

Memorial Sloan Kettering's **Tow Center for Developmental Oncology** presents

# The Robert Steel Symposium in Developmental Oncology

**MAY 2-3, 2022**

ZUCKERMAN RESEARCH CENTER  
417 EAST 68<sup>TH</sup> STREET  
NEW YORK, NY

This symposium will bring together expert faculty from across the country to discuss the latest discoveries into the molecular mechanisms of cancers in children and young adults, and the development of new approaches for their definitive therapy and control.

[mskcc.org/DevelopmentalOncology](https://mskcc.org/DevelopmentalOncology)



Memorial Sloan Kettering  
Cancer Center

# Overview

**The Robert Steel Symposium in Developmental Oncology** will bring together outstanding scientists from across the country to discuss the latest discoveries into the molecular mechanisms of cancers in children and young adults and the development of new approaches for their definitive therapy and control. The symposium is the first of its kind which is dedicated to new science at the interface of human development and cancer pathogenesis. This program will feature interactive discussions of fundamental and translational research to address unanswered questions in the field of developmental oncology.

There are **many unanswered questions** that need to be addressed for childhood and young adult cancers:

- What causes cancer in children and young adults without inheritance of cancer-predisposing mutations or exposure to environmental mutagens? How do predisposing alleles and exposures contribute to cancer development?
- What developmental processes are dysregulated to cause mutations and cell transformation in otherwise healthy tissues?
- How do mutations in developmental pathways involving transcription factors and epigenetic signaling cause cancer?
- How do we design effective therapeutics to block, activate, and modulate protein interactions that control transcription factors and other developmental regulators?
- How do we identify targets for immune therapy in developmental tumors that have relatively few mutations?

This **two-day live in-person symposium** will provide an intimate and exciting setting to share new advances for these questions. It will also allow an opportunity for established and young investigators to discuss new questions and interdisciplinary approaches of relevance to young-onset cancer biology.

The **target audience** for this symposium includes scientists, physicians, APPs, nurses, and other healthcare providers interested in learning the latest advances in our understanding of the biology and therapy of childhood cancers. We are pleased to **invite students and trainees to attend this symposium on a complimentary basis.**

## COURSE ORGANIZERS

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**Alex Kentsis, MD, PhD**  
Associate Member  
Molecular Pharmacology Program  
Director, Tow Center for Developmental Oncology  
Memorial Sloan Kettering Cancer Center



**Andrew Kung, MD, PhD**  
Chair, Department of Pediatrics  
Memorial Sloan Kettering Cancer Center



**Agata Smogorzewska, MD, PhD**  
Associate Professor  
The Rockefeller University

## COURSE SPEAKERS

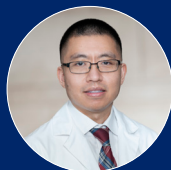
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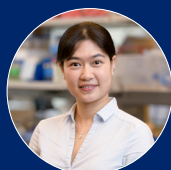
**Sam Behjati, BMBCh, PhD**  
Group Leader, Wellcome Sanger Institute  
Cambridge University



**Ester Calvo Fernández, PharmD**  
PharmD, PhD Candidate  
Columbia University



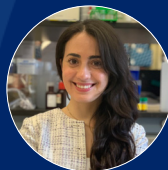
**Jason Chan, MD, PhD**  
Instructor, Sarcoma Medical Oncology Service -  
Postdoc, Tammela lab  
Memorial Sloan Kettering Cancer Center



**Sisi Chen, PhD**  
Research Associate  
Memorial Sloan Kettering Cancer Center



**Adam Durbin, MD, PhD**  
Assistant Member  
Division of Molecular Oncology  
Department of Oncology  
St. Jude Children's Research Hospital



