

Worcester, Massachusetts, December 18, 2013 – The Ben & Catherine Ivy Foundation today announced a \$3 million grant to the Translational [Genomics](#) Research Institute (TGen), Nemucore Medical Innovations Inc., and Barrow Neurological Institute at St. Joseph's Hospital and Medical Center to help fund significant [brain tumor](#) research in Arizona.

The collaboration of TGen, Nemucore and Barrow will pursue ways to optimize targeted therapies delivered by nanotechnology systems to treat glioblastoma, the most common and most aggressive form of malignant [brain tumors](#).

This project is a primary example of translational research, moving laboratory findings as soon as practicable to patient care. Laboratory success should result in eventual follow-on efforts in the biomanufacturing of personalized medicine and implementation of new therapies in clinical trials.

"We are excited about this innovative approach to research, especially the collaboration between two major Arizona institutions: TGen and Barrow," said Catherine Ivy, Founder and President of the Ivy Foundation. "Knowing there is a tangible way to develop therapies specific to the needs of patients will enhance the care and treatment of every [brain](#) tumor patient - and that is priceless."

One of the goals of this Ivy Foundation grant is to enable TGen, Nemucore and Barrow to collaboratively align their findings toward the goal of creating new medications that can bridge the body's blood-brain barrier, which in the past has hampered the successful implementation of intravenous brain-[cancer](#) drugs.

Each of the collaborators is a leader in their respective fields:

- TGen's genomic sequencing - in which all 3 billion base-pair letters of human [DNA](#) are spelled out, in order - can be used to create molecular profiles of patients and match specific therapies to diseases, providing the promise of better clinical results while minimizing side effects.
- Nemucore specializes in the development of life-saving cancer nanomedicines, in which drugs are packaged in ways that evade cancer defenses, delivering medications that can knockout tumors.
- Barrow, which is internationally known for its treatment of neurological disorders and treats one of the highest volumes of brain tumors in the United States, will conduct preclinical work to design nanomedicines for better access to the tumor, and will also provide the setting for clinical trials, in which patients are the first to benefit from new therapies.

"Working with the research team from the outset of the study will be helpful. We can advise them on methods or components as they develop novel formulations suitable for crossing the blood-brain barrier," said Dr. Tim Coleman, CEO of Nemucore. "Without this type of integrated approach it would take much longer to translate these individualized investigational therapies to the clinic."

Based on the research findings, the team would work with a strategic manufacturing partner, Blue Ocean Biomanufacturing, to develop methods to manufacture personalized medicine for the treatment of glioblastoma.

Coleman also is CEO of Blue Ocean, which is developing a cutting edge, fully flexible manufacturing facility in Peoria, Arizona. With a focus on small-batch pharmaceuticals and personalized medicine, Blue Ocean will advance breakthrough technologies for producing biopharmaceuticals with reasonable economics. This revolutionary technology will make it possible to use the [genetics](#) of a single patient's tumor to customize and produce the medicine specific to them.

"Barrow's collaboration with TGen and Nemucore is unique in that we will develop novel drug delivery technology that fully spans basic academic science through bench top translation and manufacturing," says Dr. Rachael Sirianni, assistant professor at the Barrow [Brain Tumor](#) Research Center. "Our first and foremost goal is to improve the prospects for patients diagnosed with glioblastoma, and to translate our academic science into safe and effective therapies. This innovative partnership between our respective institutions and the funding provided by the Ivy Foundation will make it possible to bring forward academic research to benefit patients at Barrow and elsewhere."

"This grant is a tremendous step in changing the way medicine is developed in Arizona," said Dr. Michael Berens, TGen Deputy Director for Research Resources and Director of TGen's [Cancer](#) and Cell Biology Division. "This project should enable us to develop treatments that will bridge the blood-[brain](#) barrier. I wholeheartedly thank the Ivy Foundation for their continuing support of the work we are doing to find new and effective treatments for the patients afflicted with this most aggressive form of cancer."

