



INSTITUTE OF FOREST BIOTECHNOLOGY

Annual Report

July 1, 2003 — June 30, 2004



The Institute of Forest Biotechnology

THIS YEAR MARKS THE ANNIVERSARY of two very different but revolutionary discoveries. The 50TH anniversary of the discovery of the structure of DNA by Watson and Crick, the building block of all life on earth and the 100TH anniversary of the positive identification of chestnut blight at the New York Botanical Gardens. Both of these events had an enormous impact on the future of our forests and, only celebrating our 4TH anniversary, the Institute of Forest Biotechnology is providing leadership in connecting the technology of recombinant DNA to the diseases that threaten our forests.

The demand for wood and wood products is projected to increase dramatically in the coming decades to about 2050. That demand coincides with the maturation of developing countries, where as much as 95 percent of the wood harvested is used for cooking and heating. Unless alternative sources of wood from tree plantations are available, this demand will be met from native forests, especially in the tropical and boreal latitudes. The harvest of those forests could adversely affect the flora and fauna of the world and contribute to potential climate changes, including global warming. Biotechnology is a powerful tool that may help us meet these challenges and balance the demands for forest products with the responsibility for forest protection but only with careful consideration of ecological ramifications and societal issues.

The Institute of Forest Biotechnology works for societal, ecological and economic benefits from appropriate uses of biotechnology in forestry worldwide. It is a unique organization that brings together diverse sectors and stakeholders to address the opportunities for native forest protection, restoration of threatened tree species, scientific advancement, and consideration of societal and cultural issues at the forefront of a developing technology.

The Institute of Forest Biotechnology is unique in the world. Recognition of its merits is being widely realized as evidenced by the diversity of its board of directors, and the success of its cornerstone programs. This multi-stakeholder approach permeates all of the Institute's programs as well as its board.

The goals of the Institute are being practically met by these Four Cornerstones programs:

- **Heritage Trees®.** This program seeks to conserve trees that have special significance for cultural, ecological or historic reasons in landscapes around the world. It promotes and integrates the application of emerging biotechnology, along with traditional approaches, to rescue threatened species or ameliorate threats to individual trees of special significance.
- **Ecological Ramifications.** The need exists to address the concerns regarding ecological disturbances from use of genetically modified organisms in forest and forest-based industries. This will be accomplished through symposia and projects, and partnering with biotechnologists and ecologists to fill the knowledge gaps.
- **Societal Issues.** Because trees hold cherished places in our culture and heritage, efforts will be made to identify the social, cultural and ethical issues at stake in the application of biotechnology to trees, and to address those concerns through forums and research reports to help guide and advance the public debate.
- **Outreach.** This program will focus on communicating the fundamental science and the risks and benefits to society, the environment and the economy.

New Outcomes, New Partners

THE HAPPIEST TASK OF AN OUTGOING BOARD CHAIR is to report an organization excellent in administration, effective in outcomes, distinctive in characteristics, and shaped by smart fellow board members.

The Institute of Forest Biotechnology well provides such an opportunity in 2004. As this *Annual Report* nicely and in so many ways documents, the IFB has proven this year to be a stronger, maturing, and realistically effective organization. Its activities and accomplishments are remarkable for its small size, for only two full-time administrative staff — the impressively competent Bob Kellison and Susan McCord — are largely responsible for the credibility and range of activities here described. At the same time, the activities and staff have been manifestly strengthened by board members who work in a very real way on projects and problem-solving.



STEVEN BURKE

Perhaps the best sign of an organization's credibility and value can in fact be seen in the measure and active participation of its board. Board colleagues exceptional in experience and skills, appropriately varied in vantage points, have shaped the genesis and development of the Institute. Their ability to merge broad leadership with engaged, practical participation has proven key to its early success. I admire, and have gained from, their unremitting commitment, smart guidance, and perfectly pitched balance between long-term vision and daily reality. New members this year – Wayne Barfield, Noah Pickus, Roger Sedjo, and George Weyerhaeuser – enrich the board and the Institute. Both will benefit from the perceptive leadership of Al Lucier when he assumes in November the chairmanship of the Institute.

