ncbi.nlm.nih.gov/myncbi/pravrutha.raman.2/bibliography/public/>

TEACHING AND MENTORSHIP

Mentees:

Fred Hutchinson Cancer Center (FHCC):

2024–2026	Vivian Vo (Current UW undergraduate)
2024	Anna Foss (High School Summer Student)
2022–2026	Hana Khan (Current UW undergraduate, now: Research technician)
2022–2024	Ashlyn Anderson (Research technician, now: PhD student, UNC, Chapel Hill)
2023	Amy Hamada (Current UW undergraduate)
2022	Kelsey Woodruff (Summer technician, now: Termini lab PhD student, FHCC)
2022	Peter Dietzen (PhD rotation student, now: Malik lab PhD student, FHCC)
2020–2022	Sierra Simmerman (Technician, now: PhD student, University of Colorado Anschutz)
2021	Leah Anderson (PhD rotation student, now: Dunham lab PhD student, UW)
2020–2021	Mary Callie Rominger (Whitman College undergraduate, now: FHCC Research Technician)

Awarded Hutchinson Mentoring Award, FHCC, upon nomination by current and former mentees.

University of Maryland, College Park:

2017–2019	Yixin Lin (Undergraduate Researcher; now: High School Teacher)
2015–2019	Farida Ettefa (Undergraduate Researcher; now: NYU MD/PhD student)
2015	Pallavi Bhawe (High School Summer Student)

Teaching:

2016	Teaching assistant, Cell Biology (BSCI420), UMD College Park
2013	Teaching assistant, Microbiology (BSCI223), UMD College Park

SELECT LEADERSHIP, OUTREACH AND PROFESSIONAL DEVELOPMENT

2023–2025	Co-chair , Genetics Society of America (GSA) Early Career Leadership Program, Accessibility Subcommittee; <i>lead a team of early-career researchers to organize workshops, write and edit articles and interviews highlighting accessibility measures in research for disabled scientists.</i>
2024	Trainee , Leadership and Management in Action Program; <i>undertook a training designed to learn and practice leadership and management skills that apply to many career stages.</i>
2024	Moderator and Co-chair , The Allied Genetics Conference (TAGC), Genetics Society of America; <i>Reviewed and selected abstracts for oral presentations and moderated the Evo-Devo session.</i>
2023	Invited moderator , FHCC postbaccalaureate program Journal Club; <i>led the journal club discussion of a paper on the evolution of gene expression in Drosophila ovaries.</i>
2023	Trainee , EMBO Lab Leadership Course; <i>actively participated in a course designed to learn and practice leadership skills focusing on academic research.</i>
2022	Keynote Speaker , Scientific Education Partnership Program Kick-off event, FHCC; <i>presented recent advances and my research in histone evolution to high school teachers.</i>
2022	Panelist , Science communication using social media, Gene regulation and Epigenetics conference for early career scientists; <i>provided insights into our experience starting and organizing the Fragile Nucleosome community and seminar series.</i>
2021	Guest Interviewee , “The secret history of DNA: Pus, fish sperm, life as we know it” on Short Wave, NPR’s Daily Science Podcast; <i>invited as an expert to speak to a non-science audience on the discovery and science of how DNA is packaged into cells.</i>
2021	Scientific Research Mentor , Scientific Education Partnership, FHCC; <i>taught high-school teachers phylogenetics and yeast techniques to plan a research course for their students.</i>
2020–2023	Co-founder and Co-organizer , Fragile Nucleosome Discussion Group and Seminar Series (https://generegulation.org/fragile-nucleosome/); <i>facilitated online discussions and provided resources for the chromatin community, including organizing, planning, and running a bi-weekly seminar series and bi-yearly symposium.</i>

Reviewer: *Molecular Biology and Evolution, Human Genetics, PeerJ, STAR Protocols, Development, Genetics, PNAS*

SELECT EXTRAMURAL PRESENTATIONS

Oral:

2024	Paul T. Englund Emerging Scholar Award, Johns Hopkins University
2024	The Allied Genetics Conference (TAGC), Genetics Society of America
2023	Emerging Scholars in Genome Sciences Symposium, University of Virginia
2023	MERIT Emerging Leaders Symposium, Memorial Sloan Kettering Cancer Center
2023	Rising Stars in Genetics and Genomics, University of Utah
2022	Stowers Research Conferences: Genetics and Genomics – Stuck on repeat
2022	Western Washington University Molecular Biosciences Symposium
2022	ASBMB Evolution and core processes in gene expression
2021	Asilomar Chromatin, Chromosomes & Epigenetics Conference
2021	EMBO Workshop, Physiology, and function of Histone Variants

Poster:

2021	Society for Molecular Biology and Evolution Meeting
2018	CSHL Epigenetics and Chromatin Meeting, Cold Spring Harbor, NY
2017	21 st International <i>C. elegans</i> Conference, UCLA, Los Angeles, CA
2015	20 th International <i>C. elegans</i> Conference, UCLA, Los Angeles, CA