



THE BEN & CATHERINE IVY

CENTER FOR ADVANCED BRAIN TUMOR TREATMENT

FACT SHEET

CENTER FOR RESEARCH EXCELLENCE	<p>The Ben and Catherine Ivy Center for Advanced Brain Tumor Treatment (Ivy Center) at Swedish Neuroscience Institute in Seattle provides brain tumor patients, and their families, access to a multidisciplinary team of skilled neurosurgeons, oncologists, radiologists, and a specialized nursing staff assisted by therapists and counselors. Through the Ivy Center, patients receive coordinated care and innovative treatments for both benign and malignant brain tumors. This team approach allows each patient's care to be tailored to his or her needs and provides access to the most advanced medical and surgical care, clinical trials, and personalized treatment options.</p> <p>The Ivy Center's unique integrated design positions its world-class research laboratory within the patient clinic, providing each patient with immediate access to promising new therapy strategies and clinical trials developed in the Ivy Center's lab. Located in Seattle, the Ivy Center draws patients from the Pacific Northwest region, the country and around the world.</p>
SIZE	3,442 square feet (includes research laboratory and patient clinic; this figure does not include the medical center)
BRAIN STATS AT-A-GLANCE	<ul style="list-style-type: none">• Each year more than 200,000 people in the United States are diagnosed with a primary (cancer cells specific to the brain only) or metastatic (cancer cells that have spread to the brain from another part of the body) brain tumor. Primary brain tumors comprise about 40,000 of these diagnoses.• There are more than 120 different types of brain tumors, which make effective treatment complicated. Currently, the standard treatment for brain tumors includes surgery, radiation therapy and chemotherapy.• Glioblastoma is the most common form of brain cancer, and one of the most malignant forms of cancer. Glioblastoma is rapidly progressive and almost uniformly fatal despite surgical, radiation and chemotherapy treatments.• Approximately 22,000 people in the United States will be diagnosed with terminal brain cancer this year.• The average survival rate for glioblastoma patients is only one to two years.• Brain cancer survival rates have not changed by much in the last 100 years.• Only three new treatments for brain cancer (glioblastoma) have been FDA approved in the past 30 years.• Currently, there is no known cure for malignant brain cancer.

<p style="text-align: center;">KEY FEATURES</p>	<ul style="list-style-type: none"> • When it opened in 2008, the Ivy Center became the first community-based brain tumor treatment facility of its kind in the Pacific Northwest. • Patients at the Ivy Center benefit greatly from being in a single location. The clinic efficiently addresses the challenges of delivering coordinated care from a diverse team of brain specialists. • Care programs include timely diagnosis, personal treatment plans, surgical, radiological and chemotherapeutic treatments, as well as personalized follow-up care from one central location. • The Ivy Center provides patient access to community-based clinical trials that offer patients early and timely access to investigational drugs and treatments. These community-based trials are not currently available to patients elsewhere in the region. • The Ivy Center provides the Pacific Northwest with a comprehensive brain tumor research laboratory that provides rapid genetic analysis of brain tumors. All patients treated at Ivy Center have their tumors genetically screened. This is a potentially important and an informative part of the treatment process. • To achieve greater efficiencies and effectiveness between medical staff and patients, the Ivy Center houses an integrative care coordinator who serves as a patient advocate and liaison. The coordinator manages schedules and appointments, facilitates communication with family members and oversees patient education and support-group activities. • The Ivy Center’s integrated operating suites utilize advanced surgical technologies that include awake-mapping, interoperative MRI, endoscopy, neuro-navigation, integrated functional imaging, and others. • A full range of chemotherapy and surgical options are available at the Ivy Center along with enough staff to individually monitor, consider, recommend and advise for each situation.
<p style="text-align: center;">TECHNOLOGY</p>	<ul style="list-style-type: none"> • The Ivy Center’s DNA sequencing technologies open the door to understanding differences in treatment responses for every patient. Using state-of-the-art computer analysis, researchers at the center can identify specific gene alterations that correlate with treatment responses. The insights that can be discovered may predict the effectiveness of specific therapies and help design more effective strategies in the future. • The Ivy Center hosts the region’s first integrated brain tumor tissue bank in association with a comprehensive genomic database derived from samples removed during surgery. Together, these critical resources will influence further research into slowing or stopping the growth of malignant brain tumors. • The Ivy Center provides access to both Gamma Knife® and CyberKnife®, technologies used to administer radiosurgery without an incision. They help deliver radiation treatment with pinpoint accuracy enabling the treatment of previously inoperable tumors and lesions without risking healthy tissue.