Organizations, particularly new ones, are shaped by their challenges and defined by the effectiveness with which they address them. The Institute has this year forthrightly addressed three key areas of attention. Each is expected for a non-profit organization working innovatively for partnership in an unfolding new sector. Each is confidently addressed by staff and board, preparing for outcomes that realistically play out in the

longer rather than the immediate term.

The Institute must, first, ensure increased financial support from the widest feasible range

Organizations, particularly new ones, are shaped by their challenges and defined by the effectiveness with which they address them.

of public and private sources. Doing so is requisite to verify its commitment to the varied constituencies attentive worldwide to the development and issues of forest biotechnology; doing so is challenging, however, for some involved groups are financially unable to contribute, however much they support the Institute's overall approach and activities.

Second, the Institute must continue to identify new partners worldwide with which to thoughtfully and effectively work, perhaps in bold ways. Public or private, already engaged or coming new to forest biotechnology, public interest or profit interested, expected or surprising in the experience they bring, all must be brought credibly by the Institute to new outcomes and new partnerships.

Finally, the Institute must very carefully balance resources and temperate expansion with growing demands. This year reveals a significant increase in the type and number of ideas broached for Institute participation. While this is wonderfully encouraging, suggesting early external judgments of credibility and competence, an organization limited in staff and resources must carefully target activities and partners. Finding the right balance among both is a task of no small consequence to future success and credibility.

W. Steven Burke

Chair

Senior Vice President, Corporate Affairs
North Carolina Biotechnology Center

Message from the President

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IN OUR FOURTH YEAR OF EXISTENCE, the Institute of Forest Biotechnology is gaining momentum. Like a child of the same age we are learning to run. We have much to learn, but our pace and confidence is growing.

The year-in-review has been an extremely busy one. So busy, in fact, that Susan McCord — the brain trust of IFB — and I have had to hustle just to maintain our place in line. That predicament has kept us from taking on some new initiatives, but some old and some new projects have moved forward smartly. We are alternatively pleased and frustrated with the pace of progress — so much to be done and so little time to do it.



ROBERT KELLISON

We owe a debt of gratitude to the Board of Directors for the progress that has been made. The board members, like the employees of IFB, are finding their way in the governance of the Institute, the only such organization of its kind in the world. Board membership is nearing its complement but, more importantly than that, the board members are finding their niche. During the year, the very-active Heritage Trees® Committee, chaired by Al Lucier, was formed, as was the Nominating Committee, chaired by Lori Knowles, which has been responsible for expanding the Executive Committee and for identification of new board members. In addition, one board member (Don Doering) has helped us to create a developmental plan for IFB, and another one (Maud Hinchee) was instrumental in involving forest industry in the evolving loblolly pine genome project.

We would be remiss in not recognizing Steven Burke for his contributions to IFB. Steven, the chair of the organization since its inception, will be passing the gavel to Al Lucier at this year's fall board meeting. Further to the point, Steven was the progenitor of IFB. Going back to the latter half of 1998, Steven observed the difficulties being encountered with public acceptance of food and fiber crops in parts of Europe. He reasoned that if such a back swell were to be encountered in forestry, with the long lifespan and delayed sexual reproduction of trees, that forest biotechnology could be set back decades. His activism resulted in the formation of an Advisory Committee that consisted of representatives

We are alternatively pleased and frustrated with the pace of progress — so much to be done and so little time to do it.

from government, academe, industry, non-governmental organizations, business leaders and others. The major recommendation from that committee was

the formation of the Institute of Forest Biotechnology. Other steps followed such as the Charter Committee and the Founding Board of Directors, with the ultimate result being the current Board of Directors. We will be ever grateful to Steven Burke for his foresight and perseverance in seeing the need for IFB and then making it happen.

As we pick up momentum, IFB will prosper and society will benefit from the vision and hard work of a dedicated Board of Directors and its staff. The sky is the limit.

Robert C. Kellison, PhD
President
Institute of Forest Biotechnology

Program Activities

July 2003 – June 2004

Heritage Trees®

- Constitution of the Heritage Trees® Committee that is responsible for development of a Vision and Implementation Plan.
- A brochure outlining the Heritage Trees Program and its objective to engage diverse organizations, individuals and restoration partners to address ethical, technological, economic and ecological issues.
- Chestnut Group meetings, March 23, 2004, Research Triangle Park, N.C. and May 3, 2004, Asheville, N.C. to discuss application to a federal granting agency for an American chestnut genomics project.
- Attended *Restoration of Chestnut to forest lands within the national park system*, held May 4 – 6, 2004, Asheville, N.C.