**Arielle Elkrief, MD**  
Research Fellow, Ladanyi Lab  
Memorial Sloan Kettering Cancer Center



**Katherine Gadek, PhD**  
Damon Runyon-Sohn Pediatric Cancer Fellow  
St. Jude Children's Research Hospital



**Liron Grossmann, MD**  
Hematology-oncology fellow  
Children's Hospital of Philadelphia

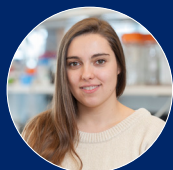
# COURSE SPEAKERS



**Alejandro Gutierrez, MD**  
Associate Professor of Pediatrics  
Boston Children's Hospital



**Zulekha Gadeer, PhD**  
Postdoctoral Scholar  
University of California, San Francisco



**Luz Jubierre Zapater, PhD**  
Memorial Sloan Kettering Cancer Center



**Miguel Rivera, MD**  
Associate Professor of Pathology  
Massachusetts General Hospital  
Harvard Medical School



**Claudia Kleinman, PhD**  
Assistant Professor  
Department of Human Genetics  
McGill University



**Charles Roberts, MD, PhD**  
Director, Comprehensive Cancer Center  
St. Jude Children's Research Hospital



**Coraline Mlynarczyk, PhD**  
Research Associate in Medicine  
Weill Cornell Medicine



**Kimberly Stegmaier, MD**  
Co-Director, Pediatric Hematologic  
Malignancy Program  
Dana-Farber Cancer Institute  
Harvard Medical School



**Michelle Monje-Deisseroth, MD, PhD**  
Professor of Neurology and, by Courtesy,  
of Neurosurgery, of Pediatrics, of Pathology  
and of Psychiatry and Behavioral Sciences  
Stanford University



**Palaniraja Thandapani, PhD**  
Postdoctoral Fellow  
NYU School of Medicine



**Anand Patel, MD, PhD**  
Instructor  
St. Jude Children's Research Hospital



**Andrew Webster, PhD**  
Rockefeller University



**Maxim Pimkin, MD, PhD**  
Instructor in Pediatrics, Damon Runyon-Sohn Fellow  
Harvard Medical School



**Peng Wu, MD, PhD**  
Instructor  
Stanford University School of Medicine

## FACULTY DISCLOSURE

It is the policy of MSK to make every effort to insure balance, independence, objectivity, and scientific rigor in all continuing medical education activities which it provides as an ACCME accredited provider. In accordance with ACCME guidelines and standards, all faculty participating in an activity provided by MSK are expected to disclose any significant financial interest or other relationship with the manufacturer(s) of any commercial product(s) and/or provider(s) of commercial services which are discussed by the faculty members in an educational presentation. As required by the ACCME, when an unlabeled use of a commercial product or an investigational use not yet approved for any purpose is discussed during an educational activity, MSK requires the speaker to disclose that the product is not labeled for the use under discussion or that the product is still investigational.

# Agenda

Each presentation will conclude with a Q&A with the presenter.

MONDAY, MAY 2, 2022		
8:30 AM	Breakfast and Check-in	
9:00 AM	Welcome and Introduction	Alex Kentsis, MD, PhD
SIGNALING/TRANSCRIPTIONAL REGULATION		
9:30 AM	Lessons Learned from the Pediatric Cancer Dependency Map	Kimberly Stegmaier, MD
10:05 AM	Ep300 Selectively Controls the Enhancer Landscape of Mycn-Amplified Neuroblastoma	Adam Durbin, MD, PhD
10:20 AM	Prospective Clinical Genomic Profiling of Ewing Sarcoma: Erf and Fgfr1 Mutations as Recurrent Secondary Alterations of Potential Biological and Therapeutic Relevance	Arielle Elkrif, MD
10:35 AM	Primary Patient-Derived Hepatoblastoma Tumoroids Depend on Receptor Tyrosine Kinase Signaling in Addition to Constitutive Wnt Activation	Peng Wu, MD, PhD
10:50 AM	Direct Gene-Regulatory Functions of Core Myeloid Transcription Factors	Max Pimkin, MD, PhD
11:05 AM	A Systems Biology Approach to Defining Tumor Heterogeneity, Prognostic and Targetable Master Regulator Protein Signatures from Bulk and Single Cell Rna-Seq in Diffuse Midline Glioma	Ester Calvo Fernández, PharmD
11:20 AM	Break	
11:35 AM	SWI/SNF (BAF) Complex Mutations in Cancer: Mechanisms and Vulnerabilities	Charles Roberts, MD, PhD
12:10 PM	Mechanisms of Chromatin Regulation by EWS Oncogenic Fusion Proteins	Miguel Rivera, MD
12:45 PM	Lunch	
TUMOR LINEAGE/DEVELOPMENT		
1:45 PM	Reconstructing the Embryology of Childhood Tumours	Sam Behjati, BMBCh, PhD
2:20 PM	An Ancient DNA Transposase Responsible for Human Brain Development	Luz Jubierre Zapater, PhD
2:35 PM	Fanconi Anemia Pathway Deficiency Drives Copy Number Variation in Squamous Cell Carcinomas	Andrew Webster
2:50 PM	Investigating the Evolution of Undifferentiated Soft Tissue Sarcomas in Mouse Models	Jason Chan, MD, PhD
3:05 PM	Embryonal Rhabdomyosarcoma Arises from a Unique Hedgehog-Competent Endothelial Progenitor	Kate Gadek, PhD
3:20 PM	Btg1 Mutation Yields Super-Competitive B Cells Primed for Malignant Transformation	Coraline Mlynarczyk, PhD
3:35 PM	Impaired Ras Proteolysis Predisposes To Cancers and Drives Clonal Hematopoietic Transformation	Sisi Chen, PhD
3:50 PM	Epigenomic Engraving of Developmental Origins in High-grade Gliomas	Claudia Kleinman, PhD
4:25 PM	Closing Remarks	Agata Smogorzewska, MD, PhD
4:40 PM	Adjourn	



