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## The Luc Morris Lab

### ABOUT US

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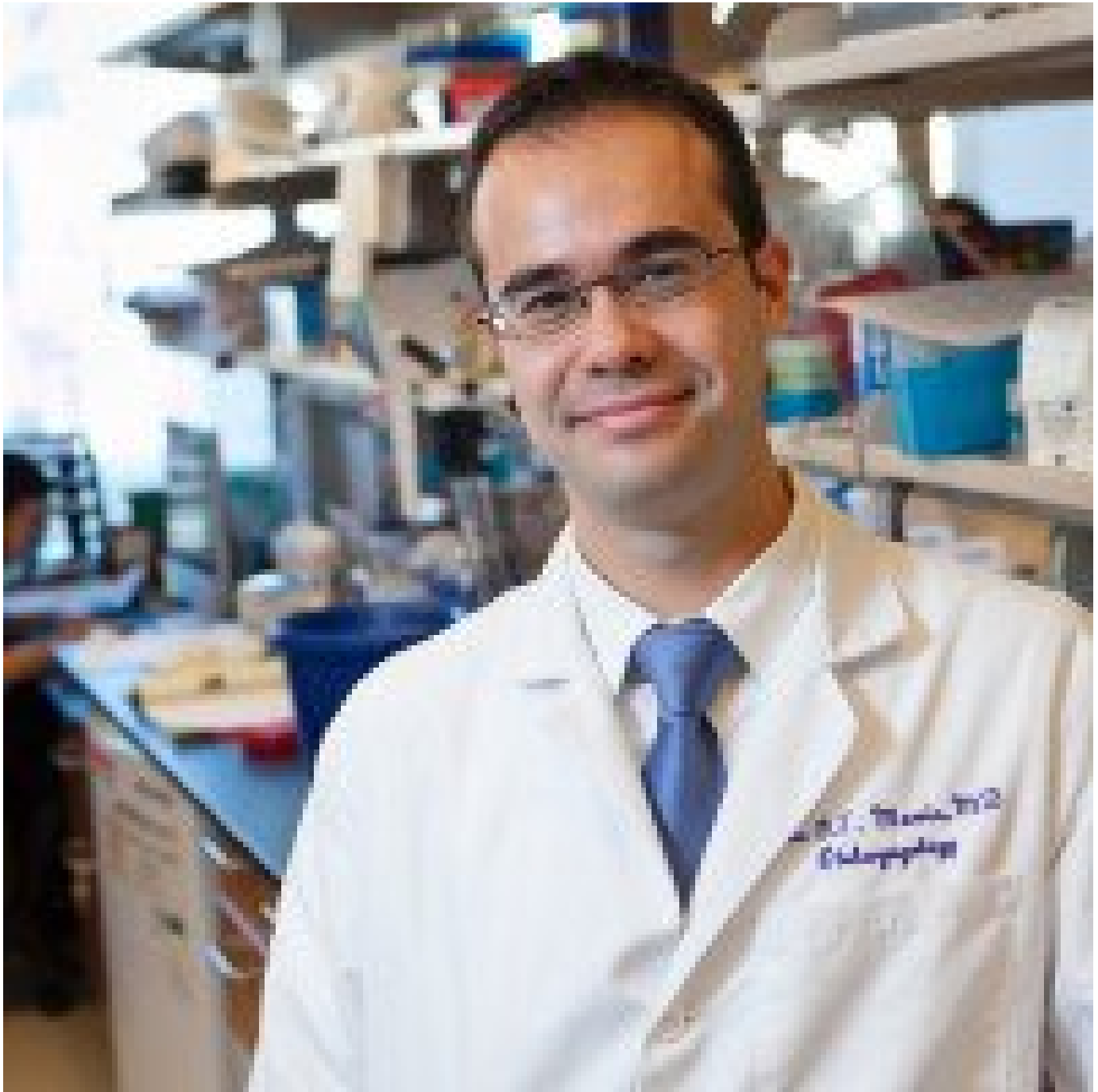
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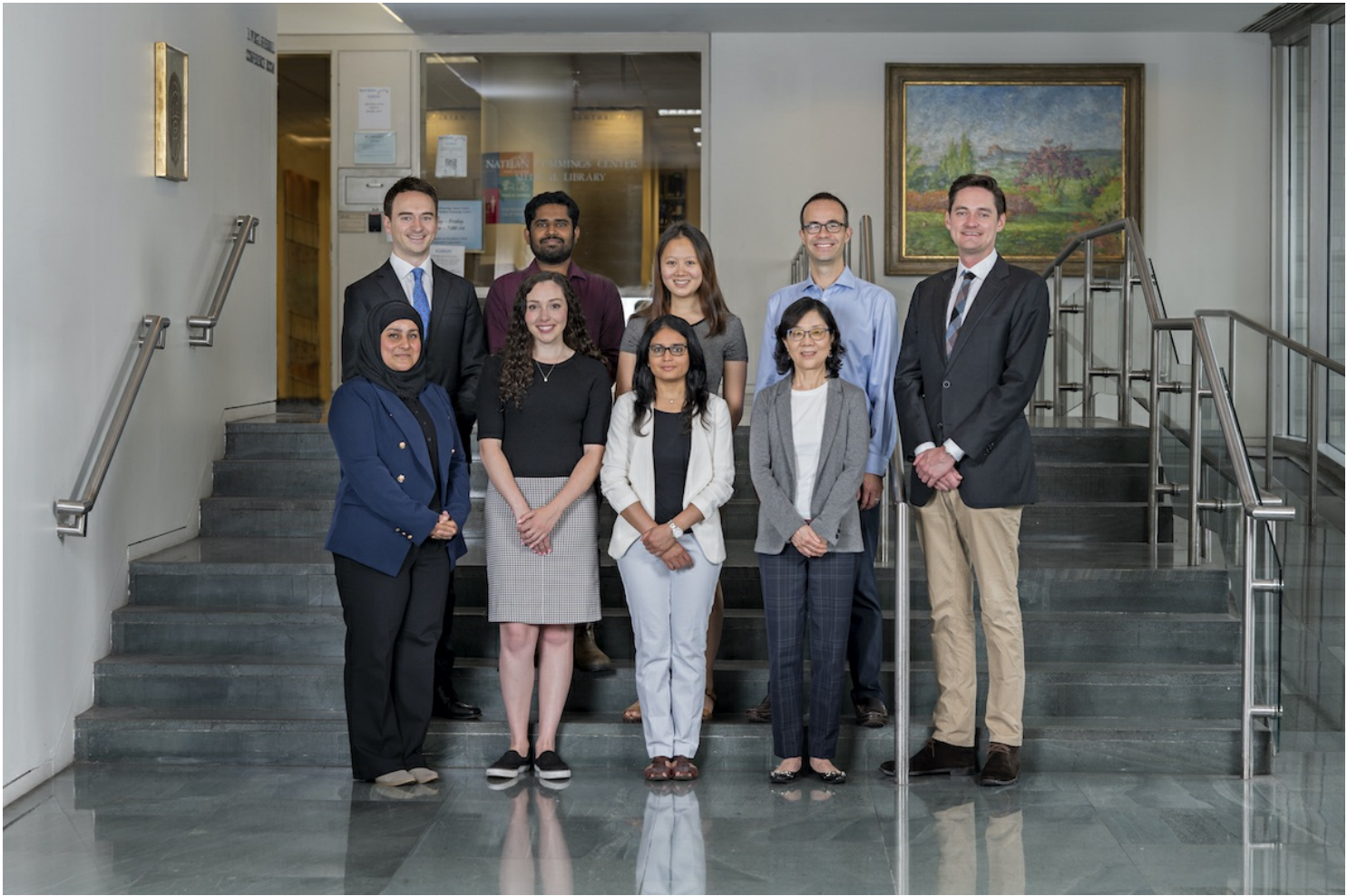
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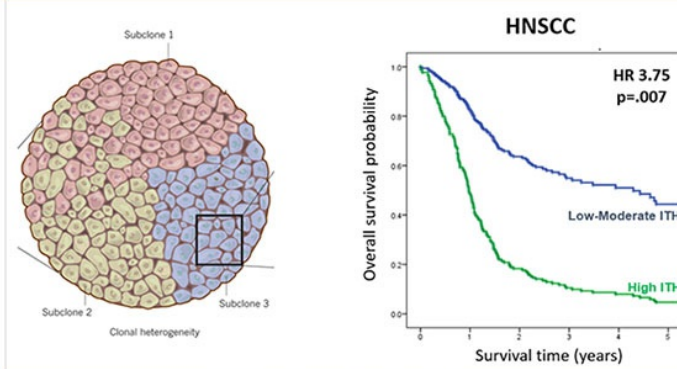
Luc Morris, MD, MSc, FACS

