



**NORTH CAROLINA BIOTECHNOLOGY CENTER**

# 2007 Annual Report



# President's Message

In the 1970s, state leaders realized biotechnology could bring substantial economic benefit to North Carolina.

Looking to capitalize on this new tool, these leaders established the North Carolina Biotechnology Center in October 1984, charging the fledgling organization to create new high-paying jobs by supporting biotechnology research, business, education and workforce training.



E. NORRIS TOLSON

The Biotechnology Center has made good on its promise. To date, 23 years of strategic investments by the Biotechnology Center have led North Carolina to develop and grow a robust bioscience community, third largest in the nation, with nearly 450 companies employing more than 54,000 people. The state is more than a third of the way to having 125,000 industry jobs by 2023 as mandated by a strategic plan commissioned by Gov. Mike Easley in 2004. This year, North Carolina received a significant return on its investment as UNC-Chapel Hill faculty recruit Oliver Smithies brought home the Nobel Prize.

Today North Carolina is poised to achieve even more, but moving the Biotechnology Center and the state through the next two decades of biotechnology expansion will require imaginative strategies, strong leadership and additional state investment. North Carolina is fortunate because the Biotechnology Center is well-positioned to catalyze these elements with its partners in industry, academia and government.

The Biotechnology Center is working with those partners to seize opportunities in workforce training, bio- and agro-defense, and the application of biotechnology in emerging industries across the state.

## Workforce Training

In September 2007, the Biomanufacturing and Pharmaceutical Training Consortium—a consortium composed of the Biotechnology Center, NCBIO, the University of North Carolina System, the North Carolina Community College System and Golden LEAF—opened

the 82,000-square-foot Golden LEAF Biomanufacturing Training and Education Center (BTEC) on North Carolina State University's Centennial Campus.

This \$45 million facility can train 2,000 university and community college students annually for high-paying jobs. The BTEC building is the only facility of its kind and scale in the United States and is the largest in the world. In addition, North Carolina Central University is building a

52,000-square-foot training and research center for the Biomanufacturing Research Institute & Technology Enterprise (BRITE) program. BRITE will include a research laboratory and classroom facility that house research, teaching and training activities in biotechnology and biomanufacturing.

The third element of the comprehensive Biomanufacturing and Pharmaceutical Training Consortium training initiative is the North Carolina Community College System's BioNetwork program, which includes six specialized centers throughout the state. One program is the Capstone Center at BTEC, which simulates a biopharmaceutical manufacturing environment in order to train students in current good manufacturing practices (cGMP).

## Federal Defense Facility

In 2007, North Carolina became one of five finalists for a new federal animal and public health research and diagnostic laboratory, the National Bio- and Agro-Defense Facility (NBAF), intended to protect public health and our food supply from animal diseases.

Once operational, NBAF would employ between 250 and 500 scientists, technicians and administrative staff in Granville County and contribute as much as \$1.65 billion to North Carolina's economy during its first 20 years. The Biotechnology Center and our working partners in government, academia and industry support North Carolina's bid to capture this national facility. More importantly, we are prepared to ensure that it thrives in North Carolina.

## Expanding Biotechnology Statewide

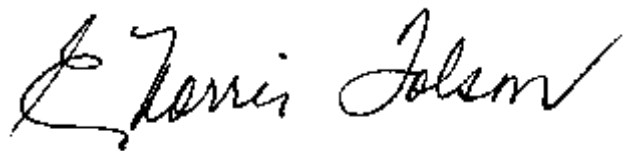
The General Assembly in 2007 affirmed the importance of biotechnology development throughout the state by making these new investments:

- \$5 million for the Biofuels Center of North Carolina on the new North Carolina Biofuels Campus in Oxford. This facility will help the state create a new industry based on cellulosic ethanol, biodiesel and other liquid fuels—fuels that can be produced in all parts of the state using wood waste and dedicated energy crops grown by North Carolina farmers.
- \$3 million for the Biotechnology Center’s new Centers of Innovation program, designed to foster collaboration and accelerate commercialization of sector-targeted biotechnology-related technologies across the state. The program draws upon regional leadership to establish partnerships among research and educational institutions, industry, government and others, resulting in research and technology transfer opportunities in emerging areas such as marine biotechnology, nanotechnology and advanced medical technologies. The Biotechnology Center awarded three planning grants in 2007 to explore setup of these centers.

- \$27 million over the 2007-2009 fiscal years to support the North Carolina Research Campus at Kannapolis.
- \$4.83 million in additional funding for the state’s One North Carolina Small Business Fund. The fund provides matching state grants of up to \$100,000 to companies that win federal Small Business Innovation Research or Small Business Technology Transfer awards.

These programs and investments will continue to move biotechnology forward in North Carolina, leading to high-paying jobs and a better quality of life for people in all 100 counties.

We have much to do in coming years to make this happen. The continued support of the General Assembly and our many partners will be essential to seizing these opportunities. Working together, we will achieve sustained greatness and prosperity for all of North Carolina.



*E. Norris Tolson*  
President and CEO

# 2007 Annual Report: Accomplishments

## Science and Technology Development

The Science and Technology Development Program supports biotechnology research at North Carolina's universities and institutions through grant programs and intellectual exchange activities. In the 2007 the Program:

- Awarded 11 Biotechnology Research Grants totaling \$821,766 to help investigators from seven North Carolina universities advance new projects. These awards are listed on page 12.
- Awarded eight Collaborative Funding Grants worth \$675,000 to support research collaborations between North Carolina universities and bioscience companies. These awards are listed on page 13.
- Awarded 14 Institutional Development Grants totaling \$1,935,318 to help four North Carolina universities and medical centers acquire multi-user research facilities and equipment. These awards are listed on page 14.
- Awarded three Multi-Disciplinary Research Grants totaling \$749,988 to support research collaborations among North Carolina universities. These awards are listed on page 14.
- Awarded three Faculty Recruitment Grants totaling \$450,000 to help North Carolina universities recruit three outstanding faculty members. These awards are listed on page 14.
- Awarded five Regional Development Grants totaling \$278,660 to enhance biotechnology development across the state. These awards are listed on page 15.
- Introduced new grants for biotechnology research and Centers of Innovation to help foster biotechnology-based economic development in targeted industries across the state.



## 2007 Annual Report Timeline

### August 2006

Novartis Vaccines and Diagnostics announces plans to build a flu vaccine manufacturing plant in Holly Springs.

The company will invest a minimum of \$267.5 million over the next five years and create 350 new jobs.

Cempra Pharmaceuticals of Morrisville closes a \$14 million financing round to expand a portfolio of products targeting drug-resistant bacteria in hospitals.

LipoScience of Raleigh closes a \$13 million Series F financing.

### September 2006

Metrics of Greenville announces it will add 47,000 square feet to its pharmaceutical testing and manufacturing plant. The company plans to create 77 new jobs and invest \$175 million over three years.

### October 2006

The Biotechnology Center awards its first Strategic Growth Loan to Advanced Liquid Logic of Research Triangle Park.

Twenty-five leaders in business, academia and science from throughout Southeastern North Carolina meet for the first time as an advisory committee to help guide the region's biotechnology development. In Eastern North Carolina, twenty-three leaders gather as a committee to help steer the region's growth in biotechnology.

### UNC Researcher Wins 2007 Nobel Prize in Physiology or Medicine



OLIVER SMITHIES

Dr. Oliver Smithies, recruited to UNC-Chapel Hill in 1987 with a grant from the North Carolina Biotechnology Center, won the Nobel Prize in Physiology or Medicine in October. His pioneering research in gene targeting and knockout mice is helping scientists around the world understand the causes of, and seek cures for, human genetic diseases.

Smithies is one of 51 world-class scientists recruited to North Carolina universities with Biotechnology Center grants. With nearly \$10 million in state investments these researchers have brought in about \$363 million in funding from other sources.

"North Carolina can be extremely proud to have seen far enough ahead to set up Research Triangle Park and its associated institutions such as the Biotechnology Center. It's the crown jewel," he said.

## November 2006

Quintiles Transnational plans to expand in Durham County, creating 1,000 jobs and investing \$10.1 million over six years.



New Jersey-based Eisai announces a \$90 million investment to build a 65,000-square-foot facility in Research Triangle Park.

Pfizer Animal Health acquires Durham-based Embrex, a poultry biotechnology company, for about \$155 million.

## December 2006

Aldagen of Durham receives \$173 million in debt and equity financing.

## January 2007

Discover magazine honors two Wake Forest University School of Medicine researchers for the "Top Breakthrough of the Year." Recognized are Dr. Anthony Atala's work in advancing tissue engineering and Dr. Lawrence Rudel's research on trans fatty acids in food.

- Supported eight intellectual exchange organizations working in key areas of biotechnology:
  - the North Carolina Plant Molecular Biology Consortium;
  - the North Carolina RNA Society;
  - the Triangle Virology Association;
  - the Smaller Eukaryotes Group;
  - the Triangle Array Users Group;
  - the Bioprocessing and Process Development Group;
  - the Triangle Immunology Interest Group; and
  - the new Atlantic Coast Chromatin Conference.
- Hosted Biomass Council meetings.
- Presented the annual Plant Molecular Biology Consortium retreat in Wilmington.
- Welcomed more than 900 people to one of two National Institutes of Health regional seminars on grantsmanship.
- Published *Nanobiotechnology in North Carolina*, a report detailing North Carolina's work and opportunities in the industry sector.

## Business and Technology Development

The Business and Technology Development Program supports North Carolina bioscience companies through funding, technology assessment, strategic partnerships, business plans, networking, venture capital, site locations and professional referrals. In 2007 the Program:

- Provided loans totaling \$215,500 to help nine young bioscience companies with their business development activities. These loans, awarded through the Business Development Loan Program, are listed on page 10.
- Made loans totaling \$442,712 to three young bioscience companies for product research and development. These funds, provided through the Small Business Research Loan Program, are listed on page 15.



