The Training and Education Program of the University of Guam/
University of Hawai‘i Cancer Center Partnership

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Although funding from United States and international health organizations is contributing to infrastructure development and health systems strengthening in the Pacific region, Guam and the neighboring US-Affiliated Pacific Islands (USAPI) have historically lacked the infrastructure (eg, cancer screening and treatment facilities, scientific laboratories, long-standing cancer registries) and trained personnel (eg, researchers, clinicians, data registrars) necessary to conduct effective cancer research. Weaknesses in the regional educational pipeline (K-12), particularly in mathematics and science, contribute to the low numbers of Americans of Pacific Island ancestry in master’s and doctoral degree programs across the country. Relatively low faculty salaries, geographical isolation, limited funding, outdated facilities, institutional barriers, and outmigration further challenge efforts led by academic and leading research institutions to establish research training programs and research partnerships in the region. Despite the many challenges, however, it is clear that research and research training must be part of the solution if the Pacific region and Pacific Islanders are to realize improved health, less suffering, and fewer deaths in the 21st century.

The University of Hawai‘i Cancer Center (UHCC) and the University of Guam (UOG) have shared a commitment to serve the needs of populations and communities in the Pacific region through improving cancer research, care, training and education, and outreach to ultimately reduce cancer health disparities in the region. Funding from the National Cancer Institute’s (NCI) Center to Reduce Cancer Health Disparities supports the long-standing partnership of the two institutions, initiated in 2002 to increase the number of minority scientists of Pacific Islander ancestry engaged in cancer research while building capacity at the University of Guam to conduct cancer research, and to sharpen the focus at UHCC in addressing cancer health disparities relevant to the Pacific region. Towards this objective, the UOG/UHCC Partnership supports a Training and Education Program. The aims of the Training and Education Program include:

1. Train minority Pacific Islander students in cancer research at the MS level at the University of Guam and at the PhD level at the University of Hawai‘i;
2. Stimulate cancer research efforts at the University of Guam through mentorship and faculty development; and
3. Develop a cancer health disparities track in the Micronesian Studies Program, a master’s program at the University of Guam.

Student Training in Cancer Research

With a focus on community outreach, opportunities for master’s students in social, behavioral, and cultural studies at UOG are made available through graduate cancer research fellowships supported by the UOG/UHCC Partnership. UOG students with undergraduate degrees in disciplines such as Biology, Chemistry, Psychology, and others, are solicited to participate in MS degree training at UOG in cancer research with an emphasis on cancer health disparities. Two students are accepted into the program each year and are provided tuition waivers and graduate research assistantships for a period of up to two years. Students accepted into the fellowship program are mentored by faculty members at UOG to work on cancer health disparities research related to their thesis project.

Students trained in the Master’s Training Program in Cancer Research at the UOG are strongly encouraged to continue with their graduate education by participating in the PhD Training Program in Cancer Research at the UH Cancer Center, or in a PhD cancer research training program at another institution on the US mainland.

With funds provided by the UOG/UHCC Partnership grant and additional support from the UH Cancer Center, two students are supported each year in PhD level training in cancer research under the mentorship of established investigators at UHCC. Students interested in the PhD cancer training opportunity must first apply and fulfill the admission requirements to the PhD graduate program to which the sponsoring UHCC faculty member belongs. Graduate programs at the University of Hawai‘i considered by students pursuing careers in cancer research include Epidemiology, Nutrition, Public Health Sciences, Social Welfare, Molecular Sciences and Bioengineering, Chemistry, and Cell and Molecular Biology.

In their first year of study, PhD students accepted into the training program experience research rotations in the laboratories — basic or behavioral — of their mentors. This experience expands their knowledge of the types of cancer research conducted which is essential, for example, to the student’s decision to select a particular cancer research laboratory to perform their dissertation research.

In years two through four, students focus on their dissertation research necessary to fulfill their PhD requirements. During this period, the trainee learns the skills, knowledge, and concepts, while exercising the perseverance necessary to perform independent cancer research. While the UOG/UHCC Partnership provides a graduate research assistantship and tuition waiver in the first year of training, funding secured by the trainee’s mentor typically supports the student’s dissertation research in years two through four.

Students participating in both the master’s and PhD training programs offered through the UOG/UHCC Partnership are encouraged to attend regional and national-level cancer research meetings to present their research results. Likewise, trainees participate in the UOG/UHCC Partnership’s Cancer Health Disparities Seminar Series, launched in September 2010, and other research seminars, journal clubs, and learning opportunities sponsored by the partnering institutions.
Since the inception of the UOG/UHCC Partnership, 1 PhD and 6 master’s students have completed their training. Currently, there are 5 masters students and 3 PhD students supported by the program. In addition, 2 masters student graduates have been accepted by PhD programs at US mainland institutions.

Ultimately, students trained by the UOG/UHCC Training Program in Cancer Research will contribute to a nucleus of cancer researchers committed to addressing cancer health disparities and other health priorities in Guam and the USAPI.

**Stimulate Cancer Research Efforts at the University of Guam**

Faculty at the UOG are selected by the Partnership’s Internal Advisory Committee to participate in a 3 month summer research experience in association with the appropriate faculty partner at UHCC. This exchange provides an opportunity for UOG faculty to engage in cancer research as it is performed in leading research programs. The faculty summer research experience assists in a significant way in the development of pilot projects, and has proven to facilitate the development of long-standing research collaborations. Where appropriate, reciprocal visits of UHCC faculty to the University of Guam to develop collaborative research projects are also supported.

Since the inception of the UOG/UHCC Partnership, 9 UOG faculty have benefitted from the mentorship and training received through the summer exchange program. Leadership at the partnering institutions continue to make every effort to encourage and facilitate research collaborations between the UOG and UHCC faculty, recognizing that sustainable collaborations are critical to the long term cancer research activities at the UOG and to building the capacity and infrastructure necessary to support future cancer research in the Pacific region.

**Cancer Health Disparities Research Track for Master’s Students at UOG**

With funding from the UOG/UHCC Partnership, the Micronesian Studies Program (MSP) master’s degree now includes a specialization in Pacific Islander Cancer Health Disparities Research. The new specialization builds on the unique and strong interdisciplinary foundation currently supporting several other MSP specializations. In addition to the MSP curriculum, which provides rigorous social and behavioral science training as well as cultural sensitivity and language skills training, students who pursue the MSP cancer health disparities research option are required to conduct cancer health disparities research under the guidance of a faculty mentor and participate in required enrichment and preparatory activities. A research thesis is required, and graduating students are expected to publish their research in a refereed journal.

In addition to the new MSP curriculum and adaptations to existing MSP courses, a cancer health disparities seminar, open to faculty and students at UOG and UHCC, has been developed and made available through the partnership. Students and faculty at the partnering institutions participate in and contribute to the seminar series conducted simultaneously via video-teleconferencing at both institutions. Speakers have presented on a variety of cancer topics such as tumor registries and cancer surveillance, sample size calculations and power analysis, community based participatory research, and cervical cancer and the human papillomavirus. Students and faculty from the UOG and UHCC have also presented their research during the seminar series which is offered three times each semester.

**Today's Undergraduate Student, Tomorrow's PhD Researcher**

The Training and Education Program of the UOG/UHCC Partnership responds to the critical need for cancer health research and community outreach capacity in Guam and neighboring USAPI to address the growing cancer burden in the region.

For more information about the UOG/UHCC Partnership, and applications for the master’s and PhD Training Program in Cancer Research, visit the partnership’s Website at www.uog.edu/cancer/

**Supported by NIH Grants U54 CA 143727 and U54 CA 143728.**

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**Reference**