Ecological Ramification

- Participation in *USDA APHIS Genetically Engineered Forest and Fruit Trees*, a public meeting at the USDA APHIS offices in Riverdale, Md., July 8 – 9, 2003. The meeting opened discussion of risk assessment criteria for genetically engineered trees. IFB and several Board Members gave statements at the meeting.
- Written response to USDA APHIS on the Notice of Intent to prepare an EIS on potential changes to APHIS regulations regarding the importation, interstate movement, and environmental release of certain genetically engineered organisms.

Societal Issues

- Hosted *Agricultural Biotechnology and Intellectual Property: a new framework* that was held June 3 – 4, 2004. This was the inaugural workshop of McGill University's Centre for Intellectual Property Policy's (CIPP) project *Legal Models of Biotechnological Intellectual Property Protections: A Transdisciplinary Approach*, of which Board Director Lori Knowles is a member and facilitator.

Outreach

- *XII World Forestry Congress*, (Participant and Exhibitor), Quebec City, Canada, September 22 – 26, 2003.
- *Biology and Borders: The Future of the Global Bio Economy*, (Participant and Sponsor), February 23 – 25, 2004 at the Nature Conservancy in Arlington, Va.
- *Biología Forestal Workshop*, (Organizer, Participant, and Proceedings Publisher), held during the *Global Biotechnology Forum*, March 3 – 5, 2004 in Concepción, Chile. See IFB website, www.forestbiotech.org.
- Summary paper of the *Biología Forestal Workshop*.

- *Genetically Modified Forests: From Stone Age to Biotechnology*, a collaborative publication with the Forest History Society.
- *New Century, New Trees: biotechnology as a tool for forestry in North America*, (Program Committee and Organizer), Research Triangle Park, N.C., November 16 – 17, 2004.
- The IFB newsletter, BioSylvan News, Vol 2, No 1, was published and distributed to a growing audience.

Cornerstone Accomplishments

Heritage Trees®

Heritage Trees® refers to trees that are threatened, endangered or have special value because of their historic or social benefit. American chestnut was identified as the species with highest priority for IFB's interests. Other species identified by IFB as top priorities are Fraser fir and European and American elms. Many other species, both here and abroad, are prime candidates for conservation and will be placed in queue for priority attention as the Heritage Trees program grows and develops.

A subcommittee of board members was assembled to map the strategy for Heritage Trees with special emphasis on restoration of American chestnut. It consisted of Al Lucier (chair), Kevan Gartland, Maud Hinchee and John Pait, with Ron Sederoff and Lori Knowles as *ex officio* members. That subcommittee produced a plan of work entitled *Heritage Trees® Program: Vision and Implementation Plan*. The document was synthesized into an illustrative brochure that is being used to engage collaborators and restoration partners to support the Heritage Trees cornerstone.

American Chestnut Project

The sub-committee retained the autonomy to include key personnel from outside the board to give counsel on matters of science, policy and funding. A gathering of scientists, brought together by IFB in March 2004, began the development of a plan of work for genetic mapping of quantitative trait loci (QTLs) in Chinese chestnut to identify the blight resistance genes. Included within that group were representatives from The American Chestnut Foundation (TACF), North Carolina State University, Pennsylvania State University, State University of NY at Syracuse, University of North Carolina at Chapel Hill, and USDA Forest Service. Interested parties from University of Georgia and Clemson University were unable to attend. A second meeting of that group convened in Asheville, N.C. in May 2004 to begin development of the plan of work, which will be submitted to a federal granting agency.

Restoration of Chestnut to Forest Lands

IFB participated in the workshop *Restoration of Chestnut to Forest Lands within the National Park System*. Hosted by the National Park Service, and organized by Drs. Kim Steiner and John Carlson, Pennsylvania State University, the workshop was held May 4 – 6, 2004 at the North Carolina Arboretum, Asheville, N.C. The majority of the participants were from the National Park Service and US Forest Service, but others were from state forest services, universities, foundations, and institutes. The first two days were devoted to presentations on all aspects of American chestnut, from its original distribution, its uses and its demise to the progress made in recovery of the species, from breeding programs to biotechnology. Some discussion centered on deployment of the recovered species and the legal issues associated with colonization of a species that might include foreign genes, either from a backcross hybridization program or from genetic engineering.