*Dr. Anthony Atala (right), director of the Institute for Regenerative Medicine at the Wake Forest University School of Medicine in Winston-Salem, and his research team discovered the amniotic fluid surrounding developing embryos (left) produces stem cells capable of creating blood vessels and muscle, bone, nerve and liver cells.*





*President Bush talks with Novozymes employee David Pace during his Feb. 22 tour of the company's enzyme plant in Franklinton. Bush visited the U.S. headquarters of the Danish company to promote the development of cellulosic ethanol from plant biomass as a source of fuel.*

- Provided a \$75,000 loan to help a company carry out its research between funding phases of the federal Small Business Innovation Research program. This SBIR Bridge Loan is listed on page 15.
- Provided a \$160,000 loan to help a company attract venture capital and angel network investments. This Strategic Growth Loan is listed on page 15.
- Established the Technology Enhancement and Acceleration Model (TEAM) Loan Program, which provides \$50,000 to support business inception projects for biotechnology companies spun out from North Carolina universities, colleges and research institutions. Two loans totaling \$100,000 were awarded and are listed on page 15.
- Launched the Business Acceleration and Technology Out-licensing Network (BATON) Program. BATON leverages Biotechnology Center TEAM loans by bringing together in-kind or contributed services from various service providers to support the start of promising new companies.
- Co-sponsored Biotech 2007 with the Council for Entrepreneurial Development (CED) and the North Carolina Biosciences Organization (NCBIO). This annual meeting of the state's biotechnology community attracted more than 800 people from within and outside the state for two days of networking, exhibits and presentations.
- Supported the Biotechnology Forum with CED. The Forum is a monthly gathering of biotechnology executives who network and hear panel discussions from industry leaders on business and technology topics.
- Sponsored the Life Science Business Development Professionals of North Carolina, a networking group that meets monthly.
- Established a Web site [[www.ncbiotech.org/wetlabs](http://www.ncbiotech.org/wetlabs)] offering a comprehensive listing of wet laboratories, life science incubators and process manufacturing facilities available for lease or sale throughout North Carolina.

Wake Forest University researchers use amniotic fluid as a new source of stem cells, which become muscle, bone and liver cells.

## February 2007

President Bush tours Novozymes' plant in Franklinton to promote ethanol production and to reduce the United States' dependence on foreign oil.

The *North Carolina Career Network* magazine names Cheryl McMurry, the Biotechnology Center's Western Office director, as one of 10 North Carolina women with extraordinary careers.



**CHERYL S. MCMURRY**

Chimerix of Durham announces a \$23.1 million private stock placement.

Icagen of Durham raises \$22 million in a securities sale to institutional and other accredited investors.

AlphaVax of Research Triangle Park completes a \$12.7 million Series E preferred stock offering.

## March 2007

DuPont, a global science company with manufacturing facilities in Kinston, receives the Biotechnology Center's Industrial Leadership Award at the 2007 Bio World Congress in Orlando, Fla.



*Jim Greenwood, president and CEO of the Biotechnology Industry Organization (BIO), speaks with Dr. Rosemary Wander of UNC-Greensboro at Triad BioNight 2007.*

Jim Greenwood, president and CEO of the Biotechnology Industry Organization (BIO) encourages 260 attendees at Triad BioNight in the Piedmont Triad Research Park. "In order for the Piedmont Triad to succeed, you don't have to steal (biotechnology) from Research Triangle Park and you don't have to steal it from Boston," he said. "You grow it right here."

Provagen, maker of a protein used in medical research, becomes the first spin-out company based on North Carolina A&T State University research. The company is also the first to graduate from BATON, a Biotechnology Center program aimed at increasing the number of new companies coming out of the state's universities.

Chelsea Therapeutics International of Charlotte raises \$12.5 million through definitive securities purchase agreements.

Regado Biosciences of Durham completes a \$23 million Series C financing.

## Education and Training

The Education and Training Program promotes workforce preparedness and public understanding of biotechnology through instructor training, teaching materials, grants programs, needs assessments and other activities at all educational levels throughout North Carolina. In 2007 the Program:

- Awarded four grants totaling \$18,773.75 to three community colleges for BioWork, an entry-level course developed by the Biotechnology Center and taught at several community colleges to

prepare students for biomanufacturing jobs. These BioWork Course Sponsorship Awards are listed on pages 12-13.

- Awarded nine grants totaling \$377,760 to strengthen biotechnology education and training programs. These awards, made through the Education Enhancement Grants Program, are listed on page 13.
- Awarded eight grants totaling \$40,051 to develop and incorporate biotechnology into curricular materials in grades K-12. These awards, made through the Biotechnology Education Mini-Grants Program, are listed on pages 13-14.
- Sponsored six summer workshops throughout the state that prepared 108 middle school, high school and college instructors to teach about the science, applications and issues of biotechnology. These workshops and another held in October 2006 prepared 34 teachers to implement "Introduction to Biotechnology," a new course available for use in Career Technical Education.
- Hosted a career fair with the North Carolina Biomanufacturing and Pharmaceutical Training Consortium for students seeking internships. Sixteen companies, 55 industry representatives and 159 students participated.



*In 20 years, the Summer Workshops for Teachers have introduced a basic biotechnology curriculum to more than 1,250 teachers.*

## Library and Information Services

The full-service Library and Information Services unit provides Biotechnology Center staff and the public with information on all facets of commercial biotechnology. Library staff prepared comprehensive background reports on topics of major interest such as biofuels, industrial biotechnology and natural products.

In 2007, staff answered 253 reference/research questions for Biotechnology Center staff and external clients. More than 275 people visited the library to conduct their own research. In addition, many bioscience-related videotapes were loaned to North Carolina public schools, and various books, periodicals and articles were loaned to other libraries. The staff also supported the contact management database, InterAction.

## Hamner Conference Center

The 19,000-square-foot Hamner Conference Center, named in honor of former Biotechnology Center president and CEO Charles E. Hamner, is a bustling hub for meetings on the science, business and issues of biotechnology. It also serves clients from outside the biotechnology community.

In 2007 the facility provided space, catered meals, and audiovisual support for 29,978 guests at 1,409 meetings. The Hamner Center also improved its facilities by completing an audiovisual upgrade to the Queta Bond Auditorium and the multipurpose Congressional Room.

## Corporate Communications

The Corporate Communications staff informs the public about biotechnology, the Biotechnology Center's role in developing it in North Carolina, and the advantages of doing biotechnology business in the state. These messages are communicated through a wide variety of channels including publications, media relations, a Web site, videos, advertisements, trade shows and visitor briefings. In 2007 the staff:

- Expanded the Biotechnology Center's Web site, [www.ncbiotech.org](http://www.ncbiotech.org), to be a gateway to all biotechnology-related news, events and resources in North Carolina.
- Created an industrial recruitment tool, the quarterly electronic newsletter *Biotechnology Works in North Carolina*, documenting the state's biotechnology growth and competitive advantages to executives worldwide.
- Converted its bimonthly printed newsletter *BT Catalyst* into a weekly e-mail digest to save printing and postage costs and to deliver more news faster and with greater interactivity.
- Promoted North Carolina's competitive advantages at the BIO 2007 industry conference in Boston.
- Provided interviews, photos and referrals in response to 108 news media inquiries.

### April 2007

The Biotechnology Center submits to the General Assembly a strategic plan for biofuels development in North Carolina.

### North Carolina's Strategic Plan for Biofuels Leadership

The document culminated a seven-month process involving more than 70 leaders from

across the state representing industry, agriculture, academia and government.

Inspire Pharmaceuticals of Durham and Targacept of Winston-Salem earn selections onto *The Scientist's* "Fifth Annual Best Places to Work in Industry" survey.

### May 2007

North Carolina has the nation's third largest biotechnology industry for the fourth consecutive year, according to Ernst & Young's latest industry report.

TransTech Pharma of High Point receives the North Carolina Biotechnology Economic Development Award during the BIO'07 Conference and Exhibition in Boston.

Biolex Therapeutics of Pittsboro closes on a \$30 million Series C financing round.

### June 2007

The Biotechnology Center's board of directors selects Norris Tolson as president and CEO.

The CIIT Centers for Health Research in Research Triangle Park changes its name to The Hamner Institutes for Health Sciences in honor of Charles Hamner, the former Biotechnology Center president and CEO.



CHARLES E. HAMNER

The Biotechnology Center begins its 20<sup>th</sup> year of offering teacher workshops across the state.

### July 2007

The United States Department of Homeland Security names North Carolina as one of five finalists for the \$450 million federal National Bio- and Agro-Defense Facility. North Carolina's entry is at Umstead Research Farm near Butner in Granville County.



GlaxoSmithKline of Research Triangle Park inks a drug discovery and development deal with Targacept of Winston-Salem worth up to \$1.5 billion if certain milestones are achieved.



The new 27-member Advisory Committee for Biotechnology in Greater Charlotte meets for the first time.

Inspire Pharmaceuticals of Durham receives a \$75 million investment from Warburg Pincus.



- Worked with *The Scientist* to publish an 86-page magazine supplement ([www.the-scientist.com/supplement/2007-4-1](http://www.the-scientist.com/supplement/2007-4-1)) on North Carolina's life science community and assets.
- Sponsored advertisements and advertorials in several business and technology publications and Web sites to promote North Carolina as an ideal place for biotechnology research, business and education.



## Development of Biotechnology Statewide

The Biotechnology Center has strengthened biotechnology development throughout North Carolina by opening five regional offices across the state.

These offices, each consisting of a director and an assistant, help their regions identify needs, goals and core competencies; draw on the programs and activities of the Biotechnology Center; and coordinate advisory committees to guide biotechnology development.

With the help of its five offices, the Biotechnology Center continued to offer Regional Development Grants to support strategic planning, marketing, infrastructure building and other activities fostering regional biotechnology collaborations. In 2007 the Biotechnology Center awarded five grants totaling \$278,660. Those grants are listed on page 15.

Here are other selected highlights of biotechnology development in each region.

### Greater Charlotte Office

- Partnered with regional organizations to host several events including the sixth annual Charlotte Biotechnology Conference, Nanotechnology in Biology and Medicine and You Are What You Eat—Nutrigenomics and Metabolomics.
- Worked with regional leaders to form the Inception Micro Angel Fund-Kannapolis.
- Convened the first meeting of the Advisory Committee for Biotechnology in Greater Charlotte.

### Eastern Office

- Organized two Regional Exchange Group meetings with East Carolina University's Division of Research and Graduate Studies to develop more interaction between university and corporate scientists and to increase clinical trial activity in Eastern North Carolina.

- Worked with the Biotechnology Center's Southeastern Office to promote collaboration in marine biotechnology.
- Supported two regional initiatives that led to the creation of the BioEast Alliance to expand bioprocessing opportunities in Eastern North Carolina.

