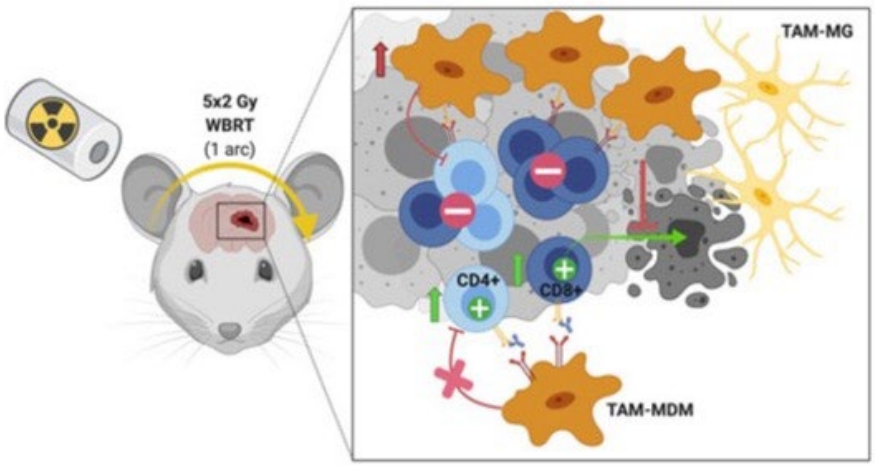
Radiation Research Program
Division of Cancer Treatment and Diagnosis
Division of Cancer Biology
Center for Cancer Research and
NCI GBM and Brain Metastasis Interest Group
presents

Workshop on
Shaping the Landscape of Brain Metastases Research

SEPTEMBER 29-30, 2022

Interactive Online Conference



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This scientific Forum will convene key stakeholders to discuss the current science and future priorities in brain metastases research. Participants will include clinical researchers, translational scientists, leaders from NCI-funded clinical trials networks, advocacy and foundation partners, academic societies, and NCI leadership who will convene for high-impact, focused discussion that will help define top research priorities. At its conclusion, an executive summary will be disseminated, with the goal of translation into collaborative research initiatives supported through ongoing scientific activities of the NCI disease site and other scientific groups (https://rrp.cancer.gov/working_groups/Brain_Mets_and_GBM_Interest_Group.pdf), and guidance to help shape future research priorities.

AGENDA

DAY 1: September 29, 2022

Time	Topics
08:00 – 08:10 am	**Welcome and Introduction** C. Norman Coleman (NCI) and Mansoor M. Ahmed (NCI)
SESSION I	**<u>What matters most to patients?</u>** - *Are our research, assessments and clinical trials aligning with what matters most to patients? If not, what are the barriers?* - *What additional priorities should we be focusing on, in the spectrum of prevention, diagnosis, surveillance, treatment, and survivorship?* **Chairs:** Michelle Kim (University of Michigan) Minesh Mehta (Miami Cancer Institute)
08:10 - 08:15 am	Minesh Mehta (Miami Cancer Institute): Overview
08:15 - 08:30 am	Laura Crandon, Patient Representative (Touch4Life, Founder and President)
08:30 - 08:45 am	Niki Kozak, Patient Representative (Cancer's Newnormal)
08:45 - 09:40 am	Panel discussion with audience participation **Moderators:** Michelle Kim (University of Michigan) Minesh Mehta (Miami Cancer Institute) **Panelists**: Laura Crandon (patient, Touch4Life) Niki Kozak (patient, Cancer's Newnormal) Terri Armstrong (NIH) Shawn Hervey-Jumper (UC San Francisco) Aki Morikawa (University of Michigan) Nicole Willmarth (American Brain Tumor Association) David Arons (National Brain Tumor Society)
09:40 - 09:45 AM	Chair Summary: Minesh Mehta (Miami Cancer Institute)
09:45 – 10:00 am	**BREAK**
SESSION II	**<u>What are the key challenges to overcoming the neurocognitive and functional sequelae of therapy?</u>** - *Can distant intracranial control be achieved without compromising neurocognitive or functional outcomes?* - *What tools or studies are needed to understand the cognitive or functional impact of repeated radiosurgery or CNS-active drug therapies, and*

