

Molecular Signatures of Exposure in Cancer: A Joint NIEHS and NCI Workshop

<https://niehs.nih.gov/news/events/molecular-signatures>

Agenda

Day 1: Thursday, June 29, 2023

All times listed are Eastern Daylight Time.

11:00 a.m. Welcome and Introductory Remarks

- Daniel Shaughnessy, Ph.D., National Institute of Environmental Health Sciences (NIEHS)
- Trevor Archer, Ph.D., Deputy Director, Distinguished Investigator, NIEHS
- Ron Johnson, Ph.D., National Cancer Institute (NCI)
- Dan Gallahan, Ph.D., Director, Division of Cancer Biology, NCI

11:15 a.m. Workshop Structure and Goals

- Cheryl Walker, Ph.D., Baylor College of Medicine
- Hannah Carter, Ph.D., University of California, San Diego
- Ron Johnson, Ph.D., NCI
- Daniel Shaughnessy, Ph.D., NIEHS

11:30 a.m. Session I: Mutational Signatures of Exposure in Cancer

Session Host: Arun Pandiri, Ph.D., NIEHS

Moderator: Ludmil Alexandrov, Ph.D., University of California, San Diego

State of the Science: Emerging Opportunities and Caveats of Using Mutational Signatures of Environmental Exposures

- Serena Nik-Zainal, Ph.D., University of Cambridge

Synopsis Talks

- Paul Brennan, Ph.D., International Agency for Research on Cancer
- Maria Teresa Landi, M.D., Ph.D., NCI
- Allan Balmain, Ph.D., University of California, San Francisco

Panel Discussion

12:40 p.m. Break

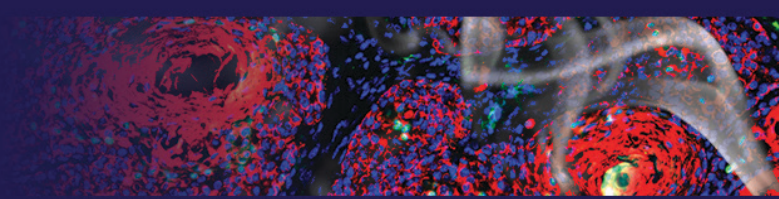
1:20 p.m. Session II: Other Data Types as Signatures of Exposure in Cancer

Session Host: Phil Daschner, M.Sc., NCI

Moderator: Scott Auerbach, Ph.D., NIEHS

State of the Science: Other Data Types as Signatures of Exposure in Cancer

- Ting Wang, Ph.D., Washington University in St. Louis



Synopsis Talks

- Cathrine Hoyoy, Ph.D., North Carolina State University
- Ben Gewurz, M.D., Ph.D., Harvard University
- Michael Fischbach, Ph.D., Stanford University

Panel Discussion

2:30 p.m. Break

2:40 p.m. Session III: Computational Challenges and Integrating Multi-Omics to Identify Signatures

Session Host: Daniel Shaughnessy, Ph.D., NIEHS

Moderator: Mona Singh, Ph.D., Princeton University

State of the Science: Why Networks Matter: Embracing Biological Complexity

- John Quackenbush, Ph.D., Harvard University

Synopsis Talks

- Teresa Przytycka, Ph.D., National Library of Medicine
- Joshua Campbell, Ph.D., Boston University
- Mark Gerstein, Ph.D., Yale University

Panel Discussion

3:50 p.m. Close of Day 1

Day 2: Friday, June 30, 2023

11:00 a.m. Welcome

- Michelle Heacock, Ph.D., NIEHS

11:05 a.m. Session IV: Challenges in Tracking Signatures of Exposures

Session Host: Michelle Heacock, Ph.D., NIEHS

Moderator: Rebecca Fry, Ph.D., University of North Carolina at Chapel Hill

State of the Science: Inducing Mutational Signatures by Environmental Carcinogens and Chemotherapeutic Agents In Vitro: Progress, Prospects, and Limitations

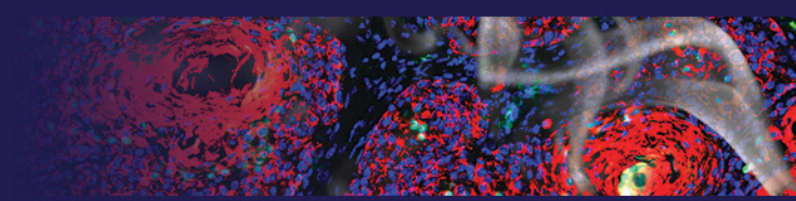
- David Phillips, Ph.D., King's College London

Synopsis Talks

- John Essigmann, Ph.D., Massachusetts Institute of Technology
- Yvonne Fondufe-Mittendorf, Ph.D., Van Andel Institute
- Ana Navas-Acien, M.D., Ph.D., Columbia University

Panel Discussion

12:15 p.m. Break



12:35 p.m. Session V: Population-Based Cancer Studies

Session Host: Somdat Mahabir, Ph.D., NCI

Moderator: Paul Brennan, Ph.D., International Agency for Research on Cancer

State of the Science: Use of Molecular Signatures of Exposures in Epidemiologic Studies of Cancer

- Wei Zheng, M.D., Ph.D., Vanderbilt University

Synopsis Talks

- Jesse Goodrich, Ph.D., University of Southern California
- Karin Michels, Sc.D., Ph.D., University of California, Los Angeles
- Loïc Le Marchand, M.D., Ph.D., University of Hawai'i

Panel Discussion

1:45 p.m. Break

2:20 p.m. Workshop Summary and Future Directions

Session Host: Ron Johnson, Ph.D., NCI

Moderators: Cheryl Walker, Ph.D., Baylor College of Medicine and
Hannah Carter, Ph.D., University of California, San Diego

Session Summaries

- Ludmil Alexandrov, Ph.D., University of California, San Diego
- Scott Auerbach, Ph.D., NIEHS
- Mona Singh, Ph.D., Princeton University
- Rebecca Fry, Ph.D., University of North Carolina at Chapel Hill
- Paul Brennan, Ph.D., International Agency for Research on Cancer

Future Directions

Panel discussion among all invited participants moderated by co-chairs

3:30 p.m. Closing Remarks

- Hannah Carter, Ph.D., University of California, San Diego
- Cheryl Walker, Ph.D., Baylor College of Medicine
- Ron Johnson, Ph.D., NCI
- Daniel Shaughnessy, Ph.D., NIEHS