

Biomedical research is supported principally by two sources: the National Institutes of Health (NIH) and industry. For research in medical physics, the National Cancer Institute (NCI) and the National Institute of Biomedical Imaging and Bioengineering (NIBIB) are the two principal supporting agencies within the NIH. These agencies have a number of funding programs that are designed for specific purposes. Applications for support from them are prepared according to specific guidelines and must match the intent of a specific program. Writing a winning application is an art as well as a science, and counsel from experienced grantees is invaluable during the preparation of an application. It is also important to understand the review process that ensues after an application is submitted, and the criteria by which a final decision about funding of the application is reached.

The second source of support, industry, is much less structured and usually requires a personal relationship between the investigator and the company providing the research funding. Negotiating a research agreement between the investigator, the investigator's institution, and the company can be challenging, because it involves issues such as the publication of research results, ownership of intellectual property, and indemnification of each party against wrongdoing by the other. At times these negotiations break down because the parties cannot agree on the issues, often because one party (frequently the institution) assumes an unreasonable position. Successful negotiating an industry research agreement requires diplomacy and sensitivity as well as objectivity and focus.

In all research grants and agreements, the protection of intellectual property (IP) is of overriding importance, especially now that institutions are viewed increasingly as engines for economic development through technology licenses and the formation of start-up companies. IP protection is less arcane than it may seem, but it does require dedicated time and effort by the investigator and a willingness to work with attorneys and the institution's technology transfer office.