

Tom Misteli, Ph.D.



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Director, Center for Cancer Research
Laboratory of Receptor Biology and Gene Expression

NIH Distinguished Investigator

Head, Cell Biology of Genomes Group

Are your additional titles correct?

Tom Misteli is an internationally renowned cell biologist who pioneered the use of imaging approaches to study genomes and gene expression. His laboratory uses cell biological, molecular, biochemical and imaging approaches to uncover fundamental principles of genome architecture and to apply this knowledge to the development of novel diagnostic and therapeutic strategies for cancer and aging.

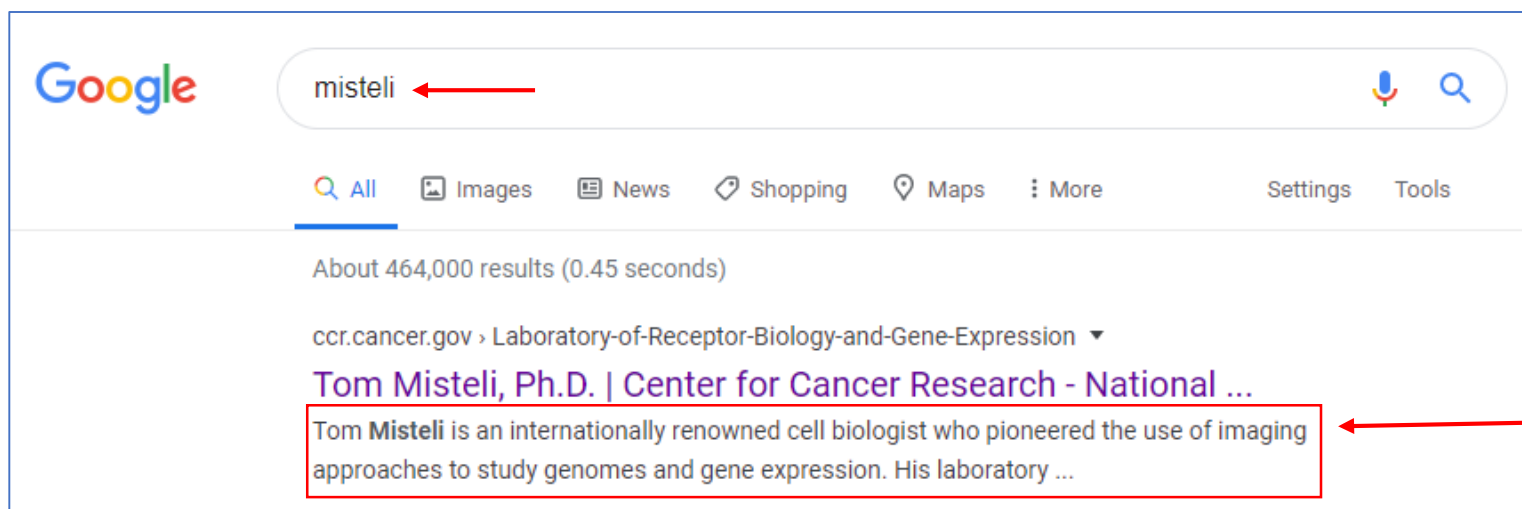
Areas of Expertise

1) chromosomes, 2) chromatin, 3) cell nucleus, 4) nuclear architecture, 5) imaging, 6) epigenetics

CONTACT INFO

Is this info. up-to-date?

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This is displayed in Google search results.

Areas of Expertise

1) chemistry, 2) biochemistry, 3) assay development, 4) metabolism, 5) epigenetics, 6) chemical proteomics



Your research summary:

- Have your projects changed?
- Keep it short and concise.

Metabolic Regulation of Epigenetic Signaling

Recent studies have shown that many enzymes active in epigenetic mechanisms of genomic regulation are sensitive to the metabolic state of the cell. A major aim of the lab is to understand the mechanisms by which metabolic perturbations influence genomic signaling mediated by chromatin modifying enzymes. Long term goals of this work include: 1) the discovery of biological mechanisms underlying oncometabolite-driven cancers, 2) the development of new diagnostics for cancers driven by metabolic mutations, and 3) the identification of small molecules which inhibit epigenetic modifications through metabolic disruption.

← Use specific keywords in your research summary too!

New Acetylation-Based Signaling Mechanisms

← Use a sub-heading (H2) for each project/topic.

Acetyl-CoA links metabolism and signaling by mediating protein and nucleic acid modifications known as acetylations, whose modulation is an emerging paradigm in cancer treatment. A major focus of the laboratory is applying chemical approaches to discover and characterize new enzymatic and non-enzymatic acetylation mechanisms involved in fundamental biology and disease. By expanding the pharmacological map of acetylation-based signaling mechanisms in cancer, these studies aim to uncover new avenues for therapeutic development.

