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CANCER BIOLOGY & GENETICS PROGRAM

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Research

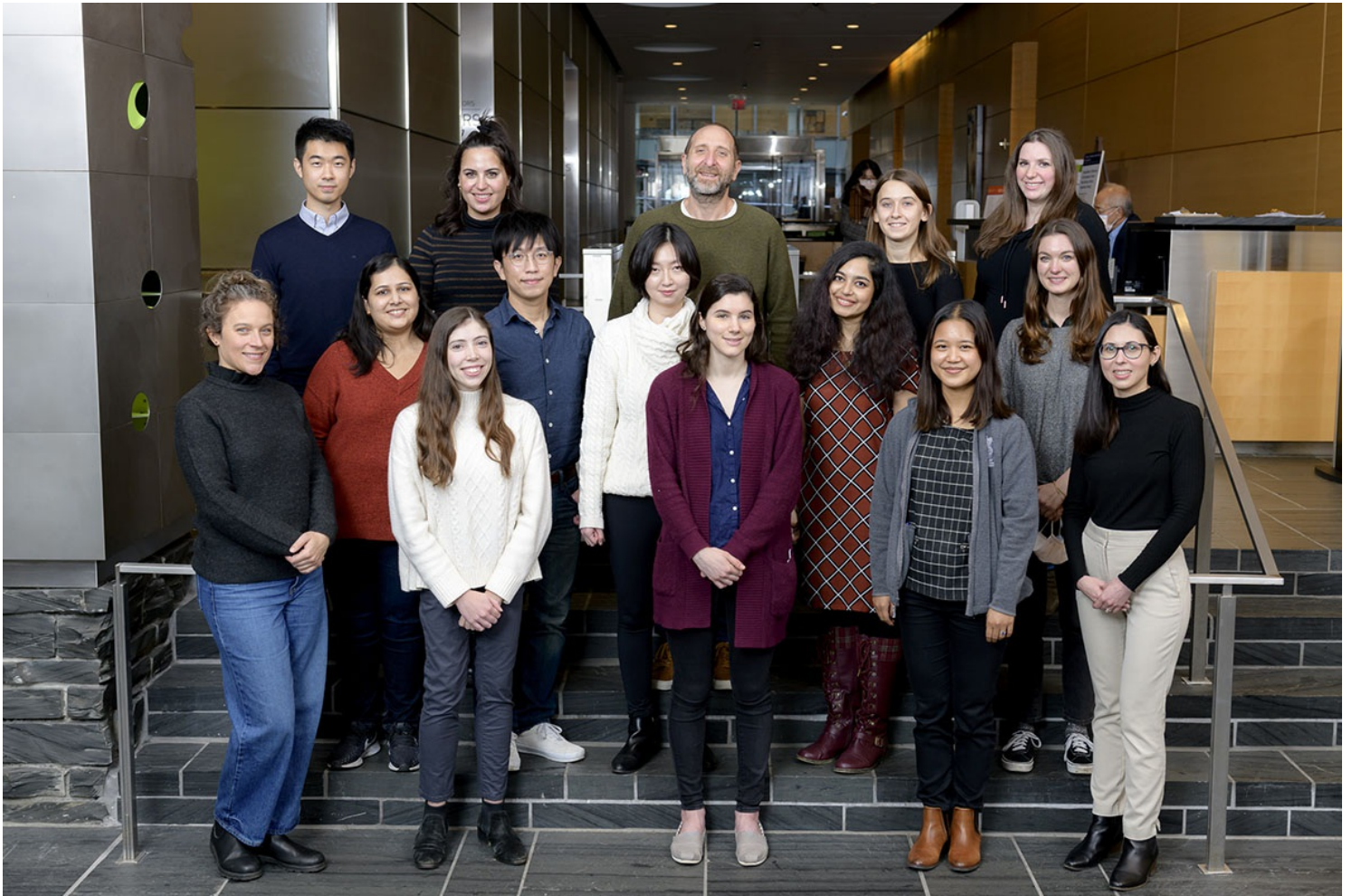


Richard White, MD, PhD

Zebrafish models of cancer

We are interested in the ways in which developmental programs affect cancer progression, and how these programs are altered by the microenvironment. To address these questions, we primarily utilize the zebrafish as a model, given its strengths in genetic manipulation and imaging, which is enhanced in our previously developed transparent casper strain of fish. We additionally use human pluripotent stem cell models of cancer to complement what can be done in vivo in the fish. With state-of-the-art genetic engineering and high-resolution imaging, our goal is to dissect these interactions to understand how tumors start and eventually metastasize to new locations.

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Featured News



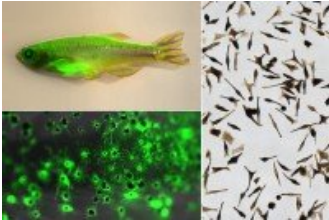
[How the Richard White Lab Studies Zebrafish to Understand Cancer](#)

Cancer biologist and oncologist Richard White studies zebrafish to understand how tumors start and why they eventually metastasize to new locations.



[Hands, Feet, and Fins: The Connection That Explains Acral Melanoma](#)

Sloan Kettering Institute scientists are using zebrafish to understand human skin cancer that attacks the hands and feet.



[Why Are Only Some Cells ‘Competent’ to Form Cancer? MSK Scientists Say Context Is Key](#)

Experiments with zebrafish and human pluripotent stem cells reveal the necessary ingredients, besides genetic mutations, that fuel the development of melanoma.