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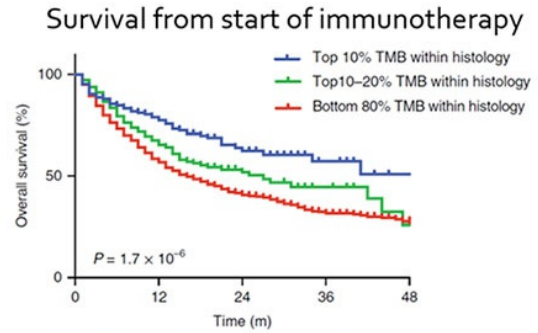
Our laboratory works at the intersection of cancer genomics, molecular biology, animal models, and patient clinical data, to better understand how the genetic features of cancer cells lead to tumor development, evasion of the immune system, and aggressive tumor behavior. This multi-faceted approach can help us to discover new biomarkers and new genetic drivers. Our group has focused for many years on cancers of the head and neck (especially squamous cell, salivary and thyroid cancers). Using this approach, we have identified new cancer genes, developed new animal models, uncovered factors that cancers use to resist therapy or escape immune surveillance, and critically assessed genetic biomarkers that predict response to immunotherapy across multiple cancer types. Through these efforts, we hope to deepen our understanding of cancer genetics, and help set the stage for the next steps of rational clinical investigation informed by molecular insights.