	the mechanisms (e.g., inflammation) whereby normal tissue is affected? **Chairs:** DeeDee Smart (NIH) Jona Hattangadi-Gluth (UC San Diego)
10:00 – 10:10 AM	DeeDee Smart (NIH) – Overview of key challenges in characterizing and overcoming cognitive and functional treatment sequelae
10:10 – 10:20 AM	Charles Limoli (UC Irvine) – Understanding normal tissue stress-response to radiation and systemic therapy, FLASH, GRID
10:20 – 10:30 AM	Susanna Rosi (UC San Francisco)- Normal tissue effects, gender differences in neurocognitive effects of therapy
10:30 – 10:40 AM	Michelle Monje (Stanford)- Influence of cancer and therapies on nervous system function
10:40 – 11:35 AM	Panel Discussion with audience participation **Moderators:** DeeDee Smart (NIH) Jona Hattangadi-Gluth (UC San Diego) **Panelists**: Susanna Rosi (UC San Francisco) Charles Limoli (UC Irvine) Shawn Hervey-Jumper (UC San Francisco) Jorg Dietrich (Massachusetts General Hospital) Michelle Monje (Stanford) Christina Weyer Jamora (UC San Francisco) Jeffrey Wefel (MD Anderson)
11:35-11:40 AM	Chair Summary: DeeDee Smart (NIH)
11:40 – 12:30 pm	**LUNCH BREAK**
SESSION III	**<u>How do we translate promising science to patient benefit?</u>** - *What are the primary challenges and barriers to translating promising scientific concepts into impactful clinical trials that influence practice and benefit patients (in particular, in lung, breast, melanoma and leptomeningeal disease)?* - *How close are we to implementing strategies in preventing brain metastases in patients? Do these mechanisms vary by histology or tumor type?* - *Are there common biomarkers for metastatic development that are shared across the most common tumor types that metastasize to brain?* **Chairs:** Patricia Steeg (NIH) Brunilde Gril (NIH)

Session IIIA: Challenges by Disease Site

12:30 – 12:40 pm	Michael Davies (MD Anderson) - Overview of key barriers to understanding the pathophysiology of brain metastases and improving disease outcome
12:40 – 12:50 pm	Patricia Steeg (NIH) - Breast cancer
12:50 – 01:00 pm	Jacob Kaufman (Ohio State University) - Non-small cell lung cancer
01:00 – 01:10 pm	Michael Pacold (NYU Langone Health) - Melanoma
01:10 – 01:20 pm	Adrienne Boire (MSKCC) Leptomeningeal disease
01:20 – 02:20 pm	Panel Discussion with audience participation **Moderators:** Patricia Steeg (NIH) Brunilde Gril (NIH) **Panelists**: Michael Davies (MD Anderson) Jacob Kaufman (Ohio State University) Michael Pacold (NYU Langone Health) Adrienne Boire (MSKCC) Calvin Han (FDA) Michael Espey (NIH)
02:20 – 02:25 pm	Chair Summary: Patricia Steeg (NIH)
02:25 – 02:45 pm	**BREAK**

SESSION IIIB: Promising Translational Concepts: Onset, progression, and treatment response

Chairs: Brunilde Gril (NIH)
Patricia Steeg (NIH)

02:45 – 02:55 pm	Shizhen Emily Wang (UC San Diego) - Cancer cell-secreted extracellular vesicles regulate glial-metastasis metabolic crosstalk
02:55 – 03:05 pm	Melanie Hayden Gephart – (Stanford and NCI-MetNet) – Targeting the brain metastasis microniche for therapeutic benefit
03:05 – 03:15 pm	Manuel Valiente (CNIO, Madrid) - Stratification of radiosensitive brain metastases based on an actionable S100A9/RAGE resistance mechanism
03:15 – 03:25 pm	Eva Hernando (NYU Langone Health) – Melanoma, neuroinflammation and promotion of brain metastases
03:25 – 03:30 pm	Chair Summary Brunilde Gril (NIH)

SESSION IV	**<u>Break-out and group discussions: Identifying candidate solutions to the most pressing scientific questions</u>**
	
	- ***Primary question****: What are the most promising strategies "ready-for-prime-time" to predict response to standard therapies and to prevent local and in particular, distant intracranial failure?*
	  - ***Sub question 1****: How do we best address the prevention of brain metastases?*
	  - ***Sub question 2****: How do we implement these strategies while maximizing functional outcomes?*

