GBM AGILE
Adaptive Global Innovative Learning Environment

GBM AGILE Executive Committee

The GBM AGILE (An Adaptive, Global, Innovative Learning Environment)

ANNA D. BARKER, PHD

Co-Director, Complex Adaptive Systems; Director, National Biomarker Development Alliance
Professor, School of Life Sciences, Arizona State University

Complex Adaptive Systems (CAS) at ASU serves as an organizing construct to approach understanding and solving multi-dimensional problems in biomedicine. In her role as Co-Director of CAS, Dr. Barker designs and implements transformative knowledge networks specifically directed toward solving major problems in biomedical research and biomedicine. These multi-sector networks serve as a foundation for the development of new research models that leverage convergent knowledge, innovative teams and novel funding approaches to better prevent and treat acute and chronic disease and address major healthcare problems. The GBM AGILE trial represents an example of the power of "crowdsourcing knowledge" to address the lack of progress against a deadly disease like GBM. Several other initiatives are underway including: a national effort in biomarker development for rare diseases and biomarker qualification initiatives. Prior to joining ASU, Dr. Barker served several years as the Deputy Director and Deputy Director for Strategic Scientific Initiatives for the National Cancer Institute (NCI), National Institutes of Health (NIH). At the NCI she developed and led or co-led a number of trans-disciplinary programs including the: Nanotechnology Alliance for Cancer; The Cancer Genome Atlas (TCGA); Clinical Proteomics Technologies Initiative for Cancer and the Physical Sciences-Oncology Centers – PS-OCs. Under her leadership the NCI also developed major initiatives in biospecimen science and bioinformatics. Dr. Barker was founding co-chair of the NCI-FDA Interagency Task Force (IOTF) and was founding co-chair of the Cancer Steering Committee of the FNIH Biomarkers Consortium (FNIH-BC). Among achievements in the policy and regulatory areas were the IOTF's development of the "exploratory IND" and oversight of the design and implementation of the ISPY-2 Trial through the FNIH-BC. While at the NCI, as the co-founder and co-director of TCGA with the National Human Genome Research Institute (NHGRI), she enabled the selection of Glioblastoma Multiforme (GBM) as the inaugural tumor sequenced in the TCGA pilot project. In this regard GBM served as a model for the creation of a new generation of multi-dimensional cancer genomics data bases; which has attracted broad interest and increased engagement by all sectors to undertake research on GBM. As a volunteer, she has served in a number of capacities and led key programs for several government and professional organizations including the American Association for Cancer Research (AACR), founding member and subsequent Chair of the Department of Defense Breast Cancer Program Integration Panel, Chair of the NCI Cancer Center Study Section, Chair of the C-Change Research Committee, and a number of others. Her service to the AACR has included leadership of the Scientist-Survivor Program, and Public Forum and Chair of the Science Policy and Legislative Affairs Committee. Dr. Barker has received a number of awards for her achievements in science and her advocacy for cancer research and innovation in research. She served for over 18 years as a senior scientist and subsequently as a senior executive in biomedicine at Battelle Memorial Institute; and co-founded and served as the CEO of a public biotechnology drug development company. Her research interests include complex adaptive systems (CAS) and cancer, cancer biomarkers, experimental therapeutics and free-radical biochemistry in cancer etiology and treatment. Dr. Barker completed her M.A. and PhD at the Ohio State University, where she trained in immunology and microbiology.

BRIAN M. ALEXANDER, MD, MPH

Disease Center Leader, Radiation Oncology, Center for Neuro-Oncology
Dana-Farber Cancer Institute, Harvard Medical School

Brian Alexander, MD, MPH, is a radiation oncologist specializing in research and clinical care for patients with tumors of the central nervous system and is the Director of the Neuro-Radiation Oncology Program at the Brigham and Women's/ Dana-Farber Cancer Center. His research interests include the characterization of the radiation responsiveness of glioma stem cells, preclinical evaluation of novel therapeutics, and innovative designs for early phase clinical trials.