### Piedmont Triad Office

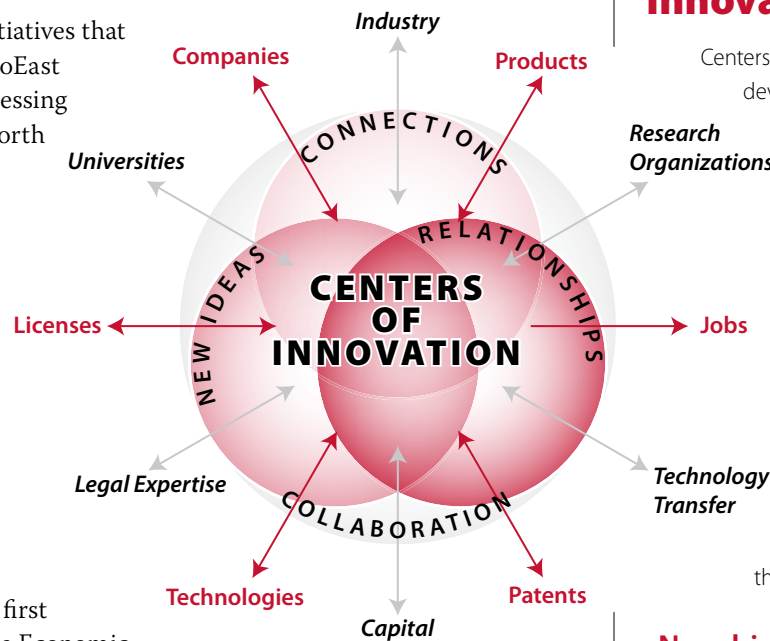
- Organized and produced *Triad BioNight 2007*, an event to celebrate biotechnology development in the region with a guest list of 260 and 37 sponsors.
- Partnered with the North Carolina Department of Commerce to organize the first Piedmont Triad Life Science Economic Development Summit in Greensboro.
- Helped develop the first Piedmont Triad regional biotechnology Web site [[www.triadbiotech.com](http://www.triadbiotech.com)].

### Southeastern Office

- Convened the first Marine Biotechnology Week in Wilmington. The event included a series of programs for everyone from local residents to scientific researchers.
- Co-organized the Bluefields event series with the Biotechnology Center's Eastern Office to foster research and commercialization of marine biotechnology and aquaculture.
- Worked with the Eastern Office to promote collaboration in marine biotechnology.
- Held the first joint meetings of the Advisory Committees for Biotechnology in Eastern and Southeastern North Carolina.

### Western Office

- Established the Bent Creek Institute, a research center of the University of North Carolina System dedicated to natural biotechnology and integrative medicine research and economic development.
- Organized and co-hosted *Science in the Mountains 2007*, the second annual symposium for life science researchers at universities in Western North Carolina.
- Signed a Memorandum of Understanding with the North Carolina Arboretum establishing a close working partnership supporting natural biotechnology research, education and economic development.



## Centers of Innovation

Centers of Innovation awards identify, develop and commercialize research within a specific biotechnology-dependent industry. These awards are intended to catalyze the state's efforts in the research and commercialization of strategically selected sectors. With funding from the General Assembly, the program awarded three planning grants of \$100,000 each in the last half of 2007.

### Nanobiotechnology

Tiny products 1/80,000th the width of a human hair could be used to improve human health, consumer products and the environment. The Piedmont Triad Regional Partnership is leading this consortium, which includes North Carolina A&T State University, UNC-Greensboro and Wake Forest University.

### Marine Biotechnology

North Carolina's coast is home to many marine resources that may restore natural resources and create new medicines. North Carolina's Eastern Region is leading a partnership of nearly a dozen academic and private groups to tap these resources.

### Advanced Medical Technologies

The North Carolina Biosciences Organization is working with industry and academic partners to develop North Carolina's nascent but strong medical device industry. This award will support the convergence of the classical device industry with complementary technologies such as biotechnology, information technology, regenerative medicine and nanotechnology.

# Grants and Loans Awarded in 2007

The Biotechnology Center awarded 122 grants and loans totaling \$6,437,160.65 in 2007. These awards were made through 16 programs designed to stimulate biotechnology research, business, education, workforce training and regional economic development.

## Business Development Loans

The Biotechnology Center awarded nine loans totaling \$215,500.

### ADDRENEX PHARMACEUTICALS

- Dr. Moise A. Khayrallah, \$25,000, "Commercial Assessment, Intellectual Property and Clinical/Regulatory Preparation for Addrenex Pharmaceuticals."

### AGARIGEN

- Brett K.E. Lund, \$25,000, "Mushroom Made Pharmaceuticals."

### AXITARE

- James G. Passe, \$25,000, "Developing Methods to Enhance Taste and Smell."

### BIOLUME

- Terry E. Willard, \$19,500, "BioLume BD Needs."

### BIOMEDOMICS

- Dr. Frank Wang, \$25,000, "BioMedomics Business Development."

### COGNOSCI

- Dr. Dale J. Christensen, \$25,000, "Cognosci Business Plan."

### FLUTRENDS INTERNATIONAL

- Gregory M. Poole, \$21,000, "2007-BDA-Influenza Prevention."

### GLOBAL VACCINES

- Dr. Clayton W. Beard, \$25,000, "Global Vaccines Business Development."

### TERADISC

- Dr. Edwin R. Addison, \$25,000, "Early Stage Business Development."

## Biotechnology Event Sponsorship

The Biotechnology Center awarded 36 grants totaling \$66,775.

### APPALACHIAN STATE UNIVERSITY

- Dr. Robert L. Johnson, \$2,850, "Science in the Mountains 2007."

### BONESTEEL FILMS

- Paul Bonesteel, \$1,900, "Partnership for the Future: Educational Media Supporting Biotechnology in WNC Public Schools."

### EAST CAROLINA UNIVERSITY

- Marty Hackney, \$1,800, "ECU's Entrepreneurial Initiative: Innov8or Series."

### FOUNDATION FIGHTING BLINDNESS

- Michelle L. Shaljian, \$1,000, "2007 Triangle VISIONWALK."

### LIFE SCIENCES LAW

- Rachel B. Mandell, \$500, "Biotechnology Manufacturing Forum Home Made vs Store Bought: Business and Legal Considerations in Deciding Whether to Manufacture Products Independently or Through a Contract Manufacturer."

### NORTH CAROLINA ACADEMY OF SCIENCE

- Dr. Jean-Luc Scemama, \$1,500, "Annual Meeting of the North Carolina Academy of Science."

### NORTH CAROLINA CENTRAL UNIVERSITY

- Kimberly J. Cogdell, \$2,000, "Bioethics Trial Competition and Community Forum."

### NORTH CAROLINA NATURAL PRODUCTS ASSOCIATION

- Lindsay M. Benedict, \$3,000, "The Third Annual North Carolina Natural Products Conference: Cultivating the New Wellness-Driven Economy in North Carolina."

### NORTH CAROLINA SCIENCE TEACHERS ASSOCIATION

- Nancy J. Bray, \$1,000, "Biotechnology at the Northeast Regional Science Fair."

### NORTH CAROLINA SOLAR CENTER

- Anne Tazewell, \$1,000, "Mobilizing North Carolina: Where Air Quality, Energy and Transportation Meet."

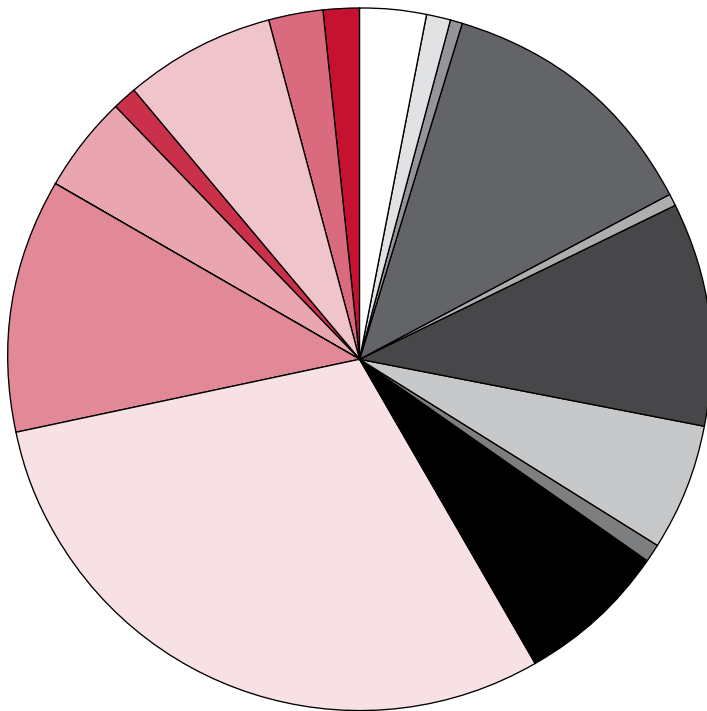
### NORTH CAROLINA STATE UNIVERSITY

- Dr. George T. Barthalmus, \$3,000, "State of North Carolina Undergraduate Research and Creativity Symposium."
- Dr. Richard E. Kouri, \$985, "NC State College of Management BioPharma Forum."
- Adrian O'Neill, \$1,600, "2007 Biomedical Engineering Graduate Student Research Symposium."
- Sam Straight, \$1,000, "NC State University College of Management BioPharma Forum."

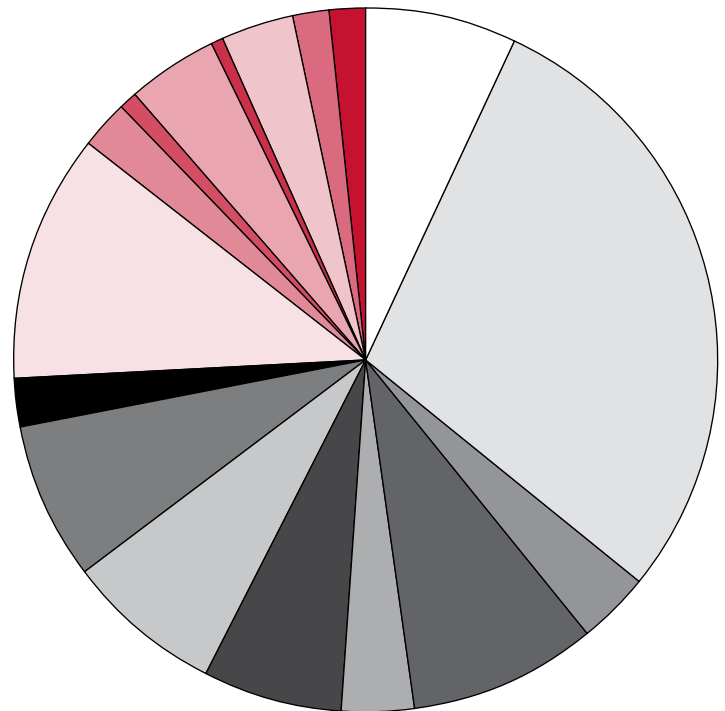
### NORTH CAROLINA TISSUE ENGINEERING & REGENERATIVE MEDICINE GROUP

- Dr. Albert J. Banes, \$1,170, "NCTERM NC Tissue Engineering & Regenerative Medicine Group (formerly NCTEIG) NC Tissue Engineering Interest Group 2006 Annual Meeting."

