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DEPARTMENT OF HEALTH AND HUMAN SERVICES

National Institutes of Health

National Toxicology Program; Notice of Public Meeting: Converging on Cancer Workshop

AGENCY: National Institutes of Health, HHS.

ACTION: Notice of Public Meeting and Registration Information.

SUMMARY: The National Toxicology Program (NTP) announces a workshop titled "Converging on Cancer" on April 29-30, 2019, to bring together researchers working in the area of cancer biology, assay development, mixtures toxicology, in silico modeling, and cancer risk assessment. The objectives of the workshop are to identify technologies and models that can be used in a systems toxicology approach for cancer risk assessment. Specific applications to understanding the joint effects of multiple chemical exposures will be discussed. The workshop will consist of plenary sessions (webcast), breakout discussion sessions, and a poster session. This workshop is open to the public. Members of the public can register to attend the workshop in person as observers or view the plenary proceedings via webcast.

DATES:

Meeting: April 29-30, 2019, Begins at 9:00 a.m. to approximately 5:00 p.m. Eastern Daylight Time (EDT).

Meeting Registration: Deadline is April 22, 2019. Registration to view the workshop via webcast is required.

ADDRESSES:

Meeting Location: William J. Clinton East Building, U.S. Environmental Protection Agency, 1201 Constitution Ave NW, Washington, D.C. 20460.

Meeting Web page: The preliminary agenda and registration are at https://ntp.niehs.nih.gov/go/coc.

Webcast: Plenary sessions of the workshop will be webcast; the URL will be provided to those who register for viewing.

FOR FURTHER INFORMATION CONTACT: Dr. Cynthia Rider, Toxicology Branch, NIEHS, P.O. Box 12233, K2–12, Research Triangle Park, NC 27709, (telephone) 984-287-3175, E-mail: cynthia.rider@nih.gov.

SUPPLEMENTARY INFORMATION:

Background: Cancer is a leading cause of mortality worldwide. While the defining feature of cancer is uncontrolled division of abnormal cells, it is a complex disease with varied presentations (i.e., different etiologies and target tissues) that involves dysregulation of multiple interconnected signaling pathways. Diverse environmental factors have been associated with the

development and progression of various cancer types. A critical question in the field of environmental health is how to harness what is known about cancer biology and associated environmental exposures to improve public health outcomes. The Converging on Cancer Workshop is aimed at providing a clear path forward for evaluating the interactions between environmental exposures and cancer biology using the latest tools in toxicology and identifying knowledge gaps that require research attention. Potential applications of this understanding include building a framework for incorporating mechanistic data into cancer risk assessment, developing effective screening tools to detect the carcinogenic potential of environmental chemicals (including mixtures), engineering safer products, and designing more effective multi-target therapeutics.

The hallmarks of cancer (1) and the key characteristics of carcinogens (2) offer two paradigms for organizing information to better understand the interactions between environmental exposures and biological systems that lead to cancer. The hallmarks of cancer represent the biological traits of tumors that allow for the unchecked growth of cancer, while the key characteristics of carcinogens begin with known human carcinogens and identify the defining properties of carcinogens. A series of webinars prior to the workshop will provide background on these frameworks. Discussion at the workshop will include recommended application of the two frameworks, clarifying terminology, the relationship between the frameworks, and the available assays for measuring effects associated with each of the hallmarks and key characteristics.

It is clear from biomonitoring studies that humans are constantly exposed to numerous structurally-diverse chemicals. A recent nomination to NTP was for development of a testing strategy to better understand how environmental chemicals might interact with multiple cancer-

relevant biological pathways to elicit mixture effects that would not be expected based on single chemical considerations. An aim of the workshop is to channel the collective wisdom of cancer biologists, toxicologists, and mixtures statisticians to propose testing approaches designed to evaluate hypotheses regarding the joint action of chemicals that target cancer pathways. This effort will include discussion of cancer-specific pathways and mechanisms, associated technologies including organotypic and/or mechanistically insightful tools, preferred animal models, in silico/computational approaches to link relevant biological pathways, as well as specific cancer types to use in evaluating the hypotheses.

Meeting and Registration: This meeting is open to the public, free of charge, with attendance limited only by the space available. The meeting will consist of plenary sessions (webcast), breakout discussion sessions, and a poster session. The breakout sessions and poster session will be open to the public but will not be webcast. Individuals who plan to attend in person as observers or view the proceedings via webcast should register on the NTP website (https://ntp.niehs.nih.gov/go/coc) by April 22, 2019, to facilitate meeting planning. Interested individuals are encouraged to visit the Web page to stay abreast of the most current information about the meeting.

Information for visitors to the US EPA is available at https://www.epa.gov/aboutepa/visiting-epa-headquarters. Individuals with disabilities who need accommodation to participate in this event should contact Dr. Cynthia Rider at phone: (984) 287-3175 or email: cynthia.rider@nih.gov. TTY users should contact the Federal TTY Relay Service at 800-877-8339. Requests should be made at least five business days in advance of the event.

Meeting Materials: The preliminary agenda and additional information are available at https://ntp.niehs.nih.gov/go/coc.

REFERENCES

1. Hanahan D, Weinberg RA. Hallmarks of cancer: the next generation. Cell. 2011;144(5):646-74. doi: 10.1016/j.cell.2011.02.013. PubMed PMID: 21376230.

2. Smith MT, Guyton KZ, Gibbons CF, Fritz JM, Portier CJ, Rusyn I, et al. Key Characteristics of Carcinogens as a Basis for Organizing Data on Mechanisms of Carcinogenesis. Environmental health perspectives. 2016;124(6):713-21. doi: 10.1289/ehp.1509912. PubMed PMID: 26600562; PubMed Central PMCID: PMC4892922.

Brian R. Berridge,

Associate Director, National Toxicology Program,

National Institute of Environmental Health Sciences.

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