Dr. Alexander previously served as a White House Fellow and Special Assistant to the Secretary of Veterans Affairs from 2008-2009. Under Secretary Peake, he helped prepare VA for the transition of administrations and worked to develop a public reporting system for quality performance indicators that formed the foundation for VA ASPIRE. During the transition and the early part of the Obama administration, Dr. Alexander served as a health policy advisor to Secretary Shinseki. In that role, he led the Department's effort to organize the International Roundtable on Clinical Quality and Patient Safety and coordinated all aspects of Secretary Shinskei's preparation for the Obama Administration's Health Care Summit. In addition to his role as health policy advisor, Dr. Alexander organized the standup of the VA's Coordinating Council on National Health Reform and directed the activities of its multi-team Health Reform Working Group. Dr. Alexander is currently a member of the Institute of Medicine's Committee on the Governance and Financing of Graduate Medical Education.

Dr. Alexander is originally from Southfield, Michigan and is a graduate of Kalamazoo College, the University of Michigan Medical School and the Harvard School of Public Health.

SUJUAN BA, PHD

President and Chief Operating Officer, National Foundation for Cancer Research

Dr. Sujuan Ba is the President and Chief Operating Officer of the National Foundation for Cancer Research (NFCR). She oversees the organization's day-to-day operations; fundraising, financial planning and management, scientific direction and partnership development. Under Dr. Ba's leadership NFCR has established a powerful network of research centers and laboratories in the United States, Europe, and Asia – a network which has enabled NFCR Scientists to focus on critical aspects of cancer research.

Since 2003, Dr. Ba has led the creation of the Tissue Bank Consortium in Asia (TBCA) to promote best practices for biorepositories and biobanks, and for building international collaboration platforms for tissue-based cancer research. She has served as the Co-Chair of TBCA's Executive Steering Committee for the past ten years. Under her stewardship, the project has been highly regarded as an exemplary international platform for private, public and government partnership for international collaboration in the fields of cancer biomarkers and therapeutic development.

In 2005, Dr. Ba helped to establish NFCR's annual Szent-Györgyi Prize for Progress in Cancer Research, an international prize in recognition of outstanding scientific achievement in the war against cancer. She has served continuously as co-chair of the Prize Selection Committee over the last nine years. During this period, the prize has grown into one of the premier cancer research awards in the world.

In addition to her work at NFCR, Dr. Ba founded the Asian Fund for Cancer Research (AFCR) in 2006, a Hong Kong-based non-profit organization committed to investigating the distinct causes of cancer in Asian populations through innovative genetic and molecular research and to developing more effective therapies tailored to Asian cancer patients. As President and CEO of AFCR, Dr. Ba oversees the organization's collaborative research initiatives and public education programs in Hong Kong, Greater China, and throughout Asia.

Dr. Ba is a Past President and current member of the Board of Advisors of the Chinese Biopharmaceutical Association–USA (Rockville, MD). She serves on the International Consulting Committee of the China National Research Center for Translational Medicine (Shanghai). She also serves on the Scientific Advisory Boards of Medelis, Inc. (Fountain Hills, AZ). She is a member of the Editorial Advisory Board for *The American Breast Cancer Guid*e and *Chinese Journal of Cancer*. She also served on the Membership Committee of the International Union against Cancer (Geneva).

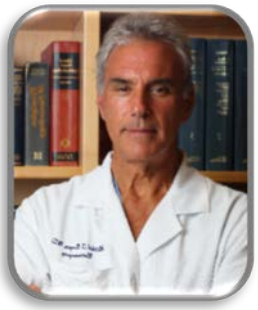
Prior to joining NFCR, Dr. Ba was the Director of Chiral Chemistry and Fine Chemical Consulting Services at Technology Catalysts International (TCI) where she managed special projects on market research, business evaluation, and competitive intelligence for an international clientele of major chemical and pharmaceutical companies. From 1991-1997, she was a Principal Research Chemist and then Project Manager of Technology Development and Research Planning at Arco Chemical Company (ARCO).

Dr. Ba received her B.S. in radiochemistry from Peking University and her Ph.D. in chemistry from the University of Pennsylvania.

