

An AACR Special Conference in Cancer Research  
**DNA Methylation, Clonal Hematopoiesis, and Cancer**  
February 1-4, 2025 | The Westin San Diego Gaslamp Quarter | San Diego, CA

**COCHAIRS:**

Stephen B. Baylin, Johns Hopkins University School of Medicine, Baltimore, MD  
Margaret A. Goodell, Baylor College of Medicine, Houston, TX  
Peter A. Jones, Van Andel Institute, Grand Rapids, MI

*Keynote lectures*      30-minute presentations, 10-minute Q&A  
*Plenary lectures*      20-minute presentations, 5-minute Q&A  
*Short-talks*            10-minute presentation, 2-minute Q&A (top-rated, thematically relevant abstracts)  
*Poster teasers*        2-minute presentations, no Q&A (highly-rated abstracts, Q&A during poster session)

**SATURDAY, FEBRUARY 1**

**Registration**

4-8 P.M.

**San Diego Ballroom Foyer**

**Welcome and Keynote Lectures**

6:30-8:10 P.M. | CME Eligible

**San Diego Ballroom**

6:30-6:40	Welcome and Opening Remarks Margaret A. Goodell, Baylor College of Medicine, Houston, TX
6:40-6:45	Introduction of Keynote Speaker Stephen B. Baylin, Johns Hopkins University School of Medicine, Baltimore, MD
6:45-7:15	The role of DNMT3A in myeloid malignancies Timothy J. Ley, Washington University School of Medicine, St. Louis, MO
7:15-7:25	Discussion / Q&A
7:25-7:30	Introduction of Keynote Speaker Peter A. Jones, Van Andel Institute, Grand Rapids, MI
7:30-8	Origins of DNA methylation alterations in cancer Peter W. Laird, Van Andel Institute, Grand Rapids, MI
8-8:10	Discussion / Q&A

**Opening Reception**

8:10-10 P.M.

*Garden Terrace- 4<sup>th</sup> floor- outside Ballroom*

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**SUNDAY, FEBRUARY 2**

**Continental Breakfast**

7-8 A.M.

*Garden Terrace*

**Plenary Session 1: Twenty-Five Years Later: New Concepts in Cancer Epigenetics**

8-9:50 A.M. | CME Eligible

*San Diego Ballroom*

8-8:05	Introduction Session Chair- Susan J. Clark
8:05-8:25	Title to be announced Susan J. Clark, Garvan Institute of Medical Research, Darlinghurst, NSW, Australia
8:25-8:35	Discussion / Q&A
8:35-8:55	Title to be announced (CDK inhibitor) Jean-Pierre J. Issa, Coriell Institute for Medical Research, Camden, NJ
8:55-9:05	Discussion / Q&A
9:05-9:25	Title to be announced Hariharan Easwaran, Johns Hopkins University School of Medicine, Baltimore, MD
9:25-9:35	Discussion / Q&A
9:35-9:45	ZNFX1 is a master regulator and tumor suppressor in epigenetically-induced pathogen mimicry, mitochondrial dysfunction and STING-dependent signaling in cancer*
	Feyruz V. Rassool, University of Maryland, Baltimore, Maryland
9:45-9:47	Discussion / Q&A

**Break**

9:50-10:10 A.M.

*Garden Terrace*

**Plenary Session 2: Interpreting Methylation Signals**

10:10 A.M.-12:20 P.M. | CME Eligible

*San Diego Ballroom*

10:10-10:15	Introduction Session Chair- Dirk Schuebeler
10:15-10:35	Controlling CpG islands

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	Dirk Schuebeler, Friedrich Miescher Institute for Biomedical Research, Basel, Switzerland
10:35-10:45	Discussion / Q&A
10:45-11:05	Title to be announced Greg Wang, Duke University School of Medicine, Durham, NC
11:05-11:15	Discussion / Q&A
11:15-11:35	DNA methylation in cancer: From knowledge to applications Manel Esteller, Josep Carreras Leukemia Research Institute, Barcelona, Spain
11:35-11:45	Discussion / Q&A
11:45-11:55	Characteristics of methylation heritability in human somatic cells* Lori D. Kregar, Wellcome Sanger Institute, Cambridge, United Kingdom
11:55-12:00	Discussion / Q&A
12:00-12:05	DNA methylation reveals metastatic colonization routes in ovarian cancer* Alexandra Lahtinen, University of Helsinki, Helsinki, Finland
12:05-12:10	Discussion / Q&A

**Lunch on Own / Free Time**

12:20-4 P.M.

