

**North  
Carolina  
Biotechnology  
Center**

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August 31, 2011

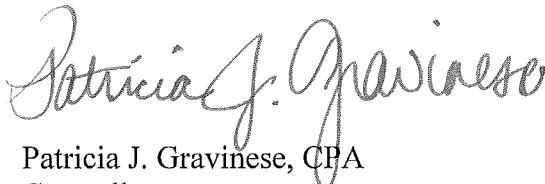
Joint Legislative Commission on Governmental Operations  
c/o Ms. Kristin Walker, Fiscal Research Division  
619 Legislative Office Building, 300 N. Salisbury Street  
Raleigh, NC 27603-5925

Dear Ms. Walker:

Attached you will find the North Carolina Biotechnology Center's program activities, objectives, and accomplishments, and a detailed report of expenditures for the fiscal year ended June 30, 2011. According to the State-Aid Reporting Requirements Section 14.22 (a), this report is due by September 1, 2011 through [govops@ncleg.net](mailto:govops@ncleg.net). I am also sending a PDF via email. Please request a hard copy to be mailed if required. Otherwise, the submission of this report through [govops@ncleg.net](mailto:govops@ncleg.net) and by email is considered complete. Our audited financial statements have not been issued. I will forward those as soon as they are available.

If you have any questions concerning the attached information, or if it is not complete, please don't hesitate to contact me.

Regards,

  
Patricia J. Gravinese, CPA  
Controller

Cc: Ms. Lanier McRee, Fiscal Analyst, NCGA  
Mr. Trevor Minor, Budget Analyst, OSBM  
Ms. Monique Johnson, Internal Auditor, NC Dept of Commerce

# Cover Page

Report Title: State fiscal year program activities, objectives, and accomplishments, and State fiscal year itemized expenditures

Legal citation: State-Aid Reporting Requirements  
Section 14.22 (a)

Due date: September 1, 2011

Submission date: August 31, 2011

Receiving entities: Joint Legislative Commission on Governmental Affairs  
Fiscal Research Division, NC General Assembly  
Office of State Budget & Management  
NC Department of Commerce

Submitting entity: **The North Carolina Biotechnology Center**

**The North Carolina Biotechnology Center  
Annual Report Summary  
2010-11 Program Activities, Objectives, and Accomplishments**

In the early 1980s, the North Carolina Biotechnology Center began its work to establish the partnerships and for a thriving biotechnology industry. The still-young science promised to help turn around the state's economy, which was losing jobs in its traditional powerhouse sectors of manufacturing and agriculture.

Three decades later, the cycles of growth and constriction continue to hit North Carolina harder than its average national counterparts. But amid the job losses in the state during this recession, biotechnology employment increased by 4.1 percent.

The state's industry includes 530 companies that employ 59,000 people across the state, a strong community centered on the partnerships and strategic activities supported by the Biotechnology Center.

The Biotech Center shores up the path between idea and product by supporting researchers, businesses and educators across the state. That pipeline—from scientific muscle to superior workforce training programs—is the basis of an international recruitment effort with a strong message: join a world leader in biotechnology.

During the 2011 fiscal year, the Biotech Center worked at all points along that pipeline to support job creation in North Carolina.

**From idea to product**

The Biotech Center primes the pipeline by strengthening university research and supporting economic development activities. Grants provide funds to pay for research equipment used by several researchers, to test new research ideas, to encourage commercialization, and to build statewide biotechnology development capacity. These grants are awarded by the Center's Science and Technology Development program, which this year awarded:

- Eight Biotechnology Research Grants totaling \$595,325.
- Four Collaborative Funding Grants totaling \$400,000.
- Two Grantsmanship Training Grants totaling \$8,000.
- 12 Institutional Development Grants totaling \$1,378,772.
- Four Multi-disciplinary Research Grants totaling \$945,881.
- Two Regional Development Grants totaling \$100,000.

The direct economic impact of these awards includes 34.5 job years funded and more than \$166,000 was potentially spent for goods and services at N.C. companies.

The unit also continued its work to increase grant-writing skills through a series of programs statewide and through creation of Web-based presentations. Together, these two efforts have reached hundreds of potential grant applicants.