NIH Scientific Focus Areas:

Chemical Biology, Chromosome Biology, Molecular Pharmacology, RNA Biology

View Dr. Meier's Complete Bibliography at NCBI.  To add a link to your complete bibliography, contact [Sue Fox](#)

Selected Key Publications

 Are these the 5 papers you want to display?

- Papers can be your most recent or most significant.

1. Chemoproteomic profiling of lysine acetyltransferases highlights an expanded landscape of catalytic acetylation.
Montgomery DC, Sorum AW, Meier JL.
J. Am. Chem. Soc. 136: 8669-76, 2014. [Journal Article]
2. Metabolic mechanisms of epigenetic regulation.
Meier JL.
ACS Chem. Biol. 8: 2607-2621, 2013. [Journal Article]
3. Design of sequence-specific DNA binding molecules for DNA methyltransferase inhibition.
Kang JS, Meier JL, Dervan PB.
J. Am. Chem. Soc. 136: 3687-94, 2014. [Journal Article]
4. Guiding the design of synthetic DNA-binding molecules with massively parallel sequencing.
Meier JL, Yu AS, Korf I, Segal DJ, Dervan PB.
J. Am. Chem. Soc. 134: 17814-22, 2012. [Journal Article]
5. Synthesis and evaluation of bioorthogonal pantetheine analogues for in vivo protein modification.
Meier JL, Mercer AC, Rivera H, Burkart MD.
J. Am. Chem. Soc. 128: 12174-84, 2006. [Journal Article]

Dr. Merlino obtained his B.A. summa cum laude in 1975, then went on to receive a Ph.D. in biological sciences in 1980 from the Department of Cellular and Molecular Biology at the University of Michigan, Ann Arbor. He joined the NCI in 1988. As a postdoctoral fellow in Dr. Ira Pastan's lab, Dr. Merlino was the first to report the amplification/rearrangement of the epidermal growth factor receptor (EGFR) proto-oncogene in human cancer, and as a young independent investigator, he was among the first to show that growth factors could function in vivo as oncogenes using transgenic mouse models. With long-time George Washington University collaborators, Drs. Frances Noonan and Ed DeFabo, Dr. Merlino's group also developed the first human-like mouse melanoma model and provided the first experimental evidence supporting the notion that childhood sunburn is a critical melanoma risk factor.

Dr. Merlino was Chief of the Laboratory of Cell Regulation and Carcinogenesis from 2004 to 2006. This lab, along with two others, merged into the Laboratory of Cancer Biology and Genetics (LCBG) in 2006. He then served as Co-Chief of the new Laboratory from 2006 to 2017. During this period, Dr. Merlino also served as a CCR Deputy Director (2010-2015). Currently, he is CCR's Scientific Director for Basic Research. At NIH/NCI, Dr. Merlino has served as the NIH Ombudsman for Animal Welfare, on the Steering Committee of the NCI Center of Excellence in Integrative Cancer Biology and Genomics and on the CCR Science Board.

From 2009 to 2012, Dr. Merlino was Executive Editor of *Pigment Cell and Melanoma Research*; he has also served on the Editorial Board of *Cancer Research*. Currently, he is Co-Chair of the Scientific Advisory Council, Melanoma Research Foundation and Adjunct Professor at the University of Maryland Regional College of Veterinary Medicine.

Honors and Awards

In 2016, Dr. Merlino was elected as an American Association for the Advancement of Science (AAAS) Fellow. His other honors include the Society for Melanoma Research Lifetime Achievement Award (2013) and the Aaron B. Lerner/PASPCR Special Lectureship Award (2012). Dr. Merlino has also received numerous awards throughout his career at NCI, including the NIH Director's Award (2016), the NCI Director's Award (2018, 2017, 2015), the NCI Merit Award (2009, 2002) and the NCI Outstanding Mentor Award (2008).

Add:

- Awards
- Honors
- Promotion
- Other Activities:
 - e.g., journal editor?
 - e. g., steering committee?

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Name	Position
Chi-Ping Day, Ph.D.	Staff Scientist
Lei Huang	Special Volunteer
Kerrie Marie Ph.D.	Postdoctoral Fellow (Visiting)
Helen Michael Ph.D.	Postdoctoral Fellow (CRTA)
Eva Perez Guijarro Ph.D.	Postdoctoral Fellow (Visiting)
Antonella Sassano Ph.D.	Scientist (Contr)
Yan Lin Yu, Ph.D.	Staff Scientist

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Publications

Biography

Job Vacancies

Team

Position	Keywords	Contact Name	Contact E-mail	Number of Positions
→ Postdoctoral Fellow - genomics, pancreas, chromatin	genomics, pancreas, chromatin	Efsun Arda	efsun.arda@nih.gov ✉	1

New Investigators/Clinicians/Scientists

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