(Poster setup starts at 2:30 P.M. PST)

**Plenary Session 3: DNA Methylation in a Chromatin Context**

4-6:05 P.M. | CME Eligible

*San Diego Ballroom*

4-4:05	Introduction Session Chair- Xiaodong Cheng
4:05-4:25	DNA hypomethylation and genome instability in ICF syndrome Xiaodong Cheng, The University of Texas MD Anderson Cancer Center, Houston, TX
4:25-4:35	Discussion / Q&A
4:35-4:55	Cryo-EM structure of a DNMT3A2/3B3 di-nucleosome and its role in DNA methylation
	Peter A. Jones, Van Andel Institute, Grand Rapids, MI
4:55-5:05	Discussion / Q&A
5:05-5:25	Title to be announced Margaret A. Goodell, Baylor College of Medicine, Houston, TX
5:25-5:35	Discussion / Q&A
5:35-5:45	Interplay between histone modifications and DNA methylation in cancer*

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- 5:45-5:50 Chao Lu, Columbia University, New York, New York  
Discussion / Q&A
- 5:50-6:00 Forced accumulation of R-loops through inhibition of RNase H impairs the proliferation of TET-deficient cancer cells\*  
Isaac F. López-Moyado, La Jolla Institute for Immunology, La Jolla, California
- 6:00-6:05 Discussion / Q&A

**Lightning Talks A**

6:05-6:20 P.M. | CME Eligible

*San Diego Ballroom*

Talks from highly-rated abstracts from Poster Session A  
2 minutes each, no Q&A

- 6:05-6:07 Tet2 deficiency mitigates epigenetic aging in clonal hematopoiesis\*  
Sheng Li, University of Southern California, Los Angeles, California
- 6:07-6:09 Copy number analysis of single-cell methylomes reveal distinct subclone methylation in early breast cancer\*  
Ryan M. Mulqueen, MD Anderson Cancer Center, Houston, Texas
- 6:09-6:11 Epigenetic dynamics in KMT2A-amplified leukemia\*  
Jayme Ogino, Children's Hospital Los Angeles, Los Angeles, California
- 6:11-6:13 Dnmt3a2 ensures proper enhancer DNA methylation during embryonic development\*  
Guillermo A. Urrutia, Van Andel Institute, Grand Rapids, Michigan
- 6:13-6:15 CRISPR-based investigation of CHIP mutations reveals their role in CAR-T therapy-related inflammatory toxicities\*  
Xiuli Wang, City of Hope, Duarte, California

**Poster Session A and Reception**

6:20-8:45 P.M.

*Harbor Room (3<sup>rd</sup> floor)*

Reception starts at 6:20, Posters officially run 6:45-8:45 (do not have space for separate reception then posters)

**MONDAY, FEBRUARY 3**

**Continental Breakfast**

7-8 A.M.

*Garden Terrace*

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**Plenary Session 4: Role of DNA Methylation and Hydroxymethylation in Immune Cell Function**

8-9:50 A.M. | CME Eligible

*San Diego Ballroom*

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|-----------|--|
| 8:00-8:05 | Introduction<br>Session Chair- Benjamin A. Youngblood  |
| 8:05-8:25 | Heterochromatin deregulation during hematopoietic stem progenitor cell (HSPC) aging<br>Yun Nancy Huang, Texas A&M University, Houston, TX  |
| 8:25-8:35 | Discussion / Q&A   |
| 8:35-8:55 | Title to be announced<br>Benjamin A. Youngblood, St. Jude Children's Research Hospital, Memphis, TN  |
| 8:55-9:05 | Discussion / Q&A   |
| 9:05-9:25 | Mutations in clonal haematopoiesis compromise heterochromatin integrity<br>Anjana Rao, La Jolla Institute for Immunology and University of California at San Diego, La Jolla, CA |
| 9:25-9:35 | Discussion / Q&A   |
| 9:35-9:45 | An AML-associated mutation in DNMT3A gives rise to hyperactive T cells with alloimmune and anti-leukemic activity *  |
|           | LaShanale Wallace, St. Jude Children's Research Hospital, Memphis, Tennessee   |
| 9:45-9:50 | Discussion / Q&A   |

**Break**

9:50-10:10 A.M.

**Garden Terrace**

**Plenary Session 5: Clonal Hematopoiesis**

10:10 A.M.-12:30 P.M. | CME Eligible

*San Diego Ballroom*

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|-------------|---|
| 10:10-10:15 | Introduction<br>Session Chair: Kirsten Grønbaek   |
| 10:15-10:35 | Clinical implications of clonal hematopoiesis - and the role of Vitamin C<br>Kirsten Grønbaek, Rigshospitalet, University of Copenhagen, Copenhagen, Denmark                  |
| 10:35-10:45 | Discussion / Q&A  |
| 10:45-11:05 | Elevated mitochondrial membrane potential is a therapeutic vulnerability in Dnmt3a-mutant clonal hematopoiesis<br>Jennifer Trowbridge, The Jackson Laboratory, Bar Harbor, ME |

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- 11:05-11:15 Discussion / Q&A
- 11:15-11:35 Epigenetic drivers of clonal expansion and malignant transformation in clonal hematopoiesis  
Alexander G. Bick, Vanderbilt University Medical Center, Nashville, TN
- 11:35-11:45 Discussion / Q&A
- 11:45-12:05 Dnmt3a and Tet2-driven clonal hematopoiesis have opposing effects on the pathogenesis of Alzheimer's disease  
Katherine King, Baylor College of Medicine, Houston, TX
- 12:05-12:15 Discussion / Q&A
- 12:15-12:25 High-throughput CRISPR screens uncover selective EZH2 inhibitor EPZ-6438 driving expansion of preleukemic hematopoietic stem cell with mutation in Asxl1\*  
Ieva Budriunaite, University of Dundee, Dundee, United Kingdom
- 12:25-12:27 Discussion / Q&A

**Lunch on Own / Free Time**

12:30-4:30 P.M.