## NETWORKING RECEPTION

6:00-9:00 PM

We invite symposium attendees and faculty to a networking reception after the symposium adjourns on day one.

### Upstairs at The Kimberly Hotel

145 E 50th Street  
New York, NY

# Agenda

Each presentation will conclude with a Q&A with the presenter.

TUESDAY, MAY 3, 2022		
9:00 AM	Breakfast and Check-in	
9:35 AM	Welcome and Introduction	Andrew Kung, MD, PhD
MECHANISMS OF RESISTANCE/NEW TARGETS		
9:45 AM	Neuron-glia Interactions in Health and Disease: From Cognition to Cancer	Michelle Monje-Deisseroth, MD, PhD
10:20 AM	Choline Kinase A Is Required For Alkylating Agent Resistance in High-Risk Acute Childhood Leukemias	Alejandro Gutierrez, MD
10:55 AM	Targeting Trna Deregulation By Dietary Amino Acid Restriction, A Potential New Therapeutic Avenue In T-Cell Acute Lymphoblastic Leukemia	Palaniraja Thandapani, PhD
11:10 AM	Mesoderm Progenitor States Drive Drug Resistance and Recurrence in Pediatric Rhabdomyosarcoma	Anand Patel, MD, PhD
11:25 AM	NF- $\kappa$ B is a Master Regulator of Resistance to Therapy in High-risk Neuroblastoma	Liron D. Grossmann, MD
11:40 AM	Targeting Tgf $\beta$ Pathway Dependencies In Group 3 Medulloblastoma	Zulekha Qadeer, PhD
11:55 AM	Open Forum and Closing Remarks	Alex Kentsis, MD, PhD
12:15 PM	Lunch	
2:00 PM	Adjourn	

## Accreditation

Memorial Sloan Kettering Cancer Center is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

## AMA Credit Designation Statement

Memorial Sloan Kettering Cancer Center designates this live activity for a maximum of **9.00 AMA PRA Category 1 Credits™**. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

**Instructions for how to complete an evaluation and claim credit will be emailed to attendees after the symposium concludes.**





# Registration

**All Healthcare Providers: \$25**

**Industry Professionals: \$45\***

**Students and Trainees: complimentary\*\***

Register online at: [mskcc.org/DevelopmentalOncology](https://mskcc.org/DevelopmentalOncology)

\*Industry professionals may attend MSK CME activities for their own education. Marketing, sales, and promotion of products and services is strictly prohibited at MSK CME activities. For more information, please visit website.

## **In-person Attendance Requirements**

All in-person attendees at MSK CME events must be fully vaccinated against COVID-19 at least two (2) weeks prior to the event. A copy of your COVID-19 vaccination card(s) must be uploaded during registration. All in-person attendees are required to wear masks at all times at all MSK locations (regardless of vaccination status). Please review the current Health & Safety Guidelines on our website for more information.

## **Registration Discounts/Promotions**

- \*\*We are pleased to invite students and trainees to attend this symposium on a complimentary basis. If you are a student or trainee interested in attending, please email [devonc@mskcc.org](mailto:devonc@mskcc.org) for a promotional code (registration is required in order to attend).
- For students, residents, fellows, and postdocs in need of financial support for travel and hotel, please email [devonc@mskcc.org](mailto:devonc@mskcc.org) a request explaining your needs in 250 words or less.
- A registration discount is available for MSK Alumni and MSK Cancer Alliance to attend a MSK CME course. If you are a member of one of these groups, contact [cme@mskcc.org](mailto:cme@mskcc.org) for details.
- Registration is complimentary for all MSK employees; however, you must complete registration through the 'Register' tab above in order to attend this course. If you are registered for this course and are unable to attend, please notify [cme@mskcc.org](mailto:cme@mskcc.org).
- Please note that after your payment has been processed, no further promotional discounts or adjustments will be made to your registration.

