Suzanne Baker, PhD, Director, Division of Brain Tumor Research, St Jude Children’s Research Hospital
*Ohlfest Memorial Lecturer
“Pediatric High-Grade Glioma” Cancer at the Crossroads of Development and Epigenetics
Dr. Baker’s research is focused on elucidating the mechanisms driving diffuse high-grade glioma (HGG) in children. There are a number of distinguishing features of pediatric HGG that indicate a unique pathogenesis; including the occurrence of diffuse intrinsic pontine gliomas (DIPGs), which arise in the brainstem. Her group is working towards integrating the latest genomic findings from primary human tumors to develop improved models of the distinct subgroups of pediatric diffuse HGG to use for mechanistic studies and preclinical testing of selective therapies.

M.R. Chambers, DVM, MD Professor, Department of Neurosurgery, University of Alabama, Birmingham
“CANINE’ CANine ImmunoNEurotherapeutics: A Comparative Genomics, Oncology & Immunotherapy Consortium”
Dr. Chambers’ clinical interests include all areas of neurological surgery involving brain, spine and peripheral nerve with an emphasis on surgical, stereotactic and computer-assisted treatment of brain tumors. Her academic interests include brain tumor therapies, vertebral fractures associated with osteoporosis, and degenerative spinal conditions. She is the principal investigator in two pending spinal instrumentation trials at UAB.

Michael Graner, PhD, Associate Professor, Neurosurgery, University of Colorado Anschutz Medical Campus
“Trouble Inside and Out: Glioma Exosomes Alter Signaling, Metabolism, and the Extracellular Environment of Normal Brain Cells”
Dr. Graner’s research focuses on the immunology and biology of brain tumors. From a clinical perspective, he is interested in vaccine design and implementation, which includes the search for appropriate combinations of therapies to enhance immune responses or to downplay the role of tumor-induced immune suppression. He is a patent-holder on a vaccine process that generates a material from tumors that is enriched for a class of proteins called chaperones (sometimes called stress proteins or heat shock proteins). His group is moving towards a clinical trial in both human and canine patients.

Marcel Kool, PhD, Group Leader, Division of Pediatric Neurooncology, Hopp Children’s Cancer Center
“Molecular classification and characterization of pediatric brain tumors”
Dr. Kool’s research interests are the (epi)genomic analysis of medulloblastomas, ependymomas, ARTs, ETMRs and CNS-PNETs. This includes the recently discovered new molecular entities CNS-NB, CNS-EFT-CIC, HGNET-BCOR, and HGNET-MNI. For the analysis they use high-throughput and up-to-date DNA- and (mi)RNA-sequencing, DNA methylation profiling, RNA profiling and ChIP-sequencing. Over the years they got quite a good idea of what is driving most of these less frequent but often aggressive brain tumors, but there is still much to learn.

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Valerie Weaver, PhD, Director of the Center for Bioengineering and Tissue Regeneration, Center for Bioengineering and Tissue Regeneration
Title TBD
Dr. Weaver has over 20 years of experience in leading interdisciplinary research in oncology, including projects merging approaches in the physical/engineering sciences and biology. Her research focuses on the contribution of force, cell-intrinsic as well as extracellular matrix, to oncogenesis and tumor development. Her group employs 2- and 3-D in vitro cell culture techniques, clinical samples and animal models with force application techniques and traction force and atomic force microscopy to assess the influence of the mechanical aspects of the cell environment on cell behavior and tumor progression.

Forest White, PhD, Professor, Biological Engineering, Massachusetts Institute of Technology
“Drug distribution, efficacy, and tumor cell response in brain tumors”
Dr. White’s research focuses on quantitative analysis of protein phosphorylation events regulating signal transduction cascades associated with cancer and other biological processes. Utilizing mass spectrometry-based technology, analysis of protein phosphorylation occurs on a global scale, allowing for quantitative mapping of complex signal transduction cascades in a variety of biological samples. Currently, the group is applying this technology to understand signaling processes regulating biological response to exogenous stimuli in a variety of cancer model systems.