**Plenary Session 6: Normal and Abnormal Methylation Patterns and Detection**

4:30-6:20 P.M. | **Not CME-Eligible**

*San Diego Ballroom*

- 4:30-4:35 Introduction  
Session Chair: Ting Wang
- 4:35-4:55 Transposable element and cancer epigenome  
Ting Wang, *Washington University in St. Louis, St. Louis, MO*
- 4:55-5:05 Discussion / Q&A
- 5:05-5:25 A DNA methylation atlas of normal human cell types  
Tommy Kaplan, The Hebrew University of Jerusalem, Jerusalem, Israel
- 5:25-5:35 Discussion / Q&A
- 5:35-5:55 Title to be announced  
Daniel D. De Carvalho, UHN Princess Margaret Cancer Centre, Toronto, ON, Canada
- 5:55-6:05 Discussion / Q&A
- 6:05-6:15 Epigenetic regulation of transposable elements to reverse cancer immune evasion\*  
Katherine B. Chiappinelli, The George Washington University, Washington, District of Columbia
- 6:15-6:20 Discussion / Q&A

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**Lighting Talks B**

6:20-6:45 P.M. | Not CME-Eligible

**San Diego Ballroom**

Talks from highly-rated abstracts from Poster Session B

2 minutes each, no Q&A

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|-----------|--|
| 6:20-6:22 | A mutant ASXL1-EHMT complex contributes to heterochromatin dysfunction in clonal hematopoiesis and chronic monomyelocytic leukemia*<br>Zhen Dong, La Jolla Institute for Immunology, La Jolla, California  |
| 6:22-6:24 | Transposable elements activation produces pan-cancer tumor-specific neoantigens*<br>Yonghao Liang, Washington University in St. Louis, St. Louis   |
| 6:24-6:26 | Promoter methylation gains in aging and cancer are independent of replication*<br>Sara-Jayne Thursby, The Sidney Kimmel Comprehensive Cancer Center at Johns Hopkins, Baltimore, Maryland  |
| 6:26-6:28 | Epigenetic landscape and gene regulations in embryonal brain tumors with multilayered rosettes (ETMR)*<br>Shanzheng Wang, Hopp Children's Cancer Center (KiTZ), German Cancer Research Center (DKFZ) and German Cancer Consortium (DKTK), and Heidelberg University, Heidelberg, Germany |
| 6:28-6:30 | Machine-learning modelling of lung cancer metastasis to the brain using alterations in DNA methylation*<br>Jeffrey A. Zuccato, University of Toronto, Toronto, Ontario, Canada   |

**Poster Session B and Reception**

6:45-9:15 P.M.

*Harbor Room (3<sup>rd</sup> floor)*

Reception starts at 6:45, Posters officially run 7:15-9:15 (do not have space for separate reception then posters)

**TUESDAY, FEBRUARY 4**

**Continental Breakfast**

7-8 A.M.

**Garden Terrace**

**Rising Star Keynote**

8-8:45 A.M. | CME Eligible

*San Diego Ballroom*

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- 8:00-8:05 Introduction of Rising Star Keynote Speaker  
Margaret A. Goodell, Baylor College of Medicine, Houston, TX
- 8:05-8:35 Biology and therapeutic targeting of cohesin-mutant myeloid malignancies  
Zuzana Tothova, Dana-Farber Cancer Institute, Boston, MA
- 8:35-8:45 Discussion / Q&A

**Break**

8:45-9 A.M.  
*Garden Terrace*

**Plenary Session 7: New DNMTis, Combinations, and Responses**

9-10:45 A.M. | CME Eligible  
*San Diego Ballroom*

- 9:00-9:05 Introduction  
Session Chair: Maria (Ken) Figueroa
- 9:05-9:25 Harnessing epigenetic profiles in MDS for the development of predictive biomarkers  
Maria (Ken) Figueroa, University of Miami, Miami, Florida
- 9:25-9:35 Discussion / Q&A
- 9:35-9:55 The need to develop new means to reverse abnormal DNA methylation in Cancer –  
Targeting UHRF1  
Stephen B. Baylin, Johns Hopkins University School of Medicine, Baltimore, MD
- 9:55-10:05 Discussion / Q&A
- 10:05-10:25 Title to be announced  
Guillermo Garcia-Manero, The University of Texas MD Anderson Cancer Center,  
Houston, TX
- 10:25-10:35 Discussion / Q&A
- 10:35-10:40 Decitabine/venetoclax reduced-toxicity induction: A very effective bridge-to-  
transplant in older AML patients with non-favorable genetics\*  
Michael Lübbert, University of Freiburg Medical Center, Freiburg, Germany
- 10:40-10:45 Discussion / Q&A

**Closing Remarks and Departure**

10:45 A.M.  
**San Diego Ballroom**

*\*Proffered talk from highly rated abstracts*