## **Cancellation Policy**

Registration for this symposium is non-refundable. MSK CME reserves the right to cancel or postpone any course due to unforeseen circumstances. In the unlikely event, we must cancel or postpone this course, you will be notified via email from MSK CME ([cme@mskcc.org](mailto:cme@mskcc.org)). We will refund the registration fee in full but are not responsible for any related costs, charges, or expenses to participants, including fees incurred by airline/travel/lodging agencies. At any time, you may substitute another registrant in your place after contacting MSK CME with the relevant information. Please note that if it has been more than 120 days since payment was processed, a W9 form must be submitted in order to process your refund and your refund will be issued in the form of check payment. Refunds are not subject to tax.

If you are not feeling well or exhibiting any symptoms of COVID-19 please refrain from attending and contact MSK CME ([cme@mskcc.org](mailto:cme@mskcc.org)).



**Memorial Sloan Kettering  
Cancer Center**

# Live Presentations

<b>An Ancient DNA Transposase Responsible for Human Brain Development</b>	PRESENTING AUTHOR	Luz Jubierre Zapater, PhD	
	CO-AUTHOR(S)	Makiko Yamada Ross Keller Elias, Rodriguez-Fos, PhD Merce Planas-Felix, PhD Sara Lewis, PhD Daniel Cameron, BS Phillip Demarest, BS Anika Nabila, BS Paul Bering, MS Sandeep S. Reddy Casie Reed, BS Hiromichi Suzuki Jake Vaynshteyn	
<b>Btg1 Mutation Yields Super-Competitive B Cells Primed for Malignant Transformation</b>	PRESENTING AUTHOR	Coraline Mlynarczyk, PhD	
	CO-AUTHOR(S)	Matt Teater, PhD Juhee Pae, PhD Christopher Chin Ling Wang Jonatan Ersching, PhD Ersilia Barin Hui Poh Amy Chadburn, MD Zhengming Chen, PhD, MPH Hannah Isles, PhD	
<b>Choline Kinase A Is Required for Alkylating Agent Resistance In High-Risk Acute Childhood Leukemias</b>	PRESENTING AUTHOR	Alejandro Gutierrez, MD	
	CO-AUTHOR(S)	Kimberly Bodaar, MD Anais Barthe, PharmD, PhD Angelo D'Alessandro, PhD Eric Aboagye, PhD	
<b>Direct Gene-Regulatory Functions of Core Myeloid Transcription Factors</b>	PRESENTING AUTHOR	Maxim Pimkin, MD, PhD	
	CO-AUTHOR(S)	Taku Harada, MS Jeremie Kalfon, MS Monika Perez, BS Kenneth Eagle, PHD, MBA, MS Kimberly Stegmaier, MD, PhD Stuart Orkin, MD, PhD	
<b>Embryonal Rhabdomyosarcoma Arises from a Unique Hedgehog-Competent Endothelial Progenitor</b>	PRESENTING AUTHOR	Katherine Gadek, PhD	
	CO-AUTHOR(S)	Casey Langdon, PhD Madeline Bush, MS Myron Evans, PhD Catherine Drummond, PhD Hongjian Jin, PhD Jerold Rehg, DVM Mark Hatley, MD, PhD	
<b>Ep300 Selectively Controls the Enhancer Landscape of Mycn-Amplified Neuroblastoma</b>	PRESENTING AUTHOR	Tingjian Wang, MD	
	CO-AUTHOR(S)	Virangika Wimalasena, BS Mark Zimmerman, MB, PhD Deyao Li, PhD	
<b>Fanconi Anemia Pathway Deficiency Drives Copy Number Variation in Squamous Cell Carcinomas</b>	PRESENTING AUTHOR	Andrew Webster, PhD	
	CO-AUTHOR(S)	Mathijis A. Sanders Peter J. Campbell Agata Smogorzewska, MD, PhD	
<b>Impaired Ras Proteolysis Predisposes to Cancers and Drives Clonal Hematopoietic Transformation</b>	PRESENTING AUTHOR	Sisi Chen, PhD	
	CO-AUTHOR(S)	Rahul Vedula, MD Antonio Cuevas Navarro, BS Bin Lu, PhD Simon Hogg, PhD Eric Wang, PhD Salima Benbarche, PhD Benjamin Durham, MD	Sebastien Monette, DVM Neal Rosen, MD, PhD Frank McCormick, PhD Coleman Lindsley, MD, PhD Pau Castel, PhD Michael Walsh, MD Omar Abdel-Wahab, MD