To take ideas from lab to market, the Biotech Center's Business and Technology Development Program provides a range of services to spur the inception and growth of North Carolina life sciences companies. The Technology Enhancement Grant (TEG) and Business Acceleration and Technology Out-Licensing Network (BATON) programs support universities and research institutions in activities to license technology and form start-up companies. Three loan programs provide funding for company inception, technology development and corporate growth.

During FY 2011, these program activities included:

- A record five TEGs awarded for a total of \$249,842. This included the first to UNC-Charlotte. As a result of one TEG, a North Carolina startup company licensed a technology supported by the grant.
- The BATON program added four new North Carolina biotechnology companies, bringing the total number of start-up companies supported by the program to 21.
- North Carolina companies received nine loans totaling \$1.6 million.
  - To date, for every dollar awarded by the Biotechnology Center since inception of the company award programs, recipients have received \$103 in follow-on funding from external sources.

### **Commercializing Ideas**

The Centers of Innovation (COI) grant program supports the growth of nascent biotechnology-related industry sectors within North Carolina whose expansion and maturation will add new sources of revenue into the state's economy. The established COIs will work to establish public-private partnerships and to align industry need with the required technological innovation that can provide an appropriate solution. These partnerships will better maximize business opportunities within their industry sector. This year, one COI was formally transitioned to its Phase II implementation phase while three established COIs have continued to execute on their business plans. A few brief highlights for each COI follows:

*Phase I to Phase II transition – formal approval of Phase II funding with initial \$250,000 to create the new entity and begin operations*

- Marine Biotechnology – An engaged group of stakeholders that included representation from all marine institutes in North Carolina created a preliminary business plan for the Marine Biotech Center of Innovation. This preliminary plan and budget was approved for the transition to Phase II COI funding. The initial funding will allow the establishment of a board of directors, the recruitment and hiring of an Executive Director and formal launch of the COI entity.

Phase II implementation - a four-year award of up to \$2.5 million, which is awarded in phases based on meeting business plan milestones

Advanced Medical Technologies – this COI is now formally known as *ibiliti* – [www.ibiliti.com](http://www.ibiliti.com)

*Ibiliti* successes in FY2011:

- Completed foundational branding and marketing for the COI and the state's medtech sector. This included the launch of a new web and medtech information portal.
- Hosted two investor showcases, a business development showcase and a retreat for regional and county economic developers interested in developing a compelling medtech message. Combined, these three showcases featured 20 companies, four of which eventually placed investments. Attendees at the events represented 14 venture capital firms, three angel investment groups, and nine large medtech companies.
- Pursued a federal grant opportunity for a program to connect for small medtech companies to grant-writing expertise. While not successful, *ibiliti* was a finalist for this grant and will focus on getting this program funded in the upcoming year.
- Successfully planned, coordinated and hosted the MedTech10 conference, the third annual event, in Durham.
- Coordinated a job fair to assist BD in finding qualified candidates to fill new medtech positions in N.C. From the 71 CVs received, seven interviews yielded four hires.
- Engaged the first two large sponsors: Mission Healthcare (\$75K) and Phillips Plastic (\$50K)
- Published the first *ibiliti* annual report "North Carolina – the State of Medtech"

Nanobiotechnology – this COI goes by the acronym *COIN* – [www.nanobiotech.org](http://www.nanobiotech.org)

COIN went through a transition in leadership during FY2011. After a wide search, the COIN board hired a nationally recognized candidate to lead this organization through its growth phase in the coming years. Throughout this transition, COIN continued its progress:

- Continued its well-attended Executive Nanobio Roundtable events. Each fully sponsored event is co-hosted by regional partners across North Carolina. These events have engaged more than 200 companies and more than 500 attendees from eight different states.
- Recruited the international Commercialization of Micro-nano Systems (COMS) conference to Greensboro for its annual meeting in August 2011. The Joint School of Nanoscience and Nanoengineering is a co-sponsor of the event. COIN is playing a critical role in organizing and coordinating this conference and raised more than \$150,000 in sponsorships for this event.
- Created collaborative relationship with the Board of Science and Technology and worked as an active partner in the annual NC Nanotechnology

Commercialization Conference. COIN brought in significant new sponsors and hosted its own nanobiotech commercialization workshop and track during the conference.

