Hari Rallapalli

hari (dot) rallapalli (at) gmail (dot) com

Education

01/2020	Ph.D.	Biomedical Science	New York University
01/2019	M.Phil.	Physiology and Neuroscience	New York University
05/2017	M.S.	Biomedical Science	New York University
06/2014	B.S.	Biomedical Engineering	University of California, Davis

Professional experience

2020 - present	Postdoctoral Fellow	National Institutes of Health	PI: Dr. Alan Koretsky
2014 - 2020	Graduate Assistant	New York University	PI: Dr. Daniel Turnbull
2009 - 2014	Student Researcher	Stanford University	PI: Dr. Sam Gambhir

Funding

08/2025 NIBIB K99/R00 - NIH Pathway to Independence Award
"Developing the manganese transporter Zip14 into a platform technology for gene expression MRI"

Honors and awards

2023	ISMRM *Magna cum laude* merit award
2022	ISMRM Molecular and Cellular Imaging Study Group Trainee Award
2016	NYU Vilcek Institute MacCracken Award
2014	UC Davis Biomedical Engineering Senior Design Showcase Significant Progress Award
2009	Agilent Technologies Scholarship
2008	IEEE President's Scholarship

Teaching and mentorship

2023 - present	Founder, Instructor	"No Programming Required" Image Processing Workshop
2023 - present	Mentor	NINDS Health Disparities in Tribal Communities Summer Internship Program
2020 - present	Mentor	NIH Postbaccalaureate Intramural Research Training Award Program
2016 - 2019	Mentor	NYU Grossman Summer Undergraduate Research Program
2016 - 2018	Mentor	NYU Courant Institute GSTEM Program

Leadership and service

2024 - present	Member	NINDS Fellows Advisory Committee on Training
2016 - 2017	VP, Finance	NYU Biotechnology Association
2015 - 2020	VP	NYU Rugby Football Club
2015 - 2016	President	NYU Vilcek Institute Student Council
2014 - present	Member	International Society for Magnetic Resonance in Medicine (ISMRM)

Patents

GENETIC CONTROL OF MRI SIGNAL. US Patent Application Serial No. 63/479,835, filed 13 January 2023

Publications

1. **Rallapalli, H.**, Hadj-Mabrouk, D., Lee, T., Wang, W., Lerchner, W., MacRenaris, K., O'Halloran, T., Richmond, B. & Koretsky, A. (2026). Manganese Accumulation for Genetically Induced Contrast (MAGIC) MRI in the brain across species. *bioRxiv* doi:10.64898/2026.04.30.722028 (in revision)

2. Liu, L., MacKinnon, M. J., Atanasijevic, T., Dodd, S., Bouraoud, N., Donahue, D., **Rallapalli, H.** & Koretsky, A. P. (2025). Direct delivery of MRI contrast through skull vessel/marrow pathways into the brain guided by microCT. Theranostics 15, 6615–6627.

3. Liu, L., Tao-Cheng, J., **Rallapalli, H.**, Dodd, S., Bouraoud, N., & Koretsky, A. P. (2024). High iron in mouse olfactory ensheathing cells at the glia limitans in the olfactory bulb underlies MRI T2* hypointensity. *Imaging*

Neuroscience; 2 1–15. https://doi.org/10.1162/imag_a_00299

4. **Rallapalli, H.**, McCall, E. C., & Koretsky, A. P. (2024). Genetic control of MRI contrast using the manganese transporter Zip14. *Magnetic Resonance in Medicine*, *92*(2), 820–835. https://doi.org/10.1002/mrm.29993
   ☆ *MRM* editor-in-chief invited paper

5. **Rallapalli, H.**, Bayin, N. S., Goldman, H., Maric, D., Nieman, B. J., Koretsky, A. P., Joyner, A. L., & Turnbull, D. H. (2023). Cell specificity of Manganese-enhanced MRI signal in the cerebellum. *NeuroImage*, *276*, 120198. https://doi.org/10.1016/j.neuroimage.2023.120198

6. Arefin, T. M., Lee, C. H., Liang, Z., **Rallapalli, H.**, Wadghiri, Y. Z., Turnbull, D. H., & Zhang, J. (2023). Towards reliable reconstruction of the mouse brain corticothalamic connectivity using diffusion MRI. *NeuroImage*, *273*, 120111. https://doi.org/10.1016/j.neuroimage.2023.120111

7. Tan, I., Arifa, R. D. N., **Rallapalli, H.**, Kana, V., Lao, Z., Sanghrajka, R. M., Bayin, N. S., Tanne, A., Wojcinski, A., Korshunov, A., Bhardwaj, N., Merad, M., Turnbull, D. H., Lafaille, J. J., & Joyner, A. L. (2020). CSF1R inhibition depletes tumor-associated macrophages and attenuates tumor progression in a mouse sonic Hedgehog-Medulloblastoma model. *Oncogene*, *40*(2), 396–407. https://doi.org/10.1038/s41388-020-01536-0

8. **Rallapalli, H.**, Darwin, B. C., Toro-Montoya, E., Lerch, J. P., & Turnbull, D. H. (2020). Longitudinal MEMRI analysis of brain phenotypes in a mouse model of Niemann-Pick Type C disease. *NeuroImage*, *217*, 116894. https://doi.org/10.1016/j.neuroimage.2020.116894

9. **Rallapalli, H.**, Tan, I., Volkova, E., Wojcinski, A., Darwin, B. C., Lerch, J. P., Joyner, A. L., & Turnbull, D. H. (2019). MEMRI-based imaging pipeline for guiding preclinical studies in mouse models of sporadic medulloblastoma. *Magnetic Resonance in Medicine*, *83*(1), 214–227. https://doi.org/10.1002/mrm.27904