03:30 – 04:15 pm	**Break-out Group 1** **Moderators**: Patricia Steeg (NIH) Kim Margolin (St. John's Cancer Institute)
03:30 – 04:15 pm	**Break-out Group 2** **Moderators**: Brunilde Gril (NIH) Minesh Mehta (Miami Cancer Institute)
03:30 – 04:15 pm	**Break-out Group 3** **Moderators:** DeeDee Smart (NIH) Jona Hattangadi-Gluth (UC San Diego)
04:15 – 04:30 pm	Summary of Break-out sessions **Chairs:** Hussein Tawbi (MD Anderson) Dan Trifiletti (Mayo Clinic)
04:15-04:20 pm 04:20-04:25 pm 04:25-04:30 pm	**Group 1:** Kim Margolin (St. John's Cancer Institute) **Group 2:** Minesh Mehta (Miami Cancer Institute) **Group 3:** Jona Hattangadi-Gluth (UC San Diego)
04:30 – 05:20 pm	Panel Summary Discussion **Moderators**: Hussein Tawbi (MD Anderson) Dan Trifiletti (Mayo Clinic) **Panelists:** Caroline Chung (MD Anderson) Upal Basu-Roy (LUNGevity) Christine Hodgdon (Grasp Cancer and LBBC) Evanthia Galanis (Mayo Clinic) Vikram Bhadrasain (NIH) Nyun Calvin Han (FDA) Gelareh Zadeh (University of Toronto) Robyn Burnes (Melanoma Research Foundation)
05:20 – 05:25 pm	Chair Summary Hussein Tawbi (MD Anderson)
05:25 – 05:30 pm	Summary Michelle Kim (University of Michigan)

DAY 2: September 30, 2022

SESSION V	**<u>How do we define a common purpose and break the silos?</u>** - *What are the research priorities of the various stakeholders with respect to brain metastases research?* - *How do we break the silos and begin to unify efforts and define common priorities to collaborate to advance the science, clinical trials, and our clinical care?* - *How might existing and emerging initiatives be combined to advance the field?* - *Are some "high risk" research endeavors better undertaken by individual institutions, or in partnership with industry?* - *How do we take the cutting-edge science discussed in Day 1 into the multi-institutional NCTN setting?* **Chairs:** Minesh Mehta (Miami Cancer Institute) Isabella C. Glitza Oliva (MD Anderson)
08:00 – 08:10 am	Minesh Mehta (Miami Cancer Institute) - History and current brain metastases trials in the cooperative groups, what is the "next generation" of clinical trials
08:10 – 08:20 am	Ayal Aizer (Brigham and Women's Hospital) - Professional society efforts, SNO
08:20 – 08:30 am	Carey Anders (Duke) – Multi-institutional consortia efforts (CIMARa)
08:30 – 08:40 am	Nicole Willmarth (ABTA) – Metastatic brain tumor collaborative
08:40 – 08:50 am	Kirk Tanner (NBTS) – Metastatic brain tumor research priorities and industry partnership
08: 50 – 09:00 am	Michelle Kim (University of Michigan) - NIH/NCI Brain Mets Interest Group
09:00 – 09:50 am	Panel Discussion with audience participation **Moderators:** Minesh Mehta (Miami Cancer Institute) Isabella C. Glitza Oliva (MD Anderson) **Panelists**: Jerry Jaboin (University of Oklahoma) Joanne Davis (Radiosurgery Society) John Buatti (University of Iowa) Michael Lim (Stanford) Manmeet Ahluwalia (Miami Cancer Institute) Jonathan Knisely (Cornell) Veronica Chiang (Yale)
09:50 – 09:55 am	Chair Summary Minesh Mehta (Miami Cancer Institute)