## Amount of Grants and Loans by Program



## Number of Grants and Loans by Program



- |  |                                   |  |
|--|-----------------------------------|--|
| Business Development Loan              | Education Enhancement Grant       | Regional Development Grant                         |
| Biotechnology Event Sponsorship        | Education Mini-Grant              | SBIR Bridge Loan                                   |
| Biotechnology Meeting Grant            | Faculty Recruitment Grant         | Small Business Research Loan                       |
| Biotechnology Research Grant           | Institutional Development Grant   | Strategic Growth Loan                              |
| Biowork Course Sponsorship Award       | Multi-Disciplinary Research Grant | Technology Enhancement and Acceleration Model Loan |
| Collaborative Funding Assistance Grant | Presidential Initiative Award     |  |

### SIGMA XI, THE SCIENTIFIC RESEARCH SOCIETY

- Dr. Christopher R. Brodie, \$2,095, “Science and the Media Symposium: The Inaugural Gathering of Sigma Xi Honorary Members.”

### UNIVERSITY OF NORTH CAROLINA AT ASHEVILLE

- Dr. Bert E. Holmes, \$1,500, “Entrepreneurship in Chemical Technology.”

### UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL

- Dr. Frank S. French, \$1,000, “Molecular Regulation in Reproduction.”

- Dr. Rudolph L. Juliano, \$2,500, “Science and Technology Policy Workshop.”
- Dr. Carol Aline Otey, \$1,500, “Into the Gut: Bacteria as Pathogens and Agents of Bioterrorism.”
- Dr. Janelle V. Reynolds-Fleming, \$2,000, “Blue Heron Bowl.”
- Dr. Brian David Strahl, \$2,000, “Chromatin Structure and Function.”
- Dr. Susan W. Sunnarborg, \$2,000, “First Annual Symposium on Cancer Nanotechnology.”

- Dr. Mary H. Sym, \$1,400, “The Ever-Changing Landscape of Genomics” and \$1,000, “Gene Patents: Is USPTO Policy Hurting the Practice of Medicine?”
- Brad S. Wilson, \$1,500, “31st UNC Lineberger Annual Symposium—The Role of Viruses and Inflammation in Cancer Development.”

### UNIVERSITY OF NORTH CAROLINA AT CHARLOTTE

- Olin Broadway, \$3,000, “DNA: The Ultimate Historical Document: A Visit with Spencer Wells.”
- Ruth B. Burnett, \$3,000, “Fifth Annual Charlotte’s Emerging Role in Biotechnology.”

- Dr. Robin N. Coger, \$1,500, “BioImaging Symposium.”
- Dr. Lawrence E. Mays, \$3,000, “The Role of Metabolomics & Nutrigenomics in Creating Healthier Foods and Healthier Lives.”
- Dr. Robert G. Wilhelm, \$3,000, “UNC Charlotte Five Ventures 2007 Entrepreneurial Event.”
- Dr. Rosemarie Tong, \$3,000, “Bioethics in the Age of Biotechnology.”

#### UNIVERSITY OF NORTH CAROLINA AT GREENSBORO

- Dr. Mary Crowe, \$1,000, “Third Annual State of North Carolina Research and Creativity Symposium.”

#### WAKE FOREST UNIVERSITY HEALTH SCIENCES

- Dr. Dwayne W. Godwin, \$3,000, “Neurodegenerative Disease: The Path from Bench to Bedside.”

#### WAKE FOREST UNIVERSITY

- Dr. Stan W. Mandel, \$3,000, “Biotechnology Research Symposium: Innovation, Funding and Ethics.”

#### W. G. ENLOE HIGH SCHOOL

- Mr. John Noland, \$475, “National Enloe Mathematical Olympiad.”

## Biotechnology Meeting Grant

The Biotechnology Center awarded four grants totaling \$24,856.90.

#### DUKE UNIVERSITY

- Dr. Galen Wagner, \$1,000, “34th Annual Computers in Cardiology Conference.”

#### DUKE UNIVERSITY MEDICAL CENTER

- Mollie C. Sykes, \$10,000, “National Institutes of Health Regional Seminar on Program Funding and Grants Administration.”

#### SMALL BUSINESS AND TECHNOLOGY DEVELOPMENT CENTER

- Mr. John P. Ujvari, \$7,000, “SBIR National Conference.”

#### UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL

- Dr. Howard L. McLeod, \$6,856.90, “Second Annual Chapel Hill Drug Conference One of a Kind: The Search for Individualized Therapy.”

## Biotechnology Research Grant

The Biotechnology Center awarded 11 grants totaling \$821,766.

#### CHARLOTTE-MECKLENBURG HOSPITAL AUTHORITY

- Dr. Qi L. Lu, \$75,000, “Developing Amphiphilic Polymers as Gene Delivery Vehicles for the Treatment of Muscular Dystrophy.”

#### EAST CAROLINA UNIVERSITY

- Dr. Yan-Hua Chen, \$75,000, “Renal Tubular Dysfunction in Claudin-7 Null Mice.”
- Dr. Rachel L. Roper, \$72,479, “Novel Poxvirus Virulence Factor A35R, Immune Suppression, and Improved Poxvirus-Based Vaccine.”

#### NORTH CAROLINA CENTRAL UNIVERSITY

- Dr. Somnath Mukhopadhyay, \$75,000, “Identification of Non-CB1/CB2 Anandamide Receptor Using Novel Single-Chain Phage Antibody Library.”
- Dr. Jiahua (Jay) Xie, \$75,000, “Identification and Characterization of Se-Accumulating Genes in Plant.”

#### UNIVERSITY OF NORTH CAROLINA AT ASHEVILLE

- Dr. Thomas E. Meigs, \$74,850, “Dissection of an Intracellular Signaling Network Through Engineering of Immobilized Effector Proteins: A Novel Approach for Identifying G{alpha}12 Interactions Involved in Tumorigenesis.”
- Dr. Jeffrey D. Schmitt, \$75,000, “Exploration of Native Western North Carolina Botanical Species as Cancer Therapeutics.”

#### UNIVERSITY OF NORTH CAROLINA AT CHARLOTTE

- Dr. Andriy Baumketner, \$75,000, “Theoretical Modeling of Fibril Assembly.”

#### UNIVERSITY OF NORTH CAROLINA WILMINGTON

- Dr. Thomas H. Shafer, \$74,437, “Biomimetic Potential: Gene Silencing to Determine the Roles of Crustacean Cuticular Proteins and Their Biomimetic Potential.”

#### WAKE FOREST UNIVERSITY

- Dr. Christa L. Colyer, \$75,000, “Employing CE-LIF as a Tool for Microbe Determination.”
- Dr. Raymond E. Kuhn, \$75,000, “Diagnostic Assay and Nutraceutical for Enteric Septicemia of Catfish.”

## Biowork Course Sponsorship Award

The Biotechnology Center made four awards totaling \$18,773.75.

#### BRUNSWICK COMMUNITY COLLEGE

- Dr. Sybil K. Burgess, \$3,773.75 “BioWork Course at Brunswick Community College for Nov. 9, 2006 to April 3, 2007.”

#### DURHAM TECHNICAL COMMUNITY COLLEGE

- Pamela Senegal, \$5,000, “BioWork Course for August 22 – December 12, 2006” and \$5,000 for “BioWork course for January 16 – May 10, 2007.”

#### WAKE TECHNICAL COMMUNITY COLLEGE

- Dr. Lin Wu, \$5,000, “BioWork Courses for Aug. 21, 2006 to Dec. 13, 2006.”

## Collaborative Funding Assistance Grant

The Biotechnology Center awarded eight grants totaling \$675,000.

#### DUKE UNIVERSITY

- Dr. Ashutosh Chilkoti, \$100,000, “Smart Polypeptide Nanocarriers for Tumor Chemotherapy.”
- Dr. Cynthia A. Toth, \$100,000, “Improving Imaging of Phenotypes in Age-Related Macular Degeneration.”

#### NORTH CAROLINA STATE UNIVERSITY

- Dr. Stephen Michielsen, \$100,000, “Antiviral Face Masks and Air Filters.”
- Dr. Orlando J. Rojas, \$40,000, “Novel Methods to Quantify Enzyme Activity in Lignocellulosic Substrates.”

#### THE HAMNER INSTITUTES

- Dr. Sheila Collins, \$100,000, “Molecular Signaling and Gene Expression Controlling Brown vs. White Adipocyte Development.”

#### UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL

- Dr. R. Jude Samulski, \$100,000, “Development of Cardiomyocyte Selective Gene Vectors.”
- Dr. M. Jackson Stutts, \$90,000, “Developing Purinergic Receptor Agonists as a Cystic Fibrosis Therapy.”

#### WAKE FOREST UNIVERSITY

- Dr. Victor Paul Pauca, \$45,000, “Systematic Development of Quantum Computational Software.”

## Education Enhancement Grant

The Biotechnology Center awarded nine grants totaling \$377,760.

#### APPALACHIAN STATE UNIVERSITY

- Dr. Libby G. Puckett, \$48,500, “Forensic Science Curriculum Enhancement Project.”

#### CAMPBELL UNIVERSITY

- Dr. I. Daniel Shin, \$89,455, “LC-MS Instrument to Fortify Education.”

#### FORSYTH TECHNICAL COMMUNITY COLLEGE

- Dr. Russel H. Read, \$8,852, “Evaluation of Need for Short Non Credit Course for Technical Service Providers Working in Life Sciences Facilities.”

#### NORTH CAROLINA CENTRAL UNIVERSITY

- Dr. Gregory J. Cole, \$12,000, “Enhancement of Biotechnology Education and Training of NCCU Faculty and Students.”

#### NORTH CAROLINA STATE UNIVERSITY

- Dr. John Cavanagh, \$20,000, “EEG: A 21st Century Biosciences Education Program.”

#### ROWAN-CABARRUS COMMUNITY COLLEGE

- Jeanie H. Moore, \$61,109, “New Directions for Career Counselors.”

#### UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL

- Denise L. Young, \$62,824, “Science 360 Biotechnology Initiative.”

#### UNIVERSITY OF NORTH CAROLINA AT CHARLOTTE

- Dr. Sharon K. Bullock, \$13,010, “Exploring Fundamental Concepts of Introductory Genetics Through Biotechnology.”

#### WARREN WILSON COLLEGE

- Dr. Paul J. Bartels, \$62,010, “Enhancement of Undergraduate Research: Biodiversity and Bioinformatics of Cryptic Microorganisms.”

## Education Mini-Grant

The Biotechnology Center awarded eight grants totaling \$40,051.

#### ASHEVILLE CITY SCHOOLS

- Shannon T. Baggett, \$5,907, “Opening Doors to Biotechnology.”

#### ATKINS SCHOOL OF BIOTECHNOLOGY

- Terry G. Howerton, \$3,298, “The BIOfocus Career Exploration Program.”