<b>Investigating The Evolution of Undifferentiated Soft Tissue Sarcomas in Mouse Models</b>	PRESENTING AUTHOR	Jason Chan, MD, PhD	
	CO-AUTHOR(S)	Jonathan Rub, BS Carleigh Sussman, BS Cristina Antonescu, MD William Tap, MD Sam Singer, MD Doron Betel, PhD Tuomas Tammela, MD, PhD	
<b>Mesoderm Progenitor States Drive Drug Resistance and Recurrence In Pediatric Rhabdomyosarcoma</b>	PRESENTING AUTHOR	Anand Patel, MD, PhD	
	CO-AUTHOR(S)	Xiang Chen, PhD Xin Huang, PhD Elizabeth Stuart, MD Michael Dyer, PhD	
<b>NF-κB is a Master Regulator of Resistance to Therapy in High-risk Neuroblastoma</b>	PRESENTING AUTHOR	Liron Grossmann, MD	
<b>Primary Patient-Derived Hepatoblastoma Tumoroids Depend on Receptor Tyrosine Kinase Signaling in Addition to Constitutive Wnt Activation</b>	PRESENTING AUTHOR	Peng Wu, MD, PhD	
	CO-AUTHOR(S)	Simon Bucher, PhD Deviana Burhan, BS Amar Nijagal, MD Arun Rangaswami, MD Bruce Wang, MD, PhD Roel Nusse, PhD	
<b>Prospective Clinical Genomic Profiling of Ewing Sarcoma: Erf And Fgfr1 Mutations as Recurrent Secondary Alterations Of Potential Biological and Therapeutic Relevance</b>	PRESENTING AUTHOR	Arielle Elkrief, MD	
	CO-AUTHOR(S)	Koichi Ogura, MD Anita S. Bowman, MSc Richard P. Koche, PhD Ryma Benayed, PhD Audrey Mauguen, PhD Elisa de Stanchina, PhD Paul A. Meyers, MD	John H. Healey, MD William D. Tapp, MD Neerav Shukla, MD Charles Sawyers, MD Rohit Bose, MD Emily Slotkin, MD Marc Ladanyi, MD
<b>Targeting Tgfb Pathway Dependencies in Group 3 Medulloblastoma</b>	PRESENTING AUTHOR	Zulekha Qadeer, PhD	
	CO-AUTHOR(S)	William Weiss, MD, PhD	
<b>Targeting Trna Dereglulation by Dietary Amino Acid Restriction, A Potential New Therapeutic Avenue In T-Cell Acute Lymphoblastic Leukemia</b>	PRESENTING AUTHOR	Palaniraja Thandapani, Phd	

The **Tow Foundation** has been a leading benefactor of Memorial Sloan Kettering since 1976, supporting areas including cell therapies, inflammation and cancer, radiotheranostics, skin cancer research, and, especially, pediatric cancer research. The Foundation's visionary and generous 2018 commitment established the **Tow Center for Developmental Oncology**, which seeks to unite scientists across MSK to develop fundamental insights into the molecular mechanisms of cancers in children and young adults and to devise new approaches for definitive therapy and control.

The **Robert Steel Foundation for Pediatric Cancer Research** was established to honor the memory of Robert Steel, who died in 1984 at the age of eighteen after a heroic two-year struggle against rhabdomyosarcoma. Throughout the years, the Foundation supported MSK programs and initiatives devoted to speeding progress against childhood cancers, and its farsighted generosity has made **The Robert Steel Symposium in Developmental Oncology** possible. By bringing together leading scientists to address the latest challenges and opportunities in pediatric cancer research and treatment, **The Robert Steel Symposium in Developmental Oncology** continues to advance the vital work launched by the **Robert Steel Foundation for Pediatric Cancer Research** more than three decades ago.

## Hotels

We are pleased to offer symposium attendees a **special discounted rate** at two hotels in the vicinity of Memorial Sloan Kettering:

**Courtyard Marriot, Midtown East**  
**866 3rd Avenue**  
**New York, NY 10022**

To receive the MSK discounted rate, please identify yourself as attending an MSKCC event when booking over the phone at +1 (212) 644-1300.

**The Kimberly Hotel**  
**145 E 50th Street**  
**New York, NY 10022**

Please email [reservations@kimberlyhotel.com](mailto:reservations@kimberlyhotel.com) or call +1 (212) 702-1600 and identify yourself as attending an event at "Memorial Sloan Kettering" to receive the MSK discounted rate on any room.



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