Intellectual Property Workshop

The Center for Intellectual Property Policy (CIPP), McGill University, Montreal, Canada held a workshop, *Agricultural Biotechnology and Intellectual Property: a New Framework* on June 3 – 4, 2004 that was hosted by IFB. This was the first in a series of workshops. The goal was to examine intellectual property rights relating to biotechnological innovation in the health and agricultural sectors. The research objectives of this program are to:

- Develop and disseminate three alternative legal models for the protection of health and agricultural biotechnology innovation.
- Develop and disseminate thorough and balanced critical analysis of the ethical, legal, management, political and economic facets of each of the legal models.
- Use a transdisciplinary methodology to arrive at legal models that integrate ethical, economic and legal perspectives.



PHOTO BY SUSAN MCCORD

IFB is host to a diverse group participating in the CIPP's Agricultural Biotechnology and Intellectual Property workshop. This international group discussed frameworks for shared intellectual property.

Thoughtful and innovative modes of shared intellectual property are of key importance to the Heritage Trees program and to many areas of forest biotechnology for public needs and therefore the subject of this conference was of great value to IFB.

Diverse organizations were represented: Center for Genome, Ethics, Law and Policy at Duke University, Organization for Economic Co-operation and Development (OECD), American Association for the Advancement of Science (AAAS), Hoover Institution, Sheffield Institute of Biotechnological Law and Ethics in

the United Kingdom, Canadian Biotechnology Advisory Committee, EMBRAPA of Brazil, Donald Danforth Plant Sciences Center and Resources for the Future. IFB board member Lori Knowles prepared a briefing paper that was sent to the participants prior to the workshop and outlined the project questions and goals. Attendees participated in breakout sessions and facilitated discussions, and heard lectures from members of the Intellectual Property Modeling Group. The workshop stimulated thoughtful output that will become part of a report when combined with the output of the other three workshops that are scheduled over the next several months.

Outreach

Enhancing the Southern Appalachian Forest Resource

A two-day educational outreach program, held October 2 – 3, 2003 in Hendersonville, N.C., with the objective of engaging economic, ecological and social principles and practices for the southern Appalachian forest. The IFB helped to sponsor this meeting and Bob Kellison participated as a speaker. A paper entitled “The Value of Biotechnology to Southern Appalachian Forests” was submitted for proceeding publication.

Biology and Borders: The Future of the Global Bio Economy

Bio Economic Research Associates (bio-era™), a leading provider of independent research and advisory services on the economic and societal impacts of human-induced change to biological systems, held a scoping conference entitled *Biology and Borders: The Future of the Global Bio Economy* on February 23 – 25, 2004 at The Nature Conservancy in Arlington, Va.

Forestry comprises one sector where biological systems and human impacts form borders; intellectual, physical and political. Some critical questions of the process will be: What is the bio economy? How will new genomic, proteomic, and metabolomic technologies transform the value chains in the bioresource industries? What are the possible outcomes of political conflicts over the use of GMOs? How will governments and other stakeholders respond to the growing spread of invasive weeds, insect pests, plant and animal diseases, and human pathogens? What are the economic and trade implications of changing species distributions over time in response to changes in land use, climate, or environmental disruption or depletion?

The IFB, along with The Nature Conservancy, was a sponsor for this meeting. The purpose of the meeting was to provide an opportunity for prospective participants to evaluate the process, meet other participating organizations and learn about key trends and driving forces. Dr. Floyd Bridgewater and Susan McCord represented the forestry sector.

Forest Biotechnology Workshop

IFB was a participant in the United Nations Industrial Development Organization’s (UNIDO) Global Biotechnology Forum held in Concepción, Chile on March 2 – 5, 2004. Announced attendance for that international affair was 1,100. Among the dignitaries addressing the delegates at the opening ceremony were Carlos Magariños, Director General — UNIDO, Néstor Kirchner, President — Argentina, and Ricardo Lagos, President — Chile.

A key component of the Forum was the Forest Biotechnology Workshop. Bob Kellison joined the Chilean team of Dr. Claudio Balocchi, Bioforest Ltd, and Drs. Sophia Valenzuela and Jaime Rodriguