

SBIR SUCCESSES



NBDC and SBIR/STTR

NBDC helps university faculty and other entrepreneurs understand the SBIR program, as well as the Small Business Technology Transfer (STTR), a program requiring university/entrepreneur collaboration.

NBDC business services—including market research, manufacturing, capital formation, and management structure assistance—can help grant seekers submit a successful SBIR proposal.

LI-COR BIOSCIENCES

As part of an agronomy research team at the University of Nebraska at Lincoln (UNL), William Biggs developed a basic instrument to measure the quantity of light usable for plant photosynthesis. When other scientists from around the world began to request similar instruments, LI-COR was launched in 1971.

LI-COR Biosciences is now a leader in the design, manufacture, and marketing of integrated instrument systems for plant biology, biotechnology, drug discovery and environmental research. Its products are used in more than 100 countries world-wide. With more than 200 employees (about 45 of whom have Ph.D. degrees); LI-COR has field locations in the U.S., subsidiaries in Germany and the United Kingdom, and a global network of distributors. Its scientists and engineers are actively involved in the research community, publishing in leading journals and closely collaborating with leading research universities and government labs.

LI-COR's product line has expanded through the years, partially due to development funded by Small Business Innovative Research (SBIR) and Small Business Technology Transfer (STTR) grants.

LI-COR began its biotechnology work in the early 1980s, collaborating on a DNA sequencing project with UNL School of Biological Sciences. Since then, SBIR and STTR grants have helped develop near-infrared fluorescence detection and single molecule DNA sequencing. The Odyssey® Infrared Imaging System, a result of an STTR phase I grant as well as SBIR phase I and phase II grants, won the 2006 North American Drug Discovery Technologies Product of the Year Award.

In 1993, LI-COR applied for its first SBIR grant from the National Institutes of Health (NIH). Although their first attempts were unsuccessful, subsequent SBIR and STTR projects submitted to National Science Foundation (NSF) and NIH up through 2002 were successful in contributing to the ultimate commercialization of biotechnology products. In 1999, LI-COR introduced the open path CO₂/H₂O analyzer—a LI-COR environmental product that is a result of work funded initially by a DOE SBIR phase I grant.

In the last twelve years, LI-COR has submitted 17 SBIR phase I proposals. They have received funding for 10, five were not funded and two are pending. Five of eight submissions for phase II SBIR grants have been funded. Both STTR proposals submitted by LI-COR have been funded. Although some proposals were denied, LI-COR used the reviewer comments to resubmit improved proposals that were frequently successful.



Lyle Middendorf, Senior Vice President and Chief Technical Officer for Advanced Research and Development, provides several tips for companies who apply for SBIR or STTR awards.

- Use SBIR/STTR awards to further research on a product or technology that your company would want to pursue anyway.
 - ◆ SBIR phase I awards are feasibility studies – to test an idea. Although you may not ultimately produce a product from the exact result of the award, from a business standpoint, it must correlate to something you would likely pursue. Knowledge gained from the work will thus be used somehow by your company.
 - ◆ Awards can be used to improve manufacturing of existing products – to make them more affordable, portable, reliable, etc.
 - ◆ Expenses charged to a project can be “grandfathered” up to 90 days prior to receipt of the award. In at least one case, LI-COR was able immediately spend the majority of its entire award because they had moved ahead with the project before they knew whether or not the SBIR money would be available.
- Get to know the agency program manager
 - ◆ The project manager and the grants manager are two people who are critical to the successful completion of a project. Close contact with them helps your company propose a project that fits with their direct need and fits well with their overall mission and goals.
 - ◆ The project manager needs to understand your company and believe in your ability to successfully complete the project.
 - ◆ Phase II awards are only available to phase I winners. It is important to keep the program manager informed of progress in phase I, in order to have the best opportunity for a phase II award.
- Have an effective commercialization plan
 - ◆ Agencies are under pressure to have grant recipients achieve commercial success. Commercialization plans are a significant section of the proposal.
 - ◆ When other sources of funding (internal or external) are available, emphasize them. This helps prove your company is capable of achieving commercial success.
- Follow up and resubmit
 - ◆ Get the review comments from proposals. Ideas may not be fully explained to reviewers, or commercialization plans not convincing. By reviewing the comments, any perceived weakness can be addressed for a subsequent submission.
 - ◆ Agencies with external review panels will typically allow companies to exclude an individual reviewer if there is a valid reason.
- Documentation and relationships are key for STTR efforts as well as for SBIR efforts with university subcontracts
 - ◆ The technology transfer grants require a cooperative relationship with the university. It is important to have the intellectual property agreements in place prior to beginning work.
 - ◆ Define who will work on the project from the university. Capitalize on the opportunity by working with the best university researchers.
- SBIR and STTR grants are an investment in the future.



LI-COR is a home-grown, innovative company that has been very successful due to their technical expertise and management skill. Their success at getting and effectively using SBIR and STTR awards to further technology and their own business goals is a model to small businesses throughout Nebraska and the United States.

LI-COR has been very successful using these grants to fund emerging research activities. While the grants provided cash to further research, LI-COR provided an investment of people in planning, documentation, and project management. It typically takes more than seven months to receive an award after submittal of an application. Preparation of applications takes up to three months. Considering the time and resources involved, the company has to be really interested in the proposed innovation.