#### Drug Discovery – [www.ddcoi.org](http://www.ddcoi.org)

The DDCOI completed several major activities in FY2011.

- Following conversations with the National Institutes for Health's Therapeutics for Rare and Neglected Disease (TRND) unit, the DDCOI was asked to submit a Statement of Work proposal for a subcontract for program management/oversight capability for the TRND projects.
- Continued discussions in regard to working with UNC-Chapel Hill, Duke, Wake Forest University and at least eight different companies.
- Invited to participate in the Kauffman Foundation's Summer Legal Institute, where Paula Ehrlich presented ways to promote cost-reducing innovation in the pre-clinical drug development space using the DDCOI as a model. Several grant partnering opportunities have arisen from this event.
- Began conversations with several disease research foundations including Juvenile Diabetes Research Foundation, Melanoma Research Alliance, Leukemia & Lymphoma Society, and the Cystic Fibrosis Foundation about how the DDCOI model – therapeutic development expertise with lower overhead – can advance therapeutics in specific disease areas.

#### **Agricultural Biotechnology**

With \$74 billion in annual revenues, agriculture is the top sector in North Carolina's economy. By applying the tools of biotechnology to create new crops, find new uses for existing crops and improve tools for agriculture, North Carolina stands to post significant economic gain.

Following on the 30 in 10 (\$30 billion increased agricultural income per year within 10 years) visioning document, the Center's AgBiotech Group launched a number of efforts this fiscal year:

- Created and produced a series of Grower/Farmer Opportunities Conferences in two locations. A total of 152 people attended and more than 90 percent recommended the program. More are planned across the state in 2011/12.
- Created, produced and sold out the first N.C. Agricultural Biotechnology Symposium with statewide and national speakers and 140 attendees. (May 20)
- With Nagoya University, hosted the first Agricultural Biotechnology Industry Roundtable with 130 attendees.
- Developed and moderated a BIO International Convention Panel Session in Washington, D.C. titled: *Beyond Row Crops: What's Next for AgBiotech*
- With five other companies, participated in Agricultural Biotechnology Business Roundtable with *Business North Carolina* magazine; published March 2011.
- Created a portfolio of print and online materials.

- Facilitated creation and development of a Greenhouse Technology Accelerator with Alexandria Real Estate; an estimated \$14 million investment in RTP.

The group also filled in its leadership committees, appointing 24 leaders to the North Carolina Agricultural Biotechnology Council. Several workgroups will support the council, and the Crops Workgroup is up and running. State funding was supplemented by additional grants to achieve these outcomes.

### **North Carolina's Strengths are Statewide**

The preceding programs are designed to grow biotechnology companies in North Carolina from North Carolina research. The Biotech Center also works with statewide partners to bring biotechnology companies to the state, to expand existing capabilities and to capitalize on regional assets. With low business costs and specialized strengths in vaccine and pharmaceutical production, cancer research and medical research, North Carolina has a strong value proposition for companies looking to locate new facilities.

Some of the bioscience company locations and expansion last year include:

- West Pharmaceuticals, \$29M, Kinston
- Biogen Idec, 50 jobs, RTP
- United Therapeutics, 250 jobs, RTP
- Merck, 150 jobs, Durham
- Novo Nordisk, 85 jobs, Clayton
- Nypro, 156 jobs, Asheville
- Medicargo, 85 jobs, RTP
- BD Biosciences, 187 jobs, Four Oaks
- Talecris/Grifols, 259 jobs, Clayton
- Intrexon, 20 jobs, RTP
- Pioneer Hi-Bred/DuPont, 10 jobs, \$2.3M, Kinston
- Syngenta, 15 jobs, \$71M investment, RTP

In addition, the Center's recruitment team is working closely with Commerce on 17 engagements with companies that have the potential to create 1815 jobs and invest \$1.34 billion in North Carolina.

The regional offices continued to coordinate a number of biotechnology and educational events for their constituents, serving as liaisons to Biotechnology Center programs. Roles and responsibilities for statewide offices were realigned and expanded this year. Because of the independent requirements of their positions, regional directors are now executive regional directors. Regional administrative assistants are now regional coordinators. The Western Office welcomed Jon Lawrie as executive director, after the position was vacant for 18 months.

This past fiscal year the Executive Directors focused on specific activities within five primary goals: Innovation and Emerging Applications; Capital Formation; Workforce

Development; Statewide Development; and International Competitiveness. All Executive Directors made measureable direct contributions to these primary goals. Highlights include:

- An award of \$300,000 by Golden Leaf to support a STEM/Motorsports initiative in the Greater Charlotte region
- Hosting the North Carolina Entrepreneurial Summit in Wilmington. This statewide summit is designed to foster entrepreneurship and support locally grown businesses.
- The reemergence of the annual Science in the Mountains event, which drew more than 140 attendees and included 15 presentations, three keynote speakers and 27 poster presentations with representation from academic institutions throughout Western North Carolina.
- Nearly \$2.7 million in grants and loans to the regions outside of the Research Triangle Region. *(Note: this duplicates awards from other areas of this report.)*
  - Southeastern Region - \$195,858
  - Eastern Region - \$578,360
  - Charlotte Region - \$682,886
  - Triad Region - \$975,882
  - Western Region - \$311,771

## **Job Training and Workforce Development**

Companies small and large need a skilled workforce to fill the jobs they create. The Biotech Center's Education and Training Program works with the NCBioImpact partnership – including the UNC System, NC Community College System and industry – to create the best biomanufacturing workforce in the world.

This effort has become a competitive advantage for the state, and is making good on biotech's promise to create jobs for North Carolinians. Recent survey data indicates that pharmaceutical and bioprocess manufacturing companies recruit 90 percent of their new hires from North Carolina.

The Center's Education and Training program works more broadly in science education by awarding grants to schools to teach the science of biotechnology, raise student interest in science careers, and prepare the state's biotechnology workforce. One award last year enabled the NC Association for Biomedical Research to produce "Heal, Feed, Sustain: How Biotechnology Can Help Save the World," a biotech careers video targeting middle and high school students. This year, 12 Education Enhancement Grants totaling \$485,814 will benefit students at all levels across the state from Mars Hill to Greenville.

In the summer of 2011, the Education and Training Program completed its 25<sup>th</sup> consecutive year of Summer Biotechnology Workshops for Educators with 138 teachers enrolled. To date more than 1,800 teachers from 98 North Carolina counties have received professional development in science teaching in these workshops. Workshop



graduates receive annual gift certificates for laboratory supplies and may also borrow laboratory equipment free of charge.

An estimated 40,000 North Carolina K-12 students this year benefited from these programs. Since inception, that number is in the hundreds of thousands.

Finally, the program links undergraduates to careers in science through its Undergraduate Biotechnology Research Fellowship. Science and engineering majors conduct laboratory research and other activities that prepare them for scientific careers. This year's awards funded 12 students at eight institutions, for a total of \$60,500. One of these was an Agricultural Biotechnology Fellowship supported by Cotton Incorporated.

### **Biotech Community**

Each piece of the biotech puzzle brings its own strength to the technology development pipeline. Beyond funding and sector development, the Biotech Center offers targeted opportunities to build relationships within and across areas of scientific expertise, roles in business, and positions in public policy. A few examples from this year are:

- 11 Intellectual Exchange Groups, designed to let academic and industrial scientists share ideas. These 70 events attracted approximately 3,448 participants.
- 11 total Regional Exchange Groups, which offer a number of business or scientific networking opportunities in specific regions. The groups now include the newly formed Western Region's US Botanical Safety Laboratory Consortium.
- A variety of business networking and education opportunities, including the Biotech Forum series, the Life Science Business Development Professionals meetings, Biotech 2011 and other regular events.

The Biotech Center also helps North Carolina's life-science companies move toward commercialization, increase investment and partnering activity and develop talent. Specific activities this year include:

- A Biotechnology Center-led event developed to stimulate strategic partnerships for North Carolina biotech firms attracted more than 50 participating companies, including Merck, Pfizer, Eli Lilly, GlaxoSmithKline, AstraZeneca, and Biogen Idec.
- In response to the growing pharmaceutical company interest in university collaborations, the Center held its first pharma-university partnering event and plans to run at least four more such events in fiscal 2012.
- The Industrial Fellowship Program, which provides transitional training for Ph.D. scientists moving from academia into industry careers, awarded five fellowships.
- The North Carolina pavilion at the Biotechnology Industry Organization's annual meeting. Coordinated by the Biotech Center, the pavilion included more than 90 sponsors from across the state.

