2013-2014 ANNUAL PROGRESS REPORT

GEORGE AND BARBARA BUSH ENDOWMENT FOR INNOVATIVE CANCER RESEARCH

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THE UNIVERSITY OF TEXAS MD Anderson Cancer Center
Making Cancer History®
The University of Texas MD Anderson Cancer Center has formed the largest international network of collaborating cancer centers, our Sister Institution Network. Currently, we have 33 sister institutions from 24 countries, including five consortia, the details of which can be viewed at www.mdanderson.org/gap. Many of them are national cancer centers, large non-profit hospitals or university-based cancer programs that are dominant in their country or region. Together, we fight cancer across all of MD Anderson’s mission areas, including cancer care, prevention, research and education.

To spark new collaborations, share knowledge and make innovative discoveries within our network of partners, Global Academic Programs (GAP), the team that supports the Sister Institution network, built the Sister Institution Network Fund (SINF), a seed grant program. Started in 2011, this program awards funds to MD Anderson faculty laboratories to support international collaboration. The funds provided by the Bush Endowment go exclusively into the laboratories of our faculty.

Participating partner organizations contribute by funding the research components of their laboratories. We collaborate globally, but fund locally. Access to the funds is on a competitive basis, allocated through peer review for scientific excellence and program-level review by the Sister Institution Network for impact.

The SINF has increased research activity in the network tremendously, and has energized our faculty and our partners across the world. The contribution of the Bush Endowment has helped us in Making Cancer History with our global partners through research.

Through the SINF, we have seeded 82 projects, bringing together 47 collaborating institutions from 27 countries. We have published over 70 papers together, and our faculty has gone on to leverage these seed investments with 19 grants worth $12 million, from sources such as the National Cancer Institute and the Cancer Prevention and Research Institute of Texas. Our research projects span the globe.

In recent years, we have emphasized projects that connect to MD Anderson’s Moon Shots Program and platforms, as well as projects that bring more than two institutions together. About half of the projects selected in recent cycles conform to these two criteria, and they have brought the global network closer to our flagship research endeavors while promoting additional intra-network collaboration.

One challenge that any seed grant program faces is maintaining the momentum that the initial funding phase provides by seeking additional funds from external sources. This challenge falls on the shoulders of the faculty who participate in the SINF, and to date, several have gone on to leverage the SINF investment into grants from other sources. We anticipate this trend will continue. Even in situations where a project does not go beyond the SINF-supported phase, in most instances, it has strengthened collaborative ties, enhanced research capacity and led to findings and publications.

A challenge for the GAP team is ensuring that the SINF mechanism is inclusive across the network, as well as covering a broad range of cancers. We have been able to involve many centers from across the world.

We are truly grateful for this support. Without funds from the Bush Endowment, we would not have means by which to stimulate collaborative research between our faculty and our international partners. Research programs, by their nature, require support; research groups need to be able to identify this before they can devote personnel and effort to new projects. The SINF mechanism has allowed an unprecedented level of collaborative activity, perhaps most notably through attendance at our annual GAP conference, which has increased markedly over the past several years. SINF-funded investigators are invited to participate in the conference and present their research, and we now routinely have approximately 1,000 attendees at the conference. None of this would have been possible without the generous support from the Bush Endowment. Thank you for your support.
GAP Activities – Research
Sister Institution Network Fund

- 82 projects
- 4 RFAs (FY11/12/13/14)
- 47 collaborating institutions
- 27 countries

Total ~ $16M (MD Anderson: $8.2; Network ~ $8M)

"collaborate globally & fund locally"

- 20+ cancer types
- broad range of research

Papers (71):
  Nature Imm., NEJM, Cell, Mol. Cell,
  Dev. Cell, JNCI, PNAS

Grants (19):
- NIH/NCI (11), CPRIT (6), ASCO,
  Foundations
Melanoma is the most serious of all skin cancers, resulting in over 10,000 mortalities per year in this country alone. Our ultimate goal is to eliminate melanoma in the United States and the world, through critical, goal-oriented research by translating results into improved diagnosis, treatment and overall melanoma patient care. Despite the excitement and progress in melanoma therapy over the last five years, there are still many challenges we need to overcome to achieve successful therapy for the majority of patients. Better treatments and new approaches are needed in order to improve the therapeutic outcomes of our patients, requiring laboratory development and testing, which are generally very costly. Obtaining a substantial amount of funding to focus on these new approaches is another significant challenge.