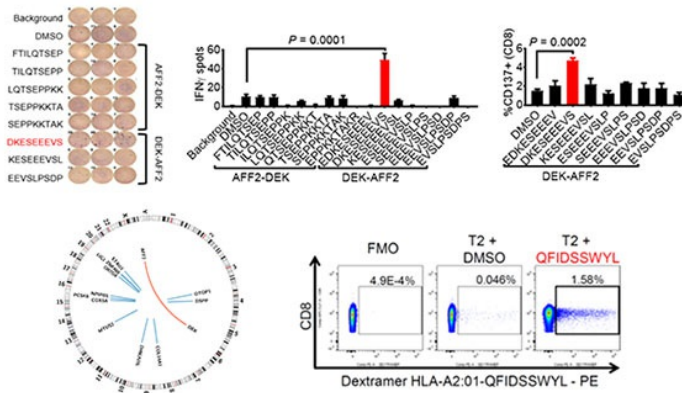
Intratumor heterogeneity (ITH) means  
resistance is *inevitable*



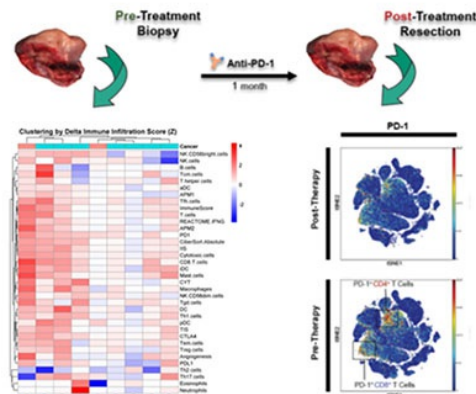
Tumor mutational load across cancer types  
1662 ICI-treated patients at MSK



Immunogenic fusion-derived neoantigens



Window of opportunity studies  
to better understand evolution and resistance



## Featured News

IN THE LAB



### [Clearing the Fog around Tumor Mutational Burden](#)

MSK researchers shed light on how the number of mutations in a tumor affect a patient's response to immunotherapy drugs.

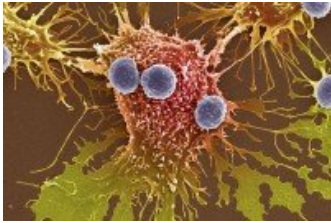
FINDING



## [One Patient's Exceptional Response Leads to a Surprising Discovery about Immunotherapy](#)

MSK researchers learn that some cancers may respond to checkpoint inhibitor drugs because of changes called gene fusions.

### FINDING



## [Tumor Mutational Burden Can Help Predict Response to Immunotherapy in Many Different Cancers](#)

Investigators confirmed that people whose tumors have a high tumor mutational burden and were treated with immunotherapy lived longer.

## Publications Highlights

[Valero C, Lee M, Hoen D, Wang J, Nadeem Z, Patel N, Postow MA, Shoushtari AN, Plitas G, Balachandran VP, Smith JJ, Crago AM, Long Roche KC, Kelly DW, Samstein RM, Rana S, Ganly I, Wong RJ, Hakimi AA, Berger MF, Zehir A, Solit DB, Ladanyi M, Riaz N, Chan TA, Seshan VE, Morris LG. The association between tumor mutational burden and prognosis is dependent on treatment context. \*Nature Genetics\* 2021; 53:11-15.](#)