#### CARRBORO HIGH SCHOOL

- Robin E. Bulleri, \$5,950, “Biotechnology at Carrboro High School.”

#### LINCOLN COUNTY SCHOOLS

- Millie Costner, \$1,200, “Biotechnology—Careers With Many Choices.”

#### NORTH STOKES HIGH SCHOOL

- Benjamin A. Hall, \$5,945, “Exploring Micropropagation Techniques in Horticulture.”

#### RAVENSCROFT SCHOOL

- Zoe M. Welsh, \$5,999, “Creation and Implementation of Biotechnology—An Upper School Science Course.”

#### TERRY SANFORD HIGH SCHOOL

- Ava Bickerton, \$5,764, “Project Genome, Seven Labs Leading to Inquiry-Based Learning.”

#### WAYNE COUNTY PUBLIC SCHOOLS

- Darrell G. Coston, \$5,988, “Biotechnology Education Project—Dillard Middle School.”

## Faculty Recruitment Grant

The Biotechnology Center awarded three grants totaling \$450,000.

#### UNIVERSITY OF NORTH CAROLINA AT CHARLOTTE

- Dr. Lawrence E. Mays, \$150,000, “Faculty Recruitment Grant for Dr. Jennifer Weller.”

#### UNIVERSITY OF NORTH CAROLINA AT GREENSBORO

- Dr. Patricia H. Reggio, \$150,000, “North Carolina Biotechnology Center Faculty Recruitment Grant to Expand Expertise in UNC-Greensboro Center for Drug Discovery.”

#### NORTH CAROLINA AGRICULTURAL & TECHNICAL STATE UNIVERSITY

- Dr. Goldie S. Byrd, \$150,000, “Recruiting a Faculty Member in Biology at North Carolina A&T.”

## Institutional Development Grant

The Biotechnology Center awarded 14 grants totaling \$1,935,318.

#### EAST CAROLINA UNIVERSITY

- Dr. Mary J. Thomassen, \$163,539, “Laser Capture Microdissection: Advanced Technology for Biomedical Research.”

#### NORTH CAROLINA STATE UNIVERSITY

- Dr. Candace H. Haigler, \$167,535, “Multi-User Equipment for cCyo-Fracture, Deep-Etch Electron Microscopy.”
- Dr. Steffen Heber, \$227,029, “A Bioinformatics Computing Cluster for NC State University.”
- Dr. David Charles Muddiman, \$187,500, “Acquisition of an Accurate Mass Electrospray Ionization Time-of-Flight Mass Spectrometer with the Versatility and Throughput to Support Diverse Research Programs and Education.”

#### UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL

- Dr. Laurie Betts, \$86,200, “Core Facility for Biomolecular X-ray Crystallography II—Low Volume Crystallization Robotics.”
- Dr. Kathleen Conway Dorsey, \$34,239, “Development of Affymetrix Molecular Inversion Probe Technology for Targeted High-Throughput Genotyping and Comparative Genomic Hybridization.”
- Dr. Lee M Graves, \$27,447, “Development of an Antibody Microarray Analysis Facility.”
- Dr. Klaus Michael Hahn, \$226,960, “Next Generation of Live Cell Imaging.”
- Dr. Gary L. Johnson, \$66,960, “PHERAstar Multiple Reader for HTS Development.”
- Dr. Richard L. Segal, \$250,000, “Interdisciplinary Fundamental Studies of Mechanisms Underlying Human Movement.”
- Dr. Stephen L. Tilley, \$93,214, “Lung Disease Models Core.”

#### WAKE FOREST UNIVERSITY HEALTH SCIENCES

- Dr. Judy K. Brunso-Bechtold, \$75,000, “Digital Camera System for a Zeiss 10-CA Transmission Electron Microscope.”
- Dr. Michael E. Robbins, \$79,695, “Orthovoltage Irradiation Facility at the Wake Forest University School of Medicine.”
- Dr. Michael J. Thomas, \$250,000, “Replacing/Upgrading Tandem Mass Spectrometer.”

## Multi-Disciplinary Research Grant

The Biotechnology Center awarded three grants totaling \$749,988.

#### NORTH CAROLINA STATE UNIVERSITY

- Dr. Jay J. Cheng, \$249,988, “Conversion of Coastal Bermuda Grass into Bioethanol.”
- Dr. Elizabeth G. Lobo, \$250,000, “The Role of Palladin in the Mechanobiology of Human Mesenchymal Stem Cells.”

#### UNIVERSITY OF NORTH CAROLINA AT CHARLOTTE

- Dr. Michael C. Hudson, \$250,000, “An Edible, Human Vaccine Expressed in Soybeans.”

## Presidential Initiative Award

The Biotechnology Center made one award worth \$5,000.

#### BRUNSWICK COMMUNITY COLLEGE

- Michelle Gemperts, \$5,000, “Strategic Planning for Biotechnology in Brunswick County.”

## Regional Development Grant

The Biotechnology Center awarded five grants totaling \$278,660.

### APPALACHIAN STATE UNIVERSITY

- Dr. Jeffrey E. Ramsdell, \$45,500, “Biofuel Feedstocks for Western North Carolina—Linking Small Farms to Local Production.”

### CARTERET COMMUNITY COLLEGE

- Dr. Donald F. Staub, \$29,500, “Determining the Feasibility of Establishing a Marine Biotechnology Incubator in Coastal North Carolina.”

### NORTHEASTERN NORTH CAROLINA REGIONAL ECONOMIC DEVELOPMENT COMMISSION

- Albert A. Delia, \$70,000, “North Carolina Bio-East Alliance.”
- Vann Rogerson, \$58,660, “Northeast North Carolina Biotechnology Inventory & Feasibility Study.”

### NORTH CAROLINA STATE UNIVERSITY

- Dr. Prema Arasu, \$75,000, “Winning the Bid for North Carolina: Homeland Security’s New National Bio and Agro-Defense Facility.”

## SBIR Bridge Loan

The Biotechnology Center awarded one loan worth \$75,000.

### BIOMACHINES

- Dr. Jingwen Chen, \$75,000, “MS Based Antibody Protein Chip Technology.”

## Small Business Research Loan

The Biotechnology Center awarded three loans worth \$442,712.

### ADDRENEX PHARMACEUTICALS

- Dr. Moise A. Khayrallah, \$150,000, “Manufacturing and Pharmacokinetic Study of Clonidel.”

### JENKEN BIOSCIENCES

- Dr. Edwin Wu, \$142,712, “Studies of a Morphinan Derivative in the Inflammatory Injury Associated with Fatty Liver.”

### TEOTTEN DIAGNOSTICS

- Dr. Jeffrey R. Shuster, \$150,000, “Diagnostic Test for Catheter-Associated Infection.”

## Strategic Growth Loan

The Biotechnology Center awarded one loan worth \$160,000.

### ADVANCED LIQUID LOGIC

- Richard M. West, \$160,000, “Advanced Liquid Logic Business Plan.”

## Technology Enhancement and Acceleration Model Loan

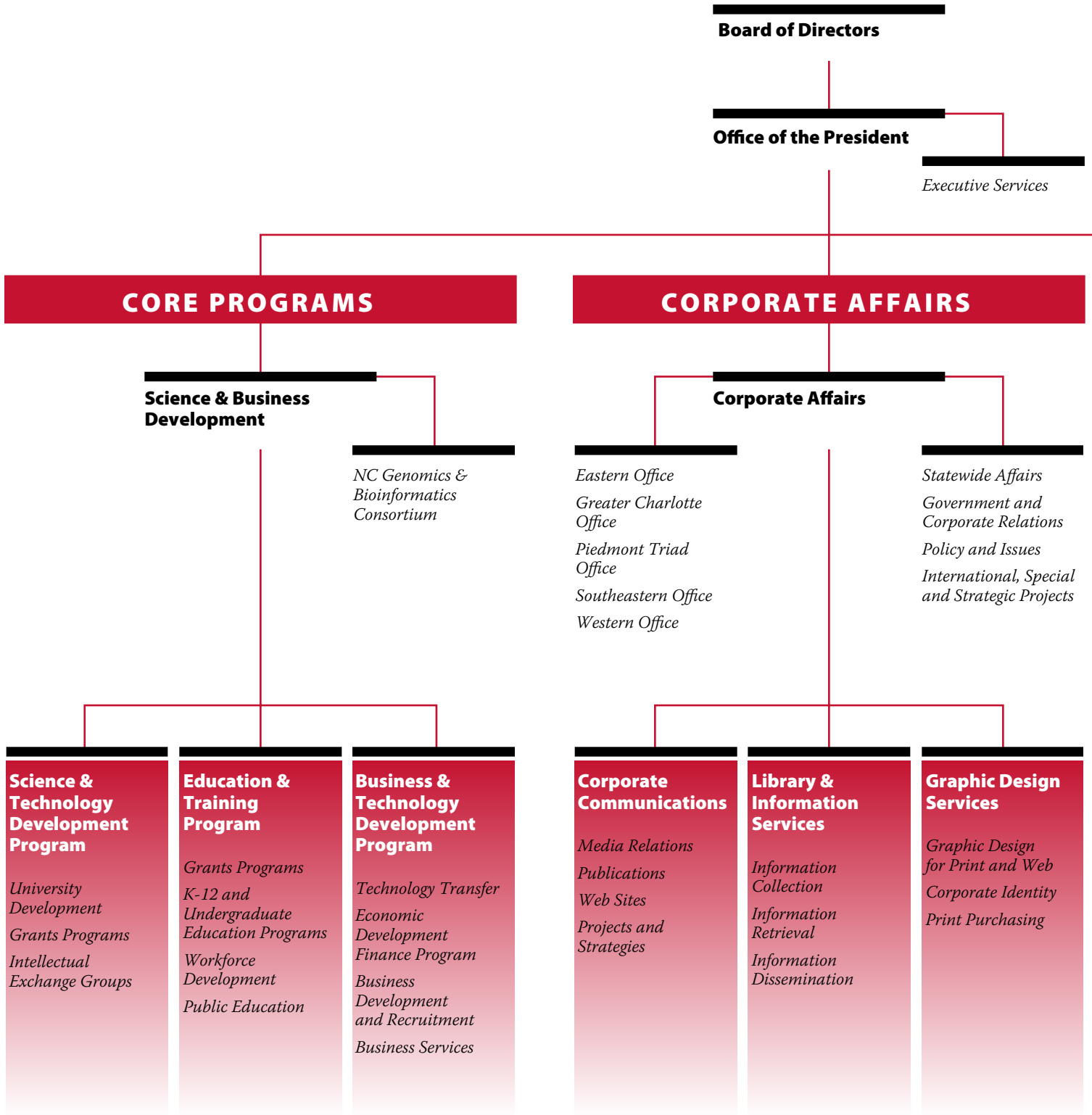
The Biotechnology Center awarded two loans worth \$100,000.