Information is a key to this community, and the Biotechnology Center's Library and Information Services group provide information on all facets of commercial biotechnology to staff and external customers. The library filled 145 research requests this year, including providing research for economic development and marketing projects. Metrics for the Biotech Center's funding programs and the state's bioscience industry come from the library each year, and the research staff continues several programs to link small companies with high-cost market research at reduced prices.

The library added a position to manage Biotech Center requests for external funding, which has made a positive impact in managing hundreds of thousands of dollars from private industry and federal and private grants. The position includes specific activities to link the state's bioscience community with other opportunities for funding.

North Carolina's biotechnology community includes 59,000 workers who work to heal, fuel and feed the world. To better reflect the vibrancy of the state's industry and make the Biotechnology Center more approachable, the corporate communications group redesigned the Center's main website, which launched in conjunction with the opening of the Hunt Leadership Annex in September.

### **Looking to the Future**

In the coming year, the Biotechnology Center will maintain and expand the programs mentioned here, but will also be creating new programs in anticipation of new needs. For more information, please visit our Web site, [www.ncbiotech.org](http://www.ncbiotech.org).

**North Carolina Biotechnology Center  
Statement of Expenses Fund Sources  
Fiscal Year Ending June 30, 2011**

	<b>Total Fund Sources FY 2011</b>
Unrestricted Revenues:	
State of North Carolina	\$ 18,819,334
Investment returns	2,184,925 (1)
Interest income	627,973
Other contributions	547,191
Hamner Conference Center	197,129
<b>Total Unrestricted Revenues</b>	<b>22,376,552</b>
Restricted Revenues:	
State of North Carolina	400,000
Federal Government	130,000
Contributions	682,836
<b>Total Restricted Revenues</b>	<b>1,212,836</b>
<b>Total Revenues</b>	<b>\$ 23,589,388</b>

	<b>Total Expenses FY 2011</b>
<b><u>GRANTS &amp; FUNDING</u></b>	
Loan Program:	
Small Business Research Loans	974,914
Strategic Growth Loans	250,000
Company Inception Loans	90,000
SBIR Bridge Loans	75,000
	<b>1,389,914</b>
Grant Program:	
Centers of Innovation	1,970,000
Institutional Development	1,378,772
Multi-Disciplinary Research	945,881
Biotechnology Research	595,325
Educational Enhancement	485,814
Collaborative Funding	400,000
Technology Enhancement	249,842
Industrial Fellowship	340,680
Regional Development	100,000
Biotechnology Event	77,696
Undergraduate Research Fellow	71,000
Biotechnology Meeting	44,255
Grant Training	8,000
	<b>6,667,265</b>
Other Program Sponsorships:	
Bent Creek	250,000
Summer workshops	154,890
Other	158,900
	<b>563,790</b>
<b>Total Grants and Funding</b>	<b>\$ 8,620,969</b>

<b><u>PERSONNEL &amp; OPERATING EXPENSES</u></b>	
Statewide Operations	\$ 1,365,877
Industrial & AgBiotech Development	1,208,840
Science & Business Development	1,109,716
Science & Technology Development	644,486
Education & Training	592,922
Centers of Innovation	255,422
Library & Information Technology	997,098
Corporate Communications	844,892
Hamner Conference Center	635,392
General & Administrative	3,292,543
<b>Total Personnel &amp; Operating</b>	<b>\$ 10,947,188</b>
<b><u>BUILDING EXPANSION EXPENSES</u></b>	<b>\$ 3,087,244 (2)</b>
<b>TOTAL CENTER EXPENSES</b>	<b>\$ 22,655,401</b>

Notes: This statement is prepared on the accrual basis of accounting.

(1) Investment returns include a "one-time" \$2M capital return. This was not gain or profit.

(2) The building expansion expenses were capitalized.