DONALD A. BERRY, PHD

Founder and Senior Statistical Scientist, Berry Consultants, LLC;
Professor, Department of Biostatistics, The University of Texas MD Anderson Cancer Center

Dr. Berry is a professor in the Department of Biostatistics of The University of Texas MD Anderson Cancer Center. He was founding chair of this department in 1999 and founding head of the Division of Quantitative Sciences, including the Department of Bioinformatics and Computational Biology, in 2006. Dr. Berry received a PhD degree in statistics from Yale University and previously served on the faculties of the University of Minnesota and Duke University. He held endowed faculty positions at Duke University and at MD Anderson. Since 1990 Dr. Berry has served as a faculty statistician on the Breast Cancer Committee of the Cancer and Leukemia Group B, a national oncology group. He has designed and supervised the conduct of many large U.S. intergroup trials in breast cancer. A principal focus of Dr. Berry's research is the use of biomarkers in cancer and other diseases for learning which patients benefit from which therapies, based on genomics and phenotype. He designed and is a co-PI of I-SPY 2 (www.ispy2.org), a Bayesian adaptive platform clinical trial in high-risk early breast cancer whose goal is matching experimental therapies with patient subsets defined by tumor molecular characteristics. Since 1997 Dr. Berry has served on the NCI's PDQ Screening and Prevention Board, for which he received the NIH Award of Merit in 2010. Through Berry Consultants, LLC, he has designed many innovative clinical trials for pharmaceutical and medical device companies and for NIH cooperative groups. Dr. Berry is the author of several books on statistical methodology and over 400 published articles, including first-authored articles in the major medical journals. He has been the principal investigator for numerous research grants from the NIH and the National Science Foundation and is a fellow of the American Statistical Association and the Institute of Mathematical Statistics. He has been listed by ScienceWatch.com as one of The World's Most Influential Scientific Minds in Clinical Medicine.



MITCHEL S. BERGER, MD

Kathleen M. Plant Distinguished Professor of Neurological Surgery
Chairman of the Department of Neurological Surgery, University of California, San Francisco

Mitchel S. Berger MD, F.A.C.S., F.A.A.N.S. is the Kathleen M. Plant Distinguished Professor and Chairman of the Department of Neurological Surgery at the University of California, San Francisco (UCSF), and is an expert in the fields of neurosurgery and neuro-oncology. He also serves as Director of UCSF's Brain Tumor Research Center and Neurosurgical Research Centers.

After graduating from Harvard University in 1974, Dr. Berger earned his medical degree from the University of Miami, School of Medicine. He completed a clinical fellowship in neuro-oncology at UCSF, a fellowship in pediatric neurosurgery at the Hospital for Sick Children of the University of Toronto, and his neurosurgical residency at UCSF. In 1986, he became Assistant Professor of Neurosurgery at the University of Washington School of Medicine, after which he was named Associate Professor (1990) and Professor (1996).

Dr. Berger has clinical expertise in treating adult and pediatric brain and spinal cord tumors. He is a pioneer of intraoperative brain mapping — a technique used to avoid functional areas of the brain during surgical resection of a tumor. His work has enabled surgeons to perform more extensive resection of tumor with less chance of producing sensorimotor or language deficit.

Dr. Berger is a leader of translational research and is the Principal Investigator of the UCSF Brain Tumor Research Center's Specialized Program of Research Excellence (SPORE) award in neuro-oncology, funded by the National Institutes of Health. He is also the Principal Investigator of the Pediatric Brain Tumor Foundation Institute at UCSF – a world-class research program dedicated to defining the poorly understood basic biology of several types of childhood brain tumors and improving therapies.

His specific research interests lie in identifying molecular markers related to the progression and prognosis of glial tumors, as well as the development of small-molecule therapeutic agents that can be administered directly to the brain via convection-enhanced drug delivery. Dr. Berger is also a co-investigator at UCSF's Comprehensive Cancer Center, where he works to develop immunoliposome-directed targeted therapy for treating gliomas that express epidermal growth factor receptors.

Dr. Berger is a member of the Board of Directors of the American Association of Neurological Surgeons and the American Board of Neurological Surgery. In 2009, he was awarded the prestigious Winn Prize by the Society for Neurological Surgery. He is currently Secretary of the American Academy of Neurological Surgery. He also currently serves as a member of the National Football League Head, Neck and Spine Committee, focusing on retired players' issues and examining the consequences of repetitive head injury and concussion.

During his distinguished career, Dr. Berger has served as President of the American Association of Neurological Surgeons, President of the Society of Neuro-Oncology, President of the North Pacific Society of Neurology, and Vice President of the Congress of Neurological Surgeons. He is currently the president-elect of the American Academy of Neurological Surgery and he is an active member of numerous additional professional organizations, including the American Organization for Cancer Research, the American College of Surgeons, and the World Federation of Neurosurgical Societies.