MD Anderson has made a commitment to the National Cancer Institute to financially support Specialized Programs of Research Excellence (SPORE) grants that are awarded to its faculty. As a result, the Bush Endowment has supported our second five-year Melanoma SPORE grant. This endowment is used to offset the costs of conducting the research associated with the SPORE grant. A portion of these funds provided salary support for junior faculty members as well as laboratory staff who support our Melanoma SPORE grant. Also, funds provided by this endowment were used to offset travel expenses to bring in our External Advisory Board to review the progress and continuation of the five projects and three cores associated with the SPORE grant, and to send faculty to national meetings to obtain information for future research collaborations and to present our research.

Initially, awarding of the SPORE was made possible in part due to the institutional commitment letter from our leadership, which included the promise of yearly funding. These funds are absolutely critical for the yearly success of the SPORE, mainly due to the standard budgetary constraints within the federally sponsored SPORE program. For example, it is not possible to award more than two individual developmental research projects with NCI grant funds; however, with support from the Bush Endowment, we were able to support a third project this past year, the work of Shenying Fang, M.D., Ph.D., of Surgical Oncology. Dr. Fang’s developmental project, entitled “C-reactive protein and melanoma outcomes,” led to a publication and a successful submission and award of a two-year research grant application from the National Institutes of Health. In addition, we were able to accommodate visiting professors to present their research to our melanoma program members, which led to expanded collaborations in melanoma research.

Whereas the National Cancer Institute has multiple funding opportunities for melanoma research, the funding for these specific, highly competitive SPORE awards is capped, and insufficient to support all aspects of our research endeavors. The leadership of the MD Anderson SPORE in Melanoma is extremely grateful for your support, which allows the SPORE investigators and melanoma program members the opportunity to continue their focus on melanoma research with fewer financial restraints. This support helps with the commitment of the institution to translational research, and helps bridge the gap between our research needs and the budgetary caps imposed by grant funds. Thank you for your confidence in our program.
Hepatocellular carcinoma (HCC), the most common form of primary liver cancer, is the fastest-growing cause of cancer mortality in the United States. Death rates are increasing by one to three percent every year. A disproportionate number of Americans affected by this devastating disease live in Texas, and this disparity is most startling among Mexican Americans in South Texas. In the Rio Grande Valley, a medically underserved area along the border of Mexico, the rates of liver cancer deaths are over three times the national average.

Liver cancer remains uncommon in the U.S., but that is not the case around the world. In some countries, it is the most common form of cancer and the biggest cause of cancer mortality. The outlook for patients with liver cancer is poor. The American Cancer Society reports that more than half of U.S. cases are at an advanced stage before they are detected, and just 15 percent of these patients survive five years or longer. Liver cancer almost always starts in livers that are already compromised by cirrhosis, a slowly progressing disease in which healthy liver tissue is replaced with scar tissue. We are in desperate need of novel strategies to identify those at high risk for liver cancer.

Through workshops and conference calls, I developed a consortium of experts in early detection of cancer, hepatology, liver cancer epidemiology and population-based cohorts of Mexican Americans in South Texas. The goal was to collaborate on ambitious projects to develop and validate novel effective strategies to detect liver cancer earlier in at-risk patients. We also sought to understand the risks associated with the higher incidence of liver cancer observed in Mexican Americans in South Texas. In this group, I have the responsibility to discover novel biomarkers to identify subjects at high risk and to use surveillance for the early detection of liver cancer. Tremendous progress has been made in the first year of this project.

We secured funding to support the generation of a large prospective cohort of patients with cirrhosis. We also made significant progress in determining the prevalence of known risk factors in subjects with cirrhosis or HCC in Cameron County. We built an infrastructure to work with local hospitals and clinicians to expand our research program to all patients with HCC in Texas.

To implement our research discovery in the clinic either for surveillance of liver cancer or for targeting underserved communities, we will need large validation studies relying on prospective cohorts and community cohorts. While we made significant progress in developing our infrastructure, we will need long-term support to complete these projects.

Your support of the Bush Endowment allowed us to initiate this ambitious project, building a strong foundation for our research. We are now in a position to make a significant impact on the survival of patients affected with liver cancer. We are incredibly grateful for your support, which has made this important work possible.