

Undergraduate Biotechnology Research Fellowship

Supported by Cotton Incorporated



Application Guidelines and Instructions

Purpose

This program will prepare undergraduate science and engineering majors for careers in biotechnology by supporting relevant hands-on laboratory research experience and other activities that contribute to career preparation. Undergraduate research funded in this program must have strong relevance to biotechnology science, technology, and applications and must fall into at least one of four different tracks:

- **Agricultural Biotechnology** projects have relevance to agricultural biotechnology science, technology, and applications. Research using a cotton system or directly applicable to the cotton industry is encouraged, but not required.
- **Industry-Relevant Projects** should directly involve pharmaceutical and/or biotechnology-related industry. Examples include research internships at companies, on-campus research on a problem in collaboration with a specific company, or research on an application demonstrably near commercialization.
- **Collaborative Projects** should enable students to engage in research collaborations between different institutions and/or permit students to work on projects at site(s) outside their home institution. Interdisciplinary research collaborations are especially encouraged.
- **Regionally-Relevant Projects** focus on problems relevant to the needs, and/or biotechnology-related industry important to a specific region in North Carolina (e.g., marine biotech, natural products).

Application Deadline

Applications will be due at NOON on January 25, 2012, with notification of awards by April 1, 2012. Applications must be submitted electronically as described herein. Proposals sent by other means will not be accepted.

Eligibility

Institutions: Any public or private four-year college or university in North Carolina may apply.

Students: Candidates must be students in good standing at the applicant institution, enrolled full-time in the current semester (Spring 2012). Institutions are encouraged to recruit North Carolina residents.

Mentors: Mentors may be investigators at North Carolina academic or research institutions or North Carolina bioscience industry personnel. Mentors must have the requisite expertise to supervise the proposed projects.

Award Amounts and Funding Restrictions

Each fellowship is limited to \$5,000. An institution submits a separate application for each student project. A maximum of three applications is allowed per institution. The institution is responsible for coordinating applications.

For each fellowship, a minimum of \$3,500 must be allocated for student stipend. At the institution's discretion, \$1,500 may be allocated for student and/or faculty stipends, travel to meetings to fulfill project requirements, or student research support (supplies, software, on-line database access, etc., but **not** equipment). Funds may **not** be used for indirect costs and routine administrative expenses.

The award period is 12 months.

Project Requirements and Guidelines

Institutional Responsibilities

- The host institution must appoint a Project Director who will manage the student selection and placement process, track student progress, and serve as the Center's primary contact for all applications from a given institution.
- If a Student Fellow is doing research off-campus at a company or other facility, the Project Director must meet regularly with Student Fellow and mentor to ensure that grant requirements are met.
- The institution is responsible for selecting students for proposed fellowships. Recommended selection criteria include but are not limited to: minimum overall GPA (we suggest a minimum of 2.75), previous laboratory experience (both students with no previous hands-on research experience and students with extensive experience could benefit), strong interest in a career in industry or academic research, demonstrated leadership and effectiveness in academic or extracurricular activities, and excellent communication skills.

Student Fellow Responsibilities

- Student Fellows must work a minimum of 400 hours on their research, although additional time may be needed to complete other program requirements described below. Work may be performed full or part time and must be completed prior to May 1, 2013. It is desirable that as much of the work as possible be done full time in order to enhance the research experience.
- Student Fellows may receive academic credit for their research experience at the discretion of the institution.
- During the award period, Student Fellows must give a presentation to their peers at the home department or institution on both the scientific and business aspects of their research.
- Student Fellows also must present a paper or poster at an appropriate professional conference, e.g., North Carolina Academy of Science, undergraduate research meetings, or state chapter meetings of professional societies.
- Student Fellows are required to attend at least one meeting during the award period at the state or regional level concerning the business aspects of biotechnology. Meetings do not need to be identified in the grant application. Biotechnology Center Regional Directors can assist students and faculty in identifying appropriate meetings in their area. Contact information for the Regional Offices is located on the Biotech Center website at <http://www.ncbiotech.org/>.

- If working in industry or in an academic-industrial collaboration, Student Fellows must conform to any company requirements concerning confidentiality agreements, training, or other matters.

Reporting

- Student Fellows must provide a summary of their research (which may be a copy of one of their presentations) to the Center.
- Institutions must report the Student Fellows' employment, graduate work, or other career status or intentions and their current contact information to the Center at the end of the award period, upon student graduation, and one year after graduation.

Research Fields

Student work funded in this program must have strong relevance to biotechnology-related science and applications of technology based on this science and fall into one of the tracks previously described. Examples of admissible project areas include (but are not limited to): molecular and cellular biology, genetics, biochemistry, microbiology, immunology, bioinformatics and systems biology, bionanotechnology, tissue engineering, bioprocess engineering, bioanalytical chemistry, biomass conversion, and bioremediation. Projects related to clinical medical practice will not be funded, unless they are specifically linked to clinical trials management for biologics or molecular diagnostics. In medical device projects, the emphasis must be on a biological component or interface. In the case of agricultural biotechnology projects, admissible project areas include (but are not limited to): molecular and cellular biology, genetics, biochemistry, microbiology, plant pathology, bioinformatics and systems biology, biological and agricultural engineering, crop science, entomology, molecular and structural biochemistry, bioanalytical chemistry, and weed science.

Review Process

Applications will be evaluated by an internal review process. Review criteria will include but may not be limited to the following:

- Adherence to program and application requirements as described herein
- Relevance of project to biotechnology as defined herein
- Student and mentor qualifications
- Effectiveness of institutional organization for supervision and administration of fellowship(s)

Application Instructions

Note: Submit a separate application for each student from your institution. If your institution is submitting multiple applications, much of the information except that specific to an individual student can be copied from one application to another.

