



CANCER PREVENTION & RESEARCH INSTITUTE OF TEXAS

Award ID:
RP140108

Project Title:
Molecularly-Targeted Approaches to Cancer Therapeutics, Diagnostics and Prevention

Award Mechanism:
Research Training Award Continuation Grants for Years 4 and 5

Principal Investigator:
Sessler, Jonathan

Entity:
The University of Texas at Austin

Lay Summary:

With this application, renewal funds are sought to support Years 4 and 5 of what, to date, has been a highly successful three-year training program in cancer research at The University of Texas at Austin (UT Austin). The PI (Dr. Jonathan Sessler) and co-PI (Dr. John DiGiovanni), who will serve as leaders in Year 4 and 5, oversaw the training grant during Years 1-3. Under their guidance, and with administrative support provided by Ms. Yvonne Murray and Dr. Angel Syrett, up to 7 postdoctoral and up to 7 predoctoral trainees were supported each year during the lifetime of the original award. The trainees were drawn from three separate colleges at UT Austin (Pharmacy, Natural Science, and Engineering) and involved mentors and co-mentors across a wide range of cancer-related disciplines. In addition, up to 15 undergraduate researchers per year were supported as part of a summer undergraduate research program (SURP) associated with this training grant. All trainees and SURP students were drawn from a highly diverse group of applicants. During Years 1-3, and in accord with the implementation plan as originally proposed, a winning formula was developed that provided an excellent training environment. This approach also led to top-notch cancer-related research being performed. There are several keys to this success. They provide the basis for the training plan we are now putting forward for Years 4 and 5. The first key to success was to assemble a cadre of faculty with expertise in cancer. Fortunately, UT Austin is incredibly broad in terms of the type of cancer research being pursued. Drs. Sessler and DiGiovanni were thus able to create a Program Steering Committee (PSC) for this training program that was drawn from three different colleges and which consisted of the most distinguished faculty with cancer expertise on campus. With departures and new hires, this PSC is now slightly modified from its original for Years 4 and 5. In addition, a variety of well funded, world-renowned faculty served as primary mentors for the trainees and this will be true for all who serve in this capacity during Years 4 and 5. This will ensure that the trainees have the wherewithal and facilities needed to carry out top-level research. The second key to success, and an aspect of the training program that will be continued into Years 4 and 5, was to require each trainee to have two faculty mentors. At least one of these supervisors had to be a UT Austin faculty member. However, the co-supervisor could be from a different institution. As it turned out co-supervisors came from cancer research centers as close as MD Anderson and as far afield as the University of Toronto. The benefit to the students of the resulting range not just in geography, but also outlook, proved immeasurable; they were exposed to a diversity of views that would

not have been possible in a normal academic setting. A third key to success was that trainees were required to take specialized courses in cancer, technical writing, and ethics. As part of their education, trainees were also required to mentor fellow trainees (in the case of the postdocs) and summer undergraduates. This strategy, which will be continued, worked remarkably well and led to new learning and to the seeding of new research projects. Again, we plan to keep this successful aspect of the program in place for Years 4 and 5. The fourth key to success, and again a feature we plan to keep as a centerpiece of the program during its final two years, was to expose the trainees to a diversity of views and a broad base of knowledge. This was done primarily through our biweekly trainee seminars. During the academic year, two trainees were asked to present the results of their research every other Tuesday afternoon. This proved to work even better than originally planned in that trainees with expertise in cell biology, presenting to budding immunologists, biochemists, synthetic chemists, enzymologists, microbiologists, medicinal chemists, biomedical engineers and nutrition science researchers, etc. were able to teach their fellow trainees about topics to which many had never been exposed. In the summer, the Tuesday meetings were weekly and were in the form of a journal club, wherein new literature was presented by the trainees. Finally, a successful aspect of Years 1-3 that will be featured in the final two years was the summer retreat. At this retreat, all undergraduate researchers were required to present the results of the research to the program director, co-director, trainees and fellow summer students. This provided a further venue for learning across disciplines and helped solidify the group spirit among the program members. The success we have encountered and the formula for training we have put in place makes us confident that Years 4 and 5 of this program will be as productive and useful as those we have already enjoyed.