<p style="text-align: center;">RESEARCH</p>	<p>Since the Ivy Center opened in 2008, it has become a major brain tumor research center in the United States. Clinical research is an essential component of the Ivy Center. It participates in a number of research studies and clinical trials, including:</p> <ul style="list-style-type: none"> • Drug Delivery: A research project with Accium Biosciences, which analyzed the efficacy of chemotherapy delivery to brain tumor tissue. This information can help improve patient care by discovering medications that are and are not delivered well to the brain. • Biomarker Study: A study at the Institute for Systems Biology in Seattle's South Lake Union neighborhood, which explores stem cells in tumors removed from brain cancer patients at the Ivy Center. The project examines whether cancer stem cells are the cause of drug resistance in patients and enables researchers to develop new techniques to isolate these cells to study their molecular and genetic features. • Glioblastoma Vaccine Trial: A pilot project in partnership with investigators at the Fred Hutchinson Cancer Research Center to develop a new immunotherapy approach for treating brain cancer. Results have helped researchers determine which tumor markers will respond best to a brain tumor vaccine. • Ivy Glioblastoma Atlas Project: The project is in partnership with the Seattle-based Allen Institute for Brain Science to design a comprehensive 3-D map of gene activity in cancerous brain tumor tissue, specifically glioblastoma. The goal is to characterize where genes are expressed, or 'turned on,' in brain tumor tissue. The resulting public resource will accelerate the search for new treatments for brain cancer and allow scientists to focus on the genes that are unique to and matter for the disease. • Peer-Review Publications: Recent science and medical review publications featuring some of the Ivy Center's findings include <i>Cancer Research</i>, <i>Oncogene</i>, <i>Proceedings of the National Academy of Science</i>, <i>Proteomics</i>, <i>Genes and Cancer</i>, <i>PLOS One</i>, <i>BMC Genomics</i>, <i>Tissue Engineering</i>, as well as the <i>Journal of Cellular and Molecular Medicine</i>.
<p style="text-align: center;">FUNDING</p>	<ul style="list-style-type: none"> • In just five years, the Ivy Center has received approximately \$11 million in grant funding for clinical trials and research studies from the NIH, NCI, Ivy Foundation, Swedish Medical Center Foundation, ABC2, the Sabey Family, the Elliott Foundation, grateful patients and their families, as well as the Seattle Brain Cancer Walk (www.braincancerwalk.org). • The Ivy Center is actively fundraising to support future brain cancer and brain tumor research. If you have any questions about how you can support brain research at Swedish, contact Colleen Broman at the Swedish Medical Center Foundation (206-386-3527; colleen.broman@swedish.org).

<p style="text-align: center;">STAFF</p>	<p>Neurosurgery Greg Foltz, M.D. Sarah Jost, M.D. Ryder Gwinn, M.D. Marc Mayberg, M.D. David Newell, M.D. Rod Oskouian, M.D.</p> <p>Oncology John Henson IV, M.D., F.A.A.N. John Fitzharris, M.D.</p> <p>Radiation Oncology Brain Lee, M.D., Ph.D. Sandra Vermeulen, M.D. Ronald Young, M.D. Vivek Mehta, M.D.</p> <p>Integrative care Stacie Beam-Bruce, LISCW, MSW</p> <p>Neuroradiology John Henson IV, M.D., F.A.A.N. Bart Keogh, M.D., Ph.D. Pedro Vieco, M.D.</p> <p>Interventional Neuroradiology Joseph M. Eskridge, M.D. Yince Loh, M.D.</p>
<p style="text-align: center;">LOCATION</p>	<ul style="list-style-type: none"> • Swedish Neuroscience Institute James Tower (Swedish/Cherry Hill campus) 550 17th Avenue, Suite #540 Seattle, WA 98122

For more information, visit <http://www.swedish.org/body.cfm?id=22&oTopID=22> or call 206-320-4144.

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