### PROVAGEN

- Dr. John W. Allen, North Carolina A&T State University, \$50,000, “Provagen, A New Biotech Corporation.”

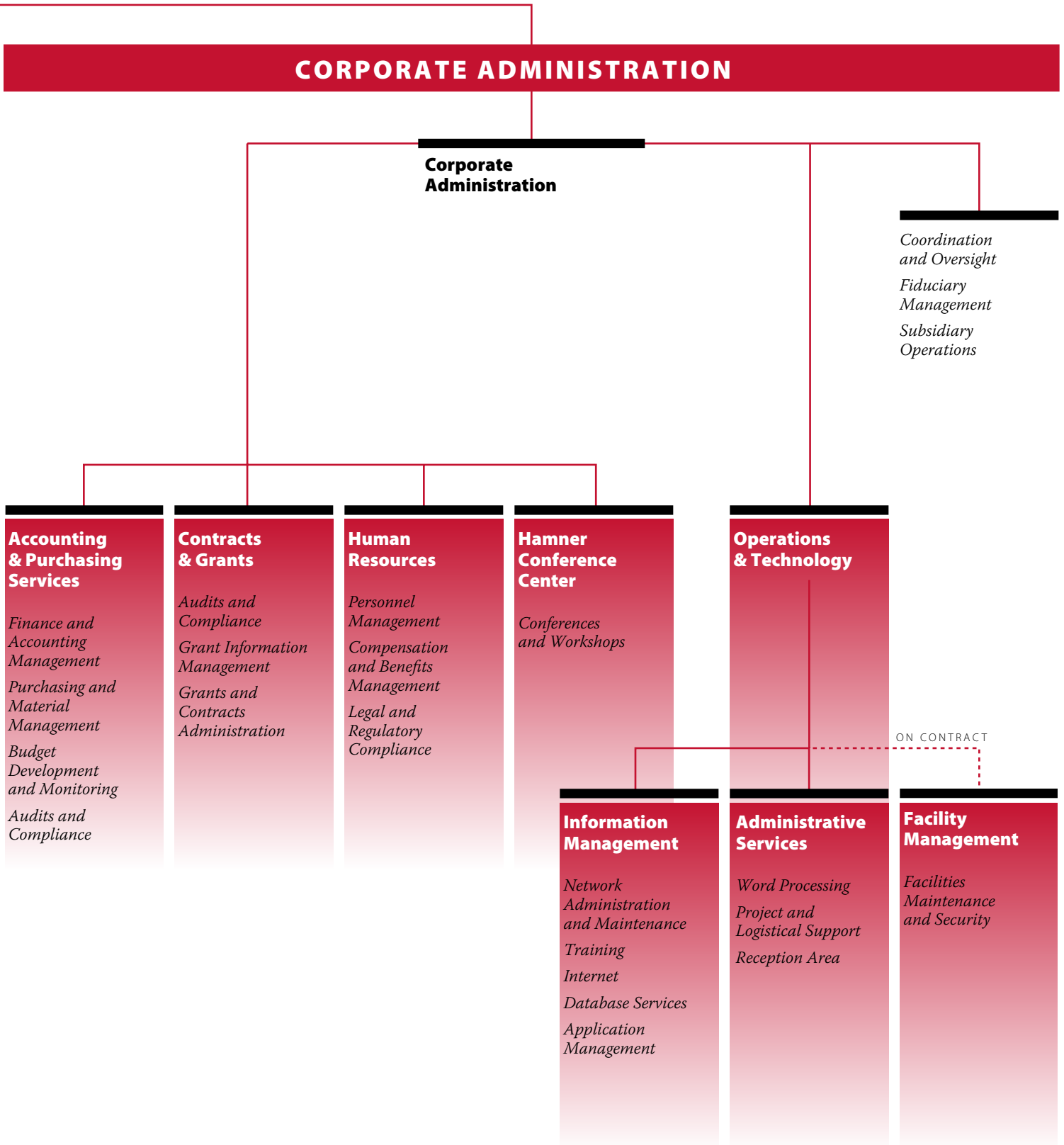
### SIRGA ADVANCED BIOPHARMA

- Dr. Paul F. Agris, North Carolina State University, \$50,000, “Sirga AB TEAM Business Development.”



# Program Structure & Task Areas

AS OF JUNE 30, 2007



# Board of Directors

AS OF JUNE 30, 2007

John L. Atkins III\*  
*Treasurer, Board of Directors*  
Chairman and Chief Executive Officer  
O'Brien/Atkins Associates

Robert M. Bell, Ph.D.\*  
Life Sciences Venture Partner  
InterSouth Partners

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The University of North Carolina

George Briggs  
Executive Director  
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NC State University

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North Carolina Community College System

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UNC-Charlotte

Marvin Moss, Ph.D.\*  
Professor  
UNC-Wilmington

Arthur M. Pappas\*  
Managing Partner  
A.M. Pappas and Associates

Michael R. Pavia, Ph.D.  
Entrepreneur-In-Residence  
Oxford Bioscience Partners

Milton Prince  
President and Chief Executive Officer  
Coastal Carolina Cotton Gins

Gerald F. Roach  
Partner  
Smith, Anderson, Blount, Dorsett, Mitchell &  
Jernigan

Christy L. Shaffer, Ph.D.  
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Inspire Pharmaceuticals

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Vice Provost for Research  
Duke University

Sam R. Sloan  
Consultant (Privately Owned Companies)

Jean G. Spaulding, M.D., DFAPA  
Trustee  
The Duke Endowment

Robert S. Timmins, Sc.D.\*  
Retired President, Organon Teknika

E. Norris Tolson\*  
President and CEO  
North Carolina Biotechnology Center

Steve Troxler  
Commissioner  
North Carolina Department of Agriculture  
and Consumer Services

Rosemary C. Wander, Ph.D.  
Associate Provost for Research and Public/  
Private Sector Partnerships  
UNC-Greensboro

## STAFF TO THE BOARD OF DIRECTORS

Lori L. Greenstein  
Assistant Secretary and Treasurer  
North Carolina Biotechnology Center

Robert Spearman  
Counsel and Assistant Secretary  
Parker, Poe, Adams and Bernstein

Margie Stevens  
Executive Assistant  
North Carolina Biotechnology Center

\* member of the Executive Committee

# Independent Auditors' Report

*The Board of Directors  
North Carolina Biotechnology Center and Subsidiaries:*

We have audited the accompanying consolidated statements of financial position of the North Carolina Biotechnology Center and Subsidiaries (the Biotechnology Center) as of June 30, 2007 and 2006, and the related consolidated statements of activities and changes in net assets and cash flows for the years then ended. These consolidated financial statements are the responsibility of the Biotechnology Center's management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits.

We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement. An audit includes consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Biotechnology Center's internal control over financial reporting. Accordingly, we express no such opinion. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the North Carolina Biotechnology Center and Subsidiaries as of June 30, 2007 and 2006, and the changes in their net assets and their cash flows for the years then ended in conformity with U.S. generally accepted accounting principles.

**KPMG LLP**

*September 3, 2007*

# Consolidated Statements of Financial Position

*June 30, 2007 and 2006*

<b>Assets</b>	<b>2007</b>	<b>2006</b>
Cash	\$ 1,629,293	1,133,960
Investments	24,604,174	23,636,465
Receivables:		
Accrued interest receivable	871,821	1,330,348
Miscellaneous receivables	100,836	78,580
Contributions receivable	67,999	1,489
Loans receivable	824,750	1,000,000
Notes receivable	4,270,033	2,973,271
Allowance for uncollectible accrued interest, loans and notes receivable	<u>(3,569,819)</u>	<u>(2,900,046)</u>
Total receivables, net	2,565,620	2,483,642
Other assets	61,637	25,118
Property, plant, and equipment, net	<u>4,107,787</u>	<u>3,984,388</u>
Total assets	<u>\$ 32,968,511</u>	<u>31,263,573</u>
<b>Liabilities and Net Assets</b>		
Accounts payable and accrued expenses	\$ 307,990	161,673
Grants and contracts payable	<u>8,479,701</u>	<u>7,644,271</u>
Total liabilities	<u>8,787,691</u>	<u>7,805,944</u>
Net assets:		
Unrestricted net assets:		
Designated for specific purposes	23,250,748	23,109,080
Undesignated	734,663	255,747
Temporarily restricted	<u>195,409</u>	<u>92,802</u>
Total net assets	<u>24,180,820</u>	<u>23,457,629</u>
Total liabilities and net assets	<u>\$ 32,968,511</u>	<u>31,263,573</u>

*See accompanying notes to consolidated financial statements.*

# Consolidated Statements of Activities and Changes in Net Assets

*Years ended June 30, 2007 and 2006*

	<u>2007</u>	<u>2006</u>
Unrestricted revenues, (losses) gains, and other support:		
Grants and contracts:		
State of North Carolina	\$ 13,083,395	12,143,395
Federal	—	60,000
Interest and dividends	1,461,813	1,215,298
Hamner Conference Center	375,925	357,550
Net realized and unrealized loss on investments	(203,233)	(91,662)
Other, net	177,330	246,070
Net assets released from restrictions	<u>275,633</u>	<u>285,120</u>
Total unrestricted revenues, (losses) gains, and other support	<u>15,170,863</u>	<u>14,215,771</u>
Expenses:		
Science and technology development	4,716,620	3,641,812
Statewide development	1,110,228	961,320
Business and technology development	716,376	199,088
Education and training grants	682,851	538,268
Hamner Conference Center	622,998	571,643
Library and information services	437,231	347,426
Biotechnology event grants/sponsorships	92,975	38,811
Other programs	290,965	25,656
Genomics and bioinformatics program	4,782	2,902
Program management	3,456,020	4,324,035
General and administrative	<u>2,419,233</u>	<u>2,260,782</u>
Total expenses	<u>14,550,279</u>	<u>12,911,743</u>
Change in unrestricted net assets	620,584	1,304,028
Temporarily restricted revenues:		
Contributions	378,240	276,985
Net assets released from restrictions	<u>(275,633)</u>	<u>(285,120)</u>
Change in temporarily restricted net assets	<u>102,607</u>	<u>(8,135)</u>
Change in total net assets	723,191	1,295,893
Net assets, beginning of year	<u>23,457,629</u>	<u>22,161,736</u>
Net assets, end of year	<u>\$ 24,180,820</u>	<u>23,457,629</u>