Step 1: Read the requirements and instructions

Review these instructions carefully. If you have any questions contact Ginny DeLuca at 919-549-8842 or Virginia_deluca@ncbiotech.org.

The Undergraduate Biotechnology Research Fellowship application is comprised of three documents: the Proposal, the Budget Form, and Supporting Documentation.

Step 2: Prepare the Proposal

Title Page

Create a title page which contains the project title, project track, student name, and mentor name.

Proposal Narrative

The narrative section of the proposal includes the following two parts. Prepare your narrative by responding to each item below in the order listed.

Part I. General Information About How Your Institution Will Administer Fellowship

This part of the proposal narrative should not exceed three pages.

- Description of how you selected Student Fellow
- Description of your plan for supervising and meeting regularly with a Student Fellow who may be doing their research in a company or other off-campus site
- Description of activities other than those required in these guidelines, if any, that you propose for the Student Fellow
- Budget Justification: Provide:
 - Explanation for the allocation of funds requested on the Budget Form;
 - Other funding sources that your institution or department has to support undergraduate research;

Part II. Student Research Projects

Provide the following information in the order given, limited to three pages per student:

- Title of research project
- Name of student, student's major and area of concentration, classification (e.g. Jr., Sr.) and expected date of graduation
- Student's expected work schedule on the project

- Mentor's name, title, and academic department or company
- Letter from the Mentor recommending the selected student, verifying Mentor's commitment to supervise the student, and verifying Mentor's agreement to all terms and conditions of an award, as described in this document.
- Project track (industry-relevant, collaborative, or regionally-relevant). Some projects may fall into more than one track.
- Description of the student's project. Describe how the proposed project applies to the chosen track. Identify specific milestones the student is expected to accomplish. Include a few key references if desired.
- List of letters you will provide in the Supporting Documentation section of the proposal.

Combine the Title Page, Part I and Part II into a single document and convert it to a PDF file. This file cannot exceed 1 MB in size.

Step 3: Prepare the Budget

Using the Budget Form located at www.ncbiotech.org/undergrad_biotech, itemize the costs for the student stipend, faculty stipend, travel and other research support. Justification for each budget item should be provided in Part 1 of the proposal narrative.

See the section above on "Award Amounts and Funding Restrictions" for details on allowable and unallowable costs.

Note: The name of the applicant institution must be included in the space provided at the top of the Budget Form.

Step 4: Prepare the Supporting Documentation

Provide the following required documents:

- Complete the information on the Application Cover Sheet, located at www.ncbiotech.org/undergrad_biotech and include the following required signatures:
 - The Project Director, who is responsible for administration of Student Fellow selection, placement, and supervision.
 - The Authorized Official, who is the person authorized to sign and submit proposals for the institution.
- Resume or CV for proposed mentor (limited to 2 pages in length)
- Resume or CV for student

- Letter from student addressing the following:
 - Why student chose their academic major;
 - Why student wants to engage in the research;
 - The significance of the research from the student’s point of view;
 - How this fellowship will support future career plans;
 - Student plans immediately following graduation;
 - Verification of student’s commitment to observe the terms and conditions of an award, as described in this document.
- Letter(s) of recommendation for student from at least one faculty member other than the Mentor

Combine the items listed above into a single document and convert it into a PDF file. This file cannot exceed 1 MB in size.

Step 5: Submit Application

Applications must be submitted through the NC Biotechnology Center online application system at www.ncbiotech.org/undergrad_biotech.

- Complete the data fields on all pages of the online application form. You can stop and save at any time and return to finish later. You will receive an email with a link and password for returning to your proposal. Please save this information.
- Follow the online instructions for uploading the required sections of the application: Proposal, Budget Form, and Supporting Documentation. The maximum size for each of these files is 1 MB.
- Review and submit the proposal according to the online instructions.

Submission of your grant application indicates that:

- You have read and understand the information and directions in this Application Package and agree to be bound by the conditions stated herein.
- You release the North Carolina Biotechnology Center from any claim for damages caused by:
 - Disclosures required under the provisions of any North Carolina or United States law, statute, or regulation,
 - Disclosures made in connection with the North Carolina Biotechnology Center’s funding review and approval process,
 - Disclosures required by rule or order of any court of competent jurisdiction, or
 - Any other non-negligent, inadvertent, unintentional, unknowing, or immaterial disclosure.

- All research conducted during the proposed project is performed in accordance with established university policies and procedures, including but not limited to policies and procedures applicable to research involving human subjects, laboratory animals, or hazardous agents and materials.
- If the proposed project involves vertebrate animals, the project complies with federal guidelines for vertebrate animal care and experimentation.

You will receive an email acknowledgement of the receipt of your proposal.

Information Release

It is the policy of the Biotechnology Center to announce its awards through press releases and other publications. Meetings are also advertised on our website calendar. These communications typically include the information provided by the applicant on the proposal Cover Sheet. No information is released on declined proposals.

Confidentiality

The Biotechnology Center will endeavor to maintain the confidentiality of all applicants’ information. However, the applicant is responsible for not disclosing any information that should not be reviewed outside of the Biotechnology Center.

About the Sponsor

The 2012 Undergraduate Research Fellowship program is funded in part thanks to support from Cotton Incorporated. From agricultural, fiber and textile research, market information and technical services, to advertising and public relations, fashion forecasts and retail promotions, Cotton Incorporated’s Agricultural Research Division seeks to enhance the profitability of cotton farming and ginning in the U.S. by supporting the adoption and development of innovations created through the public sector, and private-public sector cooperation.