10. **Rallapalli, H.,** & Smith, B. R. (2020). Carbon Nanotubes for Enhanced Biopharmaceutical Delivery. *Translational Nanomedicine*, 201. https://doi.org/10.1002/3527600906.mcb.201600006

11. Tan, I.*, Wojcinski, A.*, **Rallapalli, H.,** Lao, Z., Sanghrajka, R. M., Stephen, D., Volkova, E., Korshunov, A., Remke, M., Taylor, M. D., Turnbull, D. H., & Joyner, A. L. (2018). Lateral cerebellum is preferentially sensitive to high sonic hedgehog signaling and medulloblastoma formation. *Proceedings of the National Academy of Sciences*, *115*(13), 3392–3397. https://doi.org/10.1073/pnas.1717815115
    *authors contributed equally

12. Pujara, A. C., Mikheev, A., Rusinek, H., Gao, Y., Chhor, C., Pysarenko, K., **Rallapalli, H.**, Walczyk, J., Moccaldi, M., Babb, J. S., & Melsaether, A. N. (2017). Comparison between qualitative and quantitative assessment of background parenchymal enhancement on breast MRI. *Journal of Magnetic Resonance Imaging*, *47*(6), 1685–1691. https://doi.org/10.1002/jmri.25895

13. Pujara, A. C., Mikheev, A., Rusinek, H., **Rallapalli, H.**, Walczyk, J., Gao, Y., Chhor, C., Pysarenko, K., Babb, J. S., & Melsaether, A. N. (2016). Clinical applicability and relevance of fibroglandular tissue segmentation on routine T1 weighted breast MRI. *Clinical Imaging*, *42*, 119–125. https://doi.org/10.1016/j.clinimag.2016.12.002

14. Smith, B. R., Ghosn, E. E. B., **Rallapalli, H.**, Prescher, J. A., Larson, T., Herzenberg, L. A., & Gambhir, S. S. (2014). Selective uptake of single-walled carbon nanotubes by circulating monocytes for enhanced tumour delivery. *Nature Nanotechnology*, *9*(6), 481–487. https://doi.org/10.1038/nnano.2014.62

Invited talks

2026/05/04	Columbia University Biomedical Engineering	"Genetic control of MRI contrast using the manganese transporter Zip14"
2026/04/01	University of Southern California Biomedical Engineering	"My journey in academia as a biomedical engineer"

2026/03/20	Johns Hopkins Radiology	"Genetic control of MRI signal using the manganese transporter Zip14"
2024/12/03	Georgia Tech/Emory Coulter Department of Biomedical Engineering	"Genetic control of MRI signal using the manganese transporter Zip14"
2024/11/20	NYU Radiology Research Forum	"Genetic control of MRI signal using the manganese transporter Zip14"
2024/04/18	NINDS Neurobiology Interest Group	"Genetic control of MRI signal using the manganese transporter Zip14"
2024/03/22	Uniformed Services University of the Health Sciences – Petrus and Byrnes joint lab meeting	"Genetic control of MRI signal using the manganese transporter Zip14"
2023/10/22	NYU Grossman School of Medicine	"What Can You Be With a PhD?: Choosing a Traditional or Non-Traditional Postdoc"
2023/10/03	NYU Preclinical Imaging Laboratory	"Genetic control of MRI signal using the manganese transporter Zip14"
2023/01/07	Allen Institute for Neural Dynamics	"Genetic control of MRI signal"

Conference Presentations

"Zip14 gene expression MRI enables in vivo mesoscale neural tracing" (2025). World Molecular Imaging Congress, Anchorage, AK

☆ Selected by the 2025 Program Committee as one of the most innovative abstracts

"Manganese-enhanced gene expression MRI using Zip14" (2024). ISMRM & ISMRT Annual Meeting & Exhibition, Suntec City, Singapore

"MRI detection of gene expression in the mammalian brain using the Manganese transporter Zip14." (2023). ISMRM & ISMRT Annual Meeting & Exhibition, Toronto, Canada.

☆ *Magna cum laude* merit award ☆ ISMRM Highly-Regarded Abstract Initiative

"Assignment of signal to cell type in MEMRI of the cerebellum." (2022). Joint Annual Meeting ISMRM-ESMRMB-ISMRT, London, UK

☆ 3rd prize, Molecular Imaging Study Group Competition

"MEMRI-guided preclinical trial of an experimental TAM-targeted therapy in mouse medulloblastoma." (2018). Joint Annual Meeting ISMRM-ESMRMB, Paris, France

"Cell Specificity of MEMRI Contrast in the Mouse Cerebellum." (2017). World Molecular Imaging Congress, Philadelphia, PA

"High Resolution MEMRI Reveals the Purkinje Cell Layer as the Source of Contrast in the Mouse Cerebellum." (2017). ISMRM 25th Annual Meeting & Exhibition, Honolulu, HI

"A High Throughput, MEMRI-Based Imaging Pipeline to Study Mouse Models of Sporadic Human Cancer." (2017). ISMRM 25th Annual Meeting & Exhibition, Honolulu, HI

"Longitudinal MEMRI Characterization of a Novel Mouse Medulloblastoma Model." (2016). World Molecular Imaging Congress, New York, NY

"Longitudinal MEMRI Characterization of a Novel Mouse Medulloblastoma Model." (2016). ISMRM 24th Annual Meeting & Exhibition, Singapore