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Publications Highlights

Baggiolini A⁺, Callahan SJ⁺, Montal E, Weiss JM, Trieu T, Tagore MM, Tischfield SE, Walsh RM, Suresh S, Fan Y, Campbell NR, Perlee SC, Saurat N, Hunter MV, Simon-Vermot T, Huang TH, Ma Y, Hollmann T, Tickoo SK, Taylor BS, Khurana E, Koche RP, Studer L*, White RM* (2021). *co-authors, *co-corresponding authors. Developmental chromatin programs determine oncogenic competence in melanoma. *Science* 373 (1104): abc1048. PMID pending.

Weiss JM, Hunter MV, Tagore M, Ma Y, Misale S, Simon-Vermot T, Campbell NR, Newell F, Wilmott JS, Johansson PA, Thompson JF, Long GV, Pearson JV, Mann GJ, Scolyer RA, Waddell N, Montal ED, Huang T, Jonsson P, Donoghue MTA, Harris CC, Taylor BS, Ariyan CE, Solit DB, Wolchok JD, Merghoub T, Rosen N, Lezcano-Lopez C, Hayward NK, White RM (2021). Anatomic position determines oncogenic specificity in melanoma. in revision, available at: <https://www.biorxiv.org/content/10.1101/2020.11.14.383083v1>

Campbell NR, Rao A, Hunter MV, Sznurkowska MK, Briker L, Zhang M, Baron M, Heilman S, Deforet M, Kenny C, Ferretti LP, Huang TH, Perlee SC, Garg M, Nsengimana J, Saini M, Montal E, Tagore M, Newton-Bishop J, Middleton MR, Corrie P, Adams DJ, Rabbie R, Aceto N, Levesque MP, Cornell RA, Yanai I, Xavier JB*, White RM* (2021). *co-corresponding authors. Cell state diversity promotes metastasis through heterotypic cluster formation in melanoma. *Developmental Cell*, 2021 Sep 13:S1534-5807(21)00677-8

Hunter MV⁺, Moncada R⁺, Weiss JM, Yanai I*, [White RM*](#) (2021). *co-authors, *co-corresponding authors. Spatial

transcriptomics reveals the architecture of the tumor/microenvironment interface, *Nature Communications*, in press, available at <https://www.biorxiv.org/content/10.1101/2020.11.05.368753v1>

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People



Richard White, MD, PhD

Cancer biologist and oncologist Richard White uses the zebrafish to dissect interactions between tumor cells and the microenvironment that promote metastasis.

Albany Medical College: M.D., Ph.D.

Yale New Haven Hospital: Internal Medicine Residency & Chief Residency

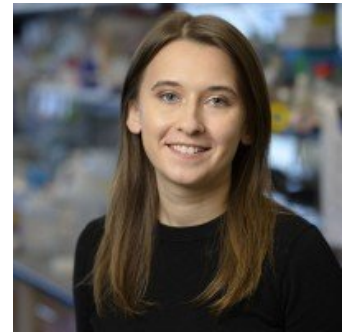
Dana Farber Cancer Institute & Massachusetts General Hospital: Medical Oncology Fellowship

Children's Hospital Boston & Harvard Medical School: Postdoctoral Fellowship

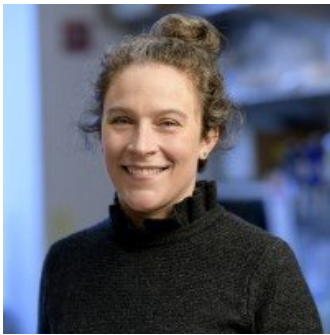
✉ whiter@mskcc.org

Email Address

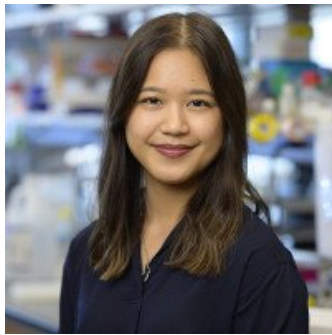
Members



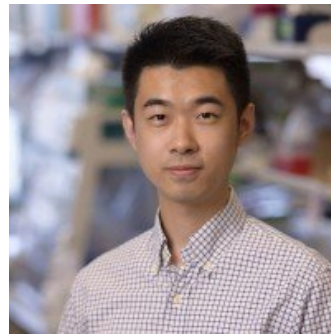
Eleanor
Johns
Graduate Student



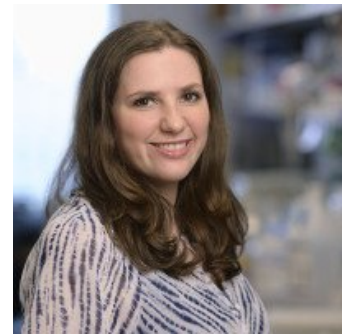
Emily B. Johnson
Assistant



Dianne Lumaquin
MD-PhD student



Yilun Ma
Graduate Student



Emily Montal
Research Fellow



Sarah
Perlee
Graduate Student



Shruthy Suresh
Research Fellow



Mohita Malay
Tagore
Research Fellow



Judy Wang
Research Technician

Lab Alumni
+

Lab Affiliations
+

Achievements

[Josie Robertson Investigator \(2012-2017\)](#)

NIH Directors New Innovator Award

Young Mentor Award, Melanoma Research Alliance

Young Investigator Award, American Association for Cancer Research/American Society of Clinical Oncology

Young Mentor Award, Harvard Medical School

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+

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