*See accompanying notes to consolidated financial statements.*

# Consolidated Statements of Cash Flows

*Years ended June 30, 2007 and 2006*

	<u>2007</u>	<u>2006</u>
Cash flows from operating activities:		
Change in total net assets	\$ 723,191	1,295,893
Adjustments to reconcile change in total net assets to net cash provided by operating activities:		
Depreciation	353,780	331,788
Net realized and unrealized loss on investments	203,233	91,662
Program management expenses associated with the North Carolina Bioscience Investment Fund	185,625	1,334,205
Increase (decrease) in cash due to changes in:		
Notes and loans receivable	(1,121,512)	(18,287)
Allowance for uncollectible accrued interest, loans and notes receivables	669,773	100,011
Accrued interest receivable	458,527	(237,378)
Contributions receivable	(66,510)	42,108
Miscellaneous receivables	(22,256)	85,633
Other assets	(36,519)	(4,125)
Accounts payable and accrued expenses	146,317	6,965
Grants and contracts payable	835,430	2,154,113
Deferred revenues	—	(75,000)
Net cash provided by operating activities	<u>2,329,079</u>	<u>5,107,588</u>
Cash flows from investing activities:		
Purchase of property and equipment	(477,179)	(85,430)
Proceeds from sale of investments	175,872,407	156,110,940
Purchase of investments	(177,228,974)	(161,804,619)
Net cash used by investing activities	<u>(1,833,746)</u>	<u>(5,779,109)</u>
Net increase (decrease) in cash	495,333	(671,521)
Cash, beginning of year	<u>1,133,960</u>	<u>1,805,481</u>
Cash, end of year	<u>\$ 1,629,293</u>	<u>1,133,960</u>

*See accompanying notes to consolidated financial statements.*

# Notes to the Consolidated Financial Statements

June 30, 2007 and 2006

## 1. Organization and Summary of Significant Accounting Policies

### (a) Organization and Purpose

The North Carolina Biotechnology Center (Biotechnology Center) was incorporated in 1984 for the purpose of furthering economic development in North Carolina through education, research and commercial development in biotechnology. The Biotechnology Center aids the biotechnology-related efforts of researchers, businesses, state and federal governments, and other agencies primarily through awards of research grants restricted to specific programs.

The North Carolina Bioscience Ventures, LLC (Ventures) is a wholly owned subsidiary of the Biotechnology Center and is used to account for a special \$10 million appropriation to the Biotechnology Center from the State of North Carolina. The purpose of the appropriation and establishment of Ventures is to promote the development of the bioscience industry in North Carolina. Funds are invested in the North Carolina Bioscience Investment Fund, LLC (BIF), a venture capital limited liability corporation responsible for investing funds of the Biotechnology Center along with funds from other investors in portfolio companies. The BIF is 37.91% owned by Ventures.

The North Carolina Genomics and Bioinformatics Consortium, LLC (Consortium) is a wholly owned subsidiary of the Biotechnology Center. The purpose of the Consortium is to bring together the key elements of research, development, commercialization and support infrastructure in North Carolina that use or develop genomics, proteomics or bioinformatics in order to plan strategic research and development initiatives, and build infrastructure, synergy and community among its associates.

### (b) Basis of Accounting and Presentation

The consolidated financial statements have been prepared using the accrual basis of accounting.

Net assets and revenues, expenses, gains and losses are classified based on the existence or absence of donor-imposed restrictions. Accordingly, net assets of the Biotechnology Center and changes therein are classified and reported as follows:

**Unrestricted net assets**—Net assets that are not subject to donor-imposed stipulations.

**Temporarily restricted net assets**—Net assets subject to donor-imposed stipulations that may or will be met either by actions of the Biotechnology Center and/or the passage of time.

Revenues are reported as increases in unrestricted net assets unless use of the related asset is limited by donor-imposed restrictions. Expenses are reported as decreases in unrestricted net assets. Gains and losses are reported as increases or decreases in unrestricted net assets unless their use is restricted by explicit donor stipulation or by law. Expirations of temporary restrictions on net assets (i.e., the donor-stipulated purpose has been fulfilled and/or the stipulated time period has elapsed) are reported as reclassifications between the applicable classes of net assets.

### (c) Principles of Consolidation

The consolidated financial statements include the financial statements of the North Carolina Biotechnology Center and its wholly owned subsidiaries. All significant intercompany balances and transactions have been eliminated in consolidation.

### (d) Significant Accounting Policies

The following significant accounting policies have been used in the preparation of the consolidated financial statements:

#### Cash and Investments

The Biotechnology Center invests funds not immediately needed for day-to-day operations in short-term investments, primarily certificates of deposit and commercial paper, consistent with guidelines established by the Board of Directors. These guidelines require that the Biotechnology Center invest only in certain financial instruments considered to be both conservative and adequately diversified. The Executive Committee and the Equity Investment Committee periodically review the Biotechnology Center's investment portfolio.

Investments are generally recorded at fair value. The equity method of accounting is used to account for certain equity investments where the Biotechnology

Center's ownership is considered to be more than minor, but less than 50%. Equity investments include private equity investments in biotechnology/bioscience companies and venture capital funds. In the case of certain less marketable investments, principally private equity investments which are not accounted for on the equity method, investments are carried at the lower of cost or fair value. For these less marketable securities, the determination of fair value requires the use of estimates, which are based on information provided by the fund managers or general partners and knowledge of events or changes in circumstances that would have a significant impact on the value of the investment. Because of the inherent uncertainty in the use of estimates, fair values that are based on estimates may differ from the fair values that would have been used had a ready market for the investments existed.

For purposes of the consolidated statements of cash flows, the Biotechnology Center considers cash equivalents and certificates of deposit to be investments.

Under a profit sharing agreement with the State of North Carolina, the Biotechnology Center and the State will share equally the net profits in excess of \$150,000 on any individual investment made with State funds by the Biotechnology Center after July 1, 1997. There were no net profits on any of the Biotechnology Center's investments in 2007 and 2006 that exceeded the \$150,000 threshold.

### Receivables

Through its Economic Development Finance Program, the Biotechnology Center supports research and development projects of young and growing biotechnology/bioscience companies that may not yet qualify for conventional forms of financial assistance. Since 1988, most awards to companies have been in the form of notes, and all amounts, including interest, are to be repaid in full within one to seven years of the date of the notes. Management has considered each company's ability to repay the notes, loans and accrued interest, including the financial condition of the company and the repayment terms of the note, and has recorded an allowance for uncollectible receivables. The allowance for uncollectible accrued interest, loans and notes receivable totaled \$3,569,819 and \$2,900,046 at June 30, 2007 and 2006, respectively. The Biotechnology Center's other receivables are considered to be fully collectible.

### Property, Plant, and Equipment

Property, plant, and equipment are recorded at cost. Depreciation is provided using the straight-line method over the estimated useful lives of three to five years for furniture, fixtures and equipment and thirty years for the Biotechnology Center's permanent headquarters.

### Recognition of Grant Awards and Grants Payable

Grant awards and the corresponding grants payable are recognized at the time the grant award is approved by the Executive Committee of the board of directors.

### Net Assets

Certain unrestricted net assets have been designated for specific purposes by the board of directors. At June 30, 2007 and 2006, unrestricted net assets designated for specific purposes consisted of the following:

	<u>2007</u>	<u>2006</u>
Property, plant and equipment	\$ 4,107,787	3,984,388
Future building renovations and repairs	1,732,355	2,276,012
Future economic development investment	1,721,379	2,140,437
Stocks and equity investments	9,960,679	10,066,764
Other	5,728,548	4,641,479
	<u>\$ 23,250,748</u>	<u>23,109,080</u>

Temporarily restricted net assets are available for the following purposes at June 30, 2007 and 2006:

	<u>2007</u>	<u>2006</u>
Statewide development	\$ 75,771	7,752
Intellectual exchange activities	119,638	85,050
	<u>\$ 195,409</u>	<u>92,802</u>

Net assets were released from donor restrictions by incurring expenses satisfying the restricted purposes or by the passage of time. In 2007 and 2006, purpose restrictions were accomplished by incurring \$275,633 and \$285,120, respectively, in expenses for statewide offices and intellectual exchange activities.

### Contributions

Contributions, including unconditional promises to give, are recognized as revenues in the period received. Conditional promises to give are not recognized until they become unconditional, that is, when the conditions on which they depend are substantially met. Contributions of assets other than cash are recorded at their estimated fair value.

### Recognition of Funding

Funds are granted periodically from private and public agencies for specific purposes or to aid the Biotechnology Center's general operation and sustain its continued existence. Funds appropriated for specific purposes are deemed to be earned and reported as revenue when the Biotechnology Center has incurred expenditures in compliance with the grant agreement. Such amounts

received, but not yet earned, are reported as deferred revenues.

The Biotechnology Center received 86% and 85% of its unrestricted revenues from the State of North Carolina in 2007 and 2006, respectively.

### Functional Allocation of Expenses

The costs of providing the various programs and activities of the Biotechnology Center have been summarized on a functional basis in the statements of activities and changes in net assets. Certain general and administrative expenses totaling \$1,042,989 and \$940,477 for the years ended June 30, 2007 and 2006, respectively, have been allocated among the programs and activities benefited.

### Income Taxes

The Biotechnology Center is exempt from federal income taxes on related income under Internal Revenue Code Section 501(a) as an organization described in Section 501(c)(3). Accordingly, no provision for income taxes has been made. As single member limited liability companies, Ventures and the Consortium are disregarded entities for income tax purposes.

#### (e) Use of Estimates

The preparation of the consolidated financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

## 2. Investments

The carrying values of investments at June 30, 2007 and 2006 were as follows:

	<u>2007</u>	<u>2006</u>
Cash equivalents	\$ 10,710,108	4,820,317
Certificates of deposit	3,150,000	6,950,000
Stocks	26,751	30,677
Fixed income	9,300,000	10,100,000
BIF	764,125	949,351
Equity investments	653,190	786,120
	<u>\$ 24,604,174</u>	<u>23,636,465</u>

The BIF represents Ventures' 37.91% equity-method investment in the North Carolina Bioscience Investment Fund, LLC. In 2007 and 2006, the Ventures' share of the BIF's net loss totaled \$185,625 and \$1,334,205, respec-

tively, which is recorded in the consolidated statements of activities and changes in net assets as program management expense.

In connection with Economic Development Finance awards, the Biotechnology Center receives the right to purchase stock in various biotechnology/bioscience companies if certain conditions are met. As of June 30, 2007, the Biotechnology Center received warrants to purchase 1,468,340 common and preferred shares with exercise prices ranging from \$0.15 to \$18.84 per share. These warrants expire at various dates through 2017. Management has determined the value of the warrants to be immaterial and, accordingly, they are not reflected in the consolidated financial statements.

As of June 30, 2007, the Biotechnology Center has capital contribution commitments to various venture capital funds totaling \$238,141. These funds will be invested in future years as capital calls are made by the various venture capital fund managers.