9:55 – 10:05 am	**BREAK**
SESSION VI	**<u>How do we take promising science into clinical trials to address the most critical unmet needs</u>** - *How do we tackle the most difficult questions in brain metastases research?* - *Is the metastatic biology of brain metastases altered in the setting of radiotherapy (high dose or conventional)? How might this influence the chief clinical problem of distant intracranial failure after local therapy? Based on preclinical evidence, what might the most promising combinations or sequencing of radiotherapy + drug therapy be?* **Chairs:** Jing Li (MD Anderson) Rupesh Kotecha (Miami Cancer Institute)
	<u>Are we asking the right questions?</u>
10:05 – 10:15 am	John de Groot (UC San Francisco) – How do we bridge the gap between science and our clinical trials to address the most significant unanswered questions in brain metastasis research?
10:15 – 10:25 am	Silvia Formenti (Cornell) – How do we optimally combine radiation and systemic therapies to improve outcomes?
10:25 – 10:35 am	Ranjit Bindra (Yale) – How can we optimize targeted therapies?
	<u>Are we addressing the right endpoints?</u>
10:35 – 10:45 am	Nancy Lin (Dana Farber) –Endpoints for drug therapy trials – beyond RECIST and RANO, should we hold the bar higher?
10:45 – 10:55 am	Ben Ellingson (UC Los Angeles) The potential of advanced imaging and AI for assessing and predicting response and toxicity
10:55 – 11:05 am	Vinai Gondi (Northwestern) - Beyond overall survival – functional, neurocognitive and other novel endpoints for NCI-sponsored trials
11:05 – 11:15 am	Christine Hodgdon (Grasp Cancer and LBBC) – Patient perspectives: Addressing the unmet needs in CNS metastases
11:15 – 12:10 pm	Discussion with audience participation **Moderators:** Jing Li (MD Anderson) Rupesh Kotecha (Miami Cancer Institute) **Panelists**: John de Groot (UC San Francisco) Silvia Formenti (Cornell) Ben Ellingson (UC Los Angeles) Nancy Lin (Dana Farber) Hussein Tawbi (MD Anderson) Vinai Gondi (Northwestern)

	Paul Sperduto (Duke) Christine Hodgdon (Grasp Cancer and LBBC) Nyun Calvin Han (FDA)
12:10 – 12:15 pm	Chair Summary: Jing Li (MD Anderson)
12:15 – 01:00 pm	**LUNCH BREAK**
SESSION VII	**<u>How should we optimize shared data collection to minimize disparities and accelerate discovery and well-designed clinical trials?</u>** ***Primary question****: How should a shared resource be developed to collect multi-dimensional datasets to accelerate discovery and meaningfully inform high-yield clinical trials?* - ***Sub question 1****: What specific barriers (e.g., in the NCTN, in industry partnerships) must be addressed to achieve this?* - ***Sub question 2****: How do we ensure adequate inclusion and representation of all patients in our discovery and clinical research processes?* **Chairs:** Jill Barnholtz-Sloan (NIH) Ben Ellingson (UC Los Angeles)
01:00 – 01:10 pm	Priscilla Brastianos (Massachusetts General Hospital)– Biomarker discovery to inform novel clinical research
01:10 – 01:20 pm	Katherine Peters (Duke) Patient-reported outcomes, provider assessments, and novel data collection devices as complements to conventional measures
01:20 – 01:30 pm	Eudocia Lee (Dana Farber) Disparities in access, outcomes and clinical trial enrollment in the brain metastases population
01:30 – 02:30 pm	**Break-out Group 1** **Moderators:** Jill Barnholtz-Sloan (NIH) Ben Ellingson (UC Los Angeles)
01:30 – 02:30 pm	**Break-out Group 2** **Moderators:** Carey Anders (Duke) Jordi Rodon Ahnert (MD Anderson)
01:30 – 02:30 pm	**Break-out Group 3** **Moderators:** Melanie Hayden Gephart (Stanford) Eudocia Lee (Dana Farber)
02:30 – 02:50 pm	Break
02:50 – 03:05 pm	Summary of Breakout Sessions **Chairs**: Adrienne Boire (MSKCC) Mustafa Khasraw (Duke)
02:50 – 02:55 pm	**Group 1**: Jill Barnholtz-Sloan (NIH)

02:55 – 03:00 pm	**Group 2**: Jordi Rodon Ahnert (MD Anderson)
03:00 – 03:05 pm	**Group 3**: Eudocia Lee (Dana-Farber)
03:05 – 04:00 pm	Panel Summary Discussion **Moderators**: Adrienne Boire (MSKCC) Mustafa Khasraw (Duke) **Panelists**: Jona Hattangadi-Gluth (UC San Diego) Daniel Trifiletti (Mayo Clinic) Debra Yeboa (MD Anderson) Richard Pazdur (FDA) Elshad Hasanov (MD Anderson) Rohan Ramakrishna (Cornell) Bhadrasain Vikram (NIH) Michael Espey (NIH)
CLOSING DISCUSSION	Summary of workshop findings and recommended research priorities
04:00 - 04:15 pm	Minesh Mehta (Miami Cancer Institute)
04:15 – 04:30 pm	Closing: Mansoor M. Ahmed (NCI) C. Norman Coleman (NCI) White Paper Follow-up collaborative in-person meeting Future directions
04:30 pm	**ADJOURNMENT**

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