[Samstein RM, Lee CH, Shoushtari AN, Hellmann MD, Shen R, Janjigian YY, Barron DA, Zehir A, Jordan EJ, Omuro A, Kaley TJ, Kendall SM, Motzer RJ, Hakimi AA, Voss MH, Russo P, Rosenberg J, Iyer G, Bocher BH, Bajorin DF, Al-Ahmadie HA, Chaft JE, Rudin CM, Riely GJ, Baxi S, Ho AL, Wong RJ, Pfister DG, Wolchok JD, Barker CA, Gutin PH, Brennan CW, Tabar V, Mellinger IK, DeAngelis LM, Ariyan CE, Lee N, Tap WD, Gounder MM, D'Angelo SP, Saltz L, Stadler ZK, Scher HI, Baselga J, Razavi P, Klebanoff CA, Yaeger R, Segal NH, Ku GY, DeMatteo RP, Ladanyi M, Rizvi NA, Berger MF, Riaz N, Solit DB, Chan TA, Morris LG. Tumor mutational load predicts survival after immunotherapy across multiple cancer types. \*Nature Genetics\* 2019;51:202-206.](#)

[Yang W, Lee KW, Srivastava RM, Kuo F, Krishna C, Chowell D, Makarov V, Hoen D, Dalin MG, Wexler L, Ghossein R, Katabi N, Nadeem Z, Cohen MA, Tian SK, Robine N, Arora K, Geiger H, Agius P, Bouvier N, Huberman K, Vanness K, Havel JJ, Sims J, Samstein RM, Mandal R, Tepe J, Ganly I, Ho AL, Riaz N, Wong RJ, Shukla N, Chan TA, Morris LG. Immunogenic neoantigens derived from gene fusions stimulate T cell responses. \*Nature Medicine\* 2019;25:767-775. PMID: 31011208](#)

[Dalín MG, Katabi N, Persson M, Lee KW, Makarov V, Desrichard A, Walsh LA, West L, Nadeem Z, Ramaswami D, Havel JJ, Kuo F, Chadalavada K, Nanjangud G, Riaz N, Ho AL, Antonescu CR, Ghossein R, Stenman G, Chan TA, Morris LGT. Multi-dimensional genomic analysis of myoepithelial carcinoma identifies prevalent oncogenic gene fusions. \*Nature Communications\* 2017;8\(1\):1197. PMID: PMC5662567](#)

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Valero C, Lee M, Hoen D, Weiss K, Kelly DW, Adusumilli PS, Paik PK, Plitas G, Ladanyi M, Postow MA, Ariyan CE, Shoushtari AN, Balachandran VP, Hakimi AA, Crago AM, Long Roche KC, Smith JJ, Ganly I, Wong RJ, Patel SG, Shah JP, Lee NY, Riaz N, Wang J, Zehir A, Berger MF, Chan TA, Seshan VE, Morris LG. Pretreatment neutrophil-to-lymphocyte ratio and mutational burden as biomarkers of tumor response to immune checkpoint inhibitors. *Nature Communications* 2021 [ePub]

[View All Publications](#)

## People





Luc Morris, MD, MSc, FACS

Luc Morris is a physician-scientist whose laboratory studies how tumor genetics influence the development of cancer, escape from immune surveillance, and immunotherapy outcomes in cancers of the head and neck and other sites.

[View physician profile](#)  
Physician profile

Members



Fengshen Kuo  
Bioinformatics Engineer III

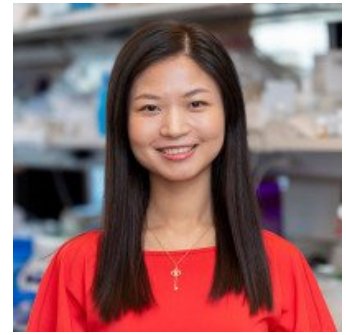


Zaineab Nadeem  
Lab Manager

Manu Prasad  
Postdoctoral

Hannah Sfreddo  
Medical Student

Joris Vos  
Postdoctoral



Jingming Wang

Research Scholar

Karena  
Zhao  
Medical Student

Lab Affiliations  
+

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Clinical Office

 [646-888-2783](tel:646-888-2783)  
Lab Phone

## Disclosures

Doctors and faculty members often work with pharmaceutical, device, biotechnology, and life sciences companies, and other organizations outside of MSK, to find safe and effective cancer treatments, to improve patient care, and to educate the health care community.

MSK requires doctors and faculty members to report (“disclose”) the relationships and financial interests they have with external entities. As a commitment to transparency with our community, we make that information available to the public.



Luc Morris discloses the following relationships and financial interests:

Personal Genome Diagnostics

Intellectual Property Rights

The information published here is for a specific annual disclosure period. There may be differences between information on this and other public sites as a result of different reporting periods and/or the various ways relationships and financial interests are categorized by organizations that publish such data.

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This page and data include information for a specific MSK annual disclosure period (January 1, 2022 through disclosure submission in spring 2023). This data reflects interests that may or may not still exist. This data is updated annually.

Learn more about MSK's COI policies [here](#). For questions regarding MSK's COI-related policies and procedures, email MSK's Compliance Office at [ecoi@mskcc.org](mailto:ecoi@mskcc.org).

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