## 3. Loans and Notes Receivable

Loans and notes receivable at June 30, 2007 and 2006 consisted of the following:

	<u>2007</u>	<u>2006</u>
Loans receivable:		
Loan receivable dated April 10, 2003 from KBI BioPharma, Inc. Interest is payable quarterly at a rate of 5% of the outstanding loan balance. Principal is due and payable in 2008.	\$ 824,750	1,000,000
Total loans receivable	<u>\$ 824,750</u>	<u>1,000,000</u>

Notes receivable:

Notes receivable from various state biotechnology companies under Economic Development Finance awards. Interest rates on these notes vary from 7.0% to 8.25%. Generally, principal and interest are payable one to five years from the execution of the note. Due at various dates through 2010.	277,220	180,216
Notes receivable from various state biotechnology companies under Small Business Innovation Research awards. Interest rates on these notes vary from 4.00% to 10.50%. Generally, principal and interest are payable one to five years from the execution of the note. Due at various dates through 2012.	440,341	332,573

	<u>2007</u>	<u>2006</u>
Notes receivable from various state biotechnology companies under Business Development Loans. Interest rates on these notes vary from 5.50% to 11.00%. Generally, principal and interest are payable one to five years from the execution of the note. Due at various dates through 2012.	\$ 293,884	182,141
Notes receivable from various state biotechnology companies under Small Business Research Loans. Interest rates on these notes vary from 4.00% to 9.25%. Generally, principal and interest are payable one to seven years from the execution of the note. Due at various dates through 2012.	3,031,628	2,222,880
Note receivable from a state biotechnology company under Strategic Growth Loans. Interest rate on this note is 9.25%. Generally, principal and interest are payable one to five years from the execution of the note. Due in 2012.	144,000	—
Note receivable from a state biotechnology company under Technology Enhancement & Acceleration Model Loans. Interest rate on this note is 9.25%. Generally, principal and interest are due one to five years from the execution of the note. Due in 2012.	25,000	—
Notes receivable from various state universities under Proof of Principle Awards. Generally, principal and interest are payable within seven years, if the technology or intellectual property is sold, transferred, assigned or licensed. However, there is no interest if paid in the first year.	<u>57,960</u>	<u>55,461</u>
Total notes receivable	4,270,033	2,973,271
Less allowance for uncollectible loans and notes receivable	<u>(3,120,614)</u>	<u>(2,105,437)</u>
Loans and notes receivable, net	<u>\$ 1,974,169</u>	<u>1,867,834</u>

#### 4. Contributions Receivable

Contributions receivable consisted of the following at June 30, 2007 and 2006:

	<u>2007</u>	<u>2006</u>
Unconditional promises expected to be collected in:		
Less than one year	\$ 62,499	1,489
One year to five years	<u>5,500</u>	<u>—</u>
	<u>\$ 67,999</u>	<u>1,489</u>

#### 5. Property, Plant, and Equipment

A summary of property, plant, and equipment at June 30, 2007 and 2006 follows:

	<u>2007</u>	<u>2006</u>
Building	\$ 7,327,493	7,305,069
Furniture, fixtures, and equipment	<u>1,755,194</u>	<u>1,425,267</u>
	9,082,687	8,730,336
Less accumulated depreciation	<u>(4,974,900)</u>	<u>(4,745,948)</u>
Property, plant, and equipment, net	<u>\$ 4,107,787</u>	<u>3,984,388</u>

#### 6. Grants and Contracts Payable

The Biotechnology Center has committed grants and contracts to various research programs, primarily through major universities and biotechnology companies located in North Carolina. Grants and contracts payable at June 30, 2007 are expected to be paid as follows:

	<u>Total</u>
2008	\$ 5,797,164
2009	<u>2,682,537</u>
	<u>\$ 8,479,701</u>

#### 7. Interest and Dividend Income

Interest and dividend income of \$1,266,737 and \$856,158 was earned during the years ended June 30, 2007 and 2006, respectively, primarily by investing in certificates of deposit and commercial paper. Interest income on notes and loans receivable in 2007 and 2006 totaled \$195,076 and \$359,140, respectively.

#### 8. Benefit Plans

The Biotechnology Center has a defined contribution money purchase pension plan covering all qualified employees who have completed one year of service. The Biotechnology Center's contribution is 11.00% of pre-tax compensation for eligible employees. Employees are fully vested in the plan assets upon participation.

Approximately \$340,000 and \$316,000 was contributed to the plan during the years ended June 30, 2007 and 2006, respectively. The plan is self-directed, with the majority of participants electing mutual funds. Additionally, after six months of employment, all regular employees are eligible to participate in a 403(b)(7), tax-deferred supplemental retirement plan. Participants may contribute subject to prevailing Internal Revenue Service regulations.

## 9. Operating Leases

The Biotechnology Center has acquired the right to use the land on which its building is constructed through an operating lease agreement which expires on December 31, 2089 with another nonprofit organization, the Triangle Universities Center for Advanced Studies, Inc. (TUCASI). Title to the land remains with TUCASI.

Payments to TUCASI under the agreement are at the nominal rate of \$1 per year, and the Biotechnology Center pays all costs of insurance, taxes, and maintenance as defined in the lease agreement.

2008	\$ 7,944
2009	<u>3,433</u>
	<u>\$ 11,377</u>

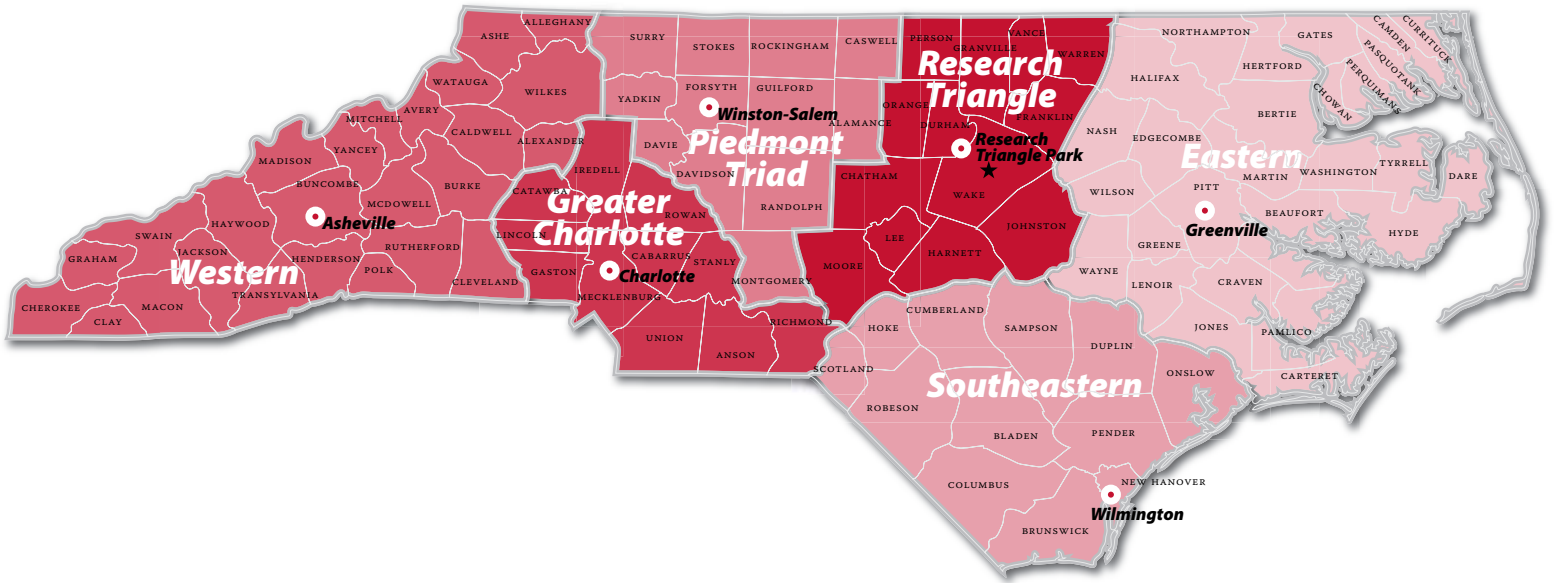
The Center also leases office space for certain regional offices, under noncancelable operating leases. Future minimum lease payments under these leases as of June 30, 2007 are as follows:

Total rental expense for operating leases in 2007 and 2006 was \$61,118 and \$35,741, respectively.

## 10. Related Parties

Certain members of the Board of Directors of the Biotechnology Center are affiliated with funds and companies invested in by the Biotechnology Center. Total capital calls to these entities totaled \$32,490 in 2007 and \$42,565 in 2006. Certain members of the board of directors are also affiliated with state colleges and universities to which the Biotechnology Center makes grant or contract awards. Total grant or contract awards to these entities totaled \$4,822,126 in 2007 and \$4,240,247 in 2006. Board members abstain from voting on matters related to his or her organization.

# The Biotechnology Center's Regional Offices: Serving North Carolina's Biotechnology Community



## Eastern Office

The Eastern Office of the North Carolina Biotechnology Center and its working partners are catalyzing economic development and job creation in the region. Bioscience companies and researchers are performing work in a variety of fields including biopharmaceutical production, biofuels development and marine biology.

CONTACT: *John Chaffee, director, 252-328-9982*



## Greater Charlotte Office

The Greater Charlotte region is home to more than two dozen bioscience companies providing high-paying jobs in a variety of fields including nutrition studies, nanotechnology, bioinformatics and computational biology. The region also has the state's largest concentration of biomedical device companies.

CONTACT: *Marjorie Benbow, director, 704-687-8176*



## Piedmont Triad Office

The Piedmont Triad is home to 65 bioscience-related companies performing work in a variety of fields including regenerative medicine, genomic medicine and industrial biotechnology. An additional 50 companies support this cluster with sales, marketing and other customized professional services.

CONTACT: *Gwyn Riddick, director, 336-725-6671*



## Research Triangle Park Headquarters

The North Carolina Biotechnology Center, through its Research Triangle Park headquarters and five regional offices, works to create high-paying jobs across the state. The Biotechnology Center is the world's first government-sponsored organization dedicated to developing the biotechnology industry.

CONTACT: *Steve Casey, vice president, Statewide Operations, 919-549-8861*



## Southeastern Office

North Carolina's Southeastern region is poised to expand bioscience development across the state by developing assets in marine science, plant and animal agriculture, natural products, biodefense and biofuels.

CONTACT: *Randall Johnson, director, 910-763-5748*



## Western Office

The Western Office of the North Carolina Biotechnology Center and its working partners are catalyzing economic development and job creation in the region. Those goals are achieved through business, workforce training and strengthening research in medicinal herbs.

CONTACT: *Cheryl McMurry, director, 828-670-3394*



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