A prolific author, Dr. Berger has contributed over 450 scientific articles to peer-reviewed journals, has edited 6 textbooks, and has written over 80 chapters on various neurosurgical topics. He is currently on the editorial boards of several leading journals including *Neuro-Oncology*, *Neurosurgery,* and *American Journal of Translational Research*.

WEBSTER CAVENEE, PHD

Director, Strategic Alliances in Central Nervous System Cancers, Ludwig Institute for Cancer Research;
Distinguished Professor, University of California San Diego

Web Cavenee has over his career made landmark contributions to our understanding of the genetic events that underlie cancers. His pioneering work in retinoblastoma provided the first indisputable genetic evidence for the existence of tumor suppressor genes in humans and confirmed the "two-hit" hypothesis that had been proposed more than a decade earlier. He went on to identify other recessive genetic lesions that predispose individuals to Wilms tumor, osteosarcoma, and rhabdomyosarcoma, and established the concept of loss of heterozygosity, which is known to contribute to multiple spontaneous and hereditary cancers. Over the past two decades, Cavenee has methodically unraveled the genetics and molecular biology of the brain cancer glioblastoma multiforme (GBM). His research in this area has helped illuminate the mechanisms that drive the growth, migration, survival and drug resistance of GBM cells and generated potentially powerful new therapeutic strategies.

Cavenee received his PhD with honors in 1977 from the University of Kansas Medical School and completed his postdoctoral studies at the Jackson Laboratory, MIT and the Howard Hughes Medical Institute in Salt Lake City. He has held professorships at the University of Cincinnati and McGill University, and was Director of the San Diego Branch of the Ludwig Institute for Cancer Research from 1991 to 2015 until becoming Ludwig's Director of Strategic Alliances in CNS Cancers. He is a Distinguished Professor at the University of California at San Diego and an elected Member of the National Academy of Sciences (1997), the Institute of Medicine of the NAS (2007), the Leopoldina German Academy of Science (2012) and the American Society of Clinical Investigation (1995). He is also a former President of the American Association for Cancer Research (1998), and a Fellow of the American Academy of Microbiology (1997), the International Union Against Cancer (1994), the American Association for the Advancement of Science (2008) and the Academy of the American Association for Cancer Research (2013). He serves on the editorial boards of several journals and the scientific advisory boards of several companies and private foundations. He has also served on the boards of Scientific Counselors of the National Cancer Institute and the National Institute of Environmental Health Sciences. Cavenee has published more than 350 scientific papers and received more than 100 honors for his contributions to cancer research.

TIMOTHY CLOUGHESY, MD

Director, University of California, Los Angeles Neuro-Oncology Program; Professor of Clinical Neurology, Neurology, David Geffen School of Medicine at UCLA, The Ronald Reagan UCLA Medical Center

Dr. Cloughesy is a Professor of Neurology at the David Geffen School of Medicine at UCLA. He received his B.A. degree with Honors in Chemistry in 1983 at University of California, Santa Barbara, and his MD degree in 1987 at Tulane University. He completed his Neurology Residency at University of California, Los Angeles and fellowships in Clinical Neurophysiology (UCLA 1991-1992) and Neuro-Oncology (Memorial Sloan Kettering Cancer Center 1992). Dr. Cloughesy is board certified in Neurology and Clinical Neurophysiology. He joined the faculty of the David Geffen School of Medicine at UCLA in 1992 with the Department of Neurology. He is the director of the Neuro-Oncology Program at UCLA and the Director of the Henry Singleton Brain Cancer Research Program. He is a member of the Brain Research Institute and Jonsson Comprehensive Cancer Center at UCLA.

Dr. Cloughesy's research has focused on clinical trials in brain cancer using targeted molecular therapies with novel clinical trial design and biomarkers in brain cancer. He provided principal leadership for the approval of bevacizumab for recurrent glioblastoma. This was the first drug approved for recurrent glioblastoma in over 30 years. He is recognized as a world expert in the brain cancer research and has been asked to lead several first-in–human studies to treat glioblastoma. He has developed a brain cancer bioinformatics database which combines clinical outcomes, imaging, and molecular analysis to enhance translational research and has the goal of using biomarkers to provide individualized care for brain cancer patients. He has authored or co-authored over 250 peer-reviewed articles on brain cancer.

TAO JIANG, MD, PHD

Professor and Vice Director, Beijing Neurosurgical Institute; Department of Neurosurgery, Beijing Tiantan Hospital; Center of Brain Tumor, Beijing Institute for Brain Disorders; Director and Founder of Chinese Glioma Genome Atlas (CGGA)

Dr. Tao Jiang is the Vice Director of Beijing Neurosurgical Institute and Department of Neurosurgery, Beijing Tiantan Hospital, which is one of the world's largest neurosurgical centers. He has more than 20 years' working experience on both clinical practice and scientific research of neurosurgery, and performs more than 500 cases of neurosurgical operations per year.

Dr. Jiang founded the Chinese Glioma Tissue Database (CGTD) in 2004, followed by Chinese Glioma Genome Atlas (CGGA) in 2008. His researches are mainly on "awake craniotomy", "Glioma associated seizure" and "molecular classification and personalized medicine of glioma". He has published more than 100 articles and won more than ten national and provincial awards.

Dr. Jiang is the past director (2012-2014) and a member of the Chinese Glioma Cooperative Group (CGCG), which unites the main neurosurgical centers around China to provide more opportunities for deep collaboration. CGCG has helped greatly in publishing clinical guidelines, organizing training classes, seeking for cooperations, and improved the standards of China's neurosurgery.

Dr. Jiang serves as Vice Dean of Department of Clinical Oncology, Capital Medical University, the Regional Editor of *Current Signal Transduction Therapy* in Asia and Academic Editor of *PLOS ONE*.

MUSTAFA KHASRAW, MD

Medical Oncologist, Royal North Shore Hospital, Sydney; Senior Research Fellow, NHMRC Clinical Trials Centre of The University of Sydney, Clinical Lead for the Cooperative Trials Group for Neuro-Oncology (COGNO), Cancer Research Fellow, Deakin University

Mustafa Khasraw is a medical oncologist at Royal North Shore Hospital in Sydney. He is also a senior research fellow at the NHMRC Clinical Trials Centre of The University of Sydney, Clinical Lead for the Cooperative Trials Group for Neuro-Oncology (COGNO), cancer research fellow at Deakin University with leading role in several clinical and translational laboratory programs.

Until April 2015 he was the clinical lead of the Hematology and Oncology Clinical Trials at Andrew Love Cancer Centre in Geelong and practiced as a Medical Oncologist at Geelong and Royal Melbourne Hospitals.

He completed his medical oncology training at Royal North Shore Hospital in Sydney and he undertook a subsequent oncology fellowship training in the US at Memorial Sloan-Kettering Cancer Centre in New York. His fellowship was both in neuro-oncology and in breast cancer. He is a member of several research committees and the coordinating principal investigator for several multi centre clinical trials.

ROBERT MITTMAN, MS, MPP

Founder, Facilitation | Foresight | Strategy; Director, Biomedical Strategy & Knowledge Development; Complex Adaptive Systems; Professor of Practice, Ira A. Fulton Schools of Engineering, Arizona State University

As founder of Facilitation, Foresight, Strategy, Mr. Mittman works with groups of organizations to discover and implement shared approaches to complex and intractable problems. He engages audiences in a lively exchange of perspectives to turn simple meetings into forums that allow diverse individuals to work productively together.

Mr. Mittman specializes as a scientific strategist. He helps large groups of scientists from diverse disciplines articulate shared areas of interest, frame significant and innovative research questions, and identify opportunities for new partnerships and collaborations to advance the development of new fields of science.

Mr. Mittman facilitates strategic thinking with non-profit health organizations, government agencies, and the for-profit health care industry, including the National Cancer Institute; the Centers for Disease Control and Prevention, the American Association for Cancer Research; the University of California, San Francisco's School of Medicine; Health Level 7; the Leukemia and Lymphoma Society; the Angiogenesis Foundation; the California HealthCare Foundation; Johnson and Johnson; Ascension Health; and Kaiser-Permanente. Recent work has included integrating the disciplines of biophysics, physical chemistry, and mathematics into biological research; developing a vision of how information technology can improve quality and safety in a range of health care settings from research to the clinic to the home; and crafting a vision for personalized health care.

For nearly two decades, Mr. Mittman provided strategic advice to health care organizations as director at Institute for the Future. He holds graduate degrees in computer science and public policy analysis, and a Bachelor of Science degree in electrical engineering, all from the University of California at Berkeley.

GEORGE POSTE, DVM, PhD

Interim Chief Science Officer, National Biomarker Development Alliance; Co-Director, Complex Adaptive Systems; Regents' Professor and Del E. Webb Chair in Health Innovation, Arizona State University

Dr. Poste serves as the interim chief science officer for the NBDA. In this role, through the NBDA's think tanks and workshops and literature and other sources, he works closely with the Alliance team to identify and prioritize key barriers in the discovery and development modules of biomarker development. He also creates networks among relevant stakeholders to plan and implement solution strategies for the barriers identified.

Dr. Poste is Regents' Professor and Del E. Webb Chair of Health Innovation at Arizona State University. He founded and built the Biodesign Institute at ASU and served as its Director from 2003 to 2009. In 2009 he launched the Complex Adaptive Systems (CAS) at ASU which integrates research across disciplines to study the altered regulation of molecular networks in human diseases to provide a contemporary basis for the development of targeted disease interventions, inclusive of remote monitoring of health status using miniaturized body sensors and mobile devices.

Dr. Poste is a Fellow of the U.K. Royal Society, the Royal College of Pathologists, and the U.K. Academy of Medicine, a Distinguished Fellow at the Hoover Institution, Stanford University, a member of the Council on Foreign Relations, and the U.S. Institute of Medicine Board on Global Health. He has served as a member of the Defense Science Board of the U.S. Department of Defense and currently serves on advisory committees for several U.S. government agencies in defense, intelligence, national security, and health care. He has published extensively on pharmaceutical technologies, cancer, and infectious diseases. He was honored in 1999 by Her Majesty, Queen Elizabeth II, as a Commander of the British Empire for his contributions to international health care and security. He serves on the Board of Directors of Monsanto, Exelixis, Caris Life Sciences, and the Scientific Advisory Boards of Burrill and Company and Synthetic Genomics. From 1992 to 1999, he was Chief Science and Technology Officer and President, R&D, of SmithKline Beecham (SB), where he was associated with the registration of 31 drug, vaccine, and diagnostic products. He has received a number of awards including Scientist of the Year by R&D Magazine; the Einstein Award from the Global Business Leadership Council, 2006; and the Scrip Lifetime Achievement Award, 2009.

W. K. Alfred Yung, MD

Professor and Chairman, Department of Neuro-Oncology
University of Texas M. D. Anderson ~~Cancer~~ Center

Professor W. K. Alfred Yung, M.D., received his undergraduate degree from the University of Minnesota, Minneapolis, in 1971, graduating summa cum laude. For his medical training, he attended the University of Chicago, Pritzker School of Medicine and received his M.D. degree in 1975. Internship and residency training followed at the University of California, San Diego from 1975-1978, and chief residency and fellowship at Cornell University School of Medicine and Memorial Sloan-Kettering Cancer Center from 1978-1981. Dr. Yung currently holds the title of Professor of Neuro-Oncology and Cancer Biology, as well as the Margaret and Ben Love Chair of Clinical Cancer Care. He has served as Chair of the Department of Neuro-Oncology since 1999. He is also the director of the Brain Tumor SPORE and co-director of the Brain Tumor Center at MD Anderson Cancer Center.

Dr. Yung has extensive experience and expertise in the field of brain tumor research. His research program spans more than two decades and includes basic, translational, and clinical research. Along with 28 years of continuous funding by NCI, his work has also been funded by foundations and industry grants. The overall objective of his research program is to develop new therapeutic approaches to block the regulatory mechanisms of brain cancer cells. His primary research interest focuses on development of molecular therapeutic strategies targeting the EGFR and PTEN/PI3 kinase pathways and their parallel regulatory mechanisms that are crucial to human glioma genesis and progression. The translational research effort has included the development of oncolytic adenoviral vectors and pre-clinical studies of many small molecular inhibitors targeting the PTEN/P13K and EGFR pathways.

Dr. Yung has published over 300 peer-reviewed articles in many high impact journals covering diverse laboratory and clinical research topics. He serves on the scientific advisory board of several pharmaceutical companies and private foundations. He is the current editor-in-chief of *Neuro-Oncology* and co-chair of the NCI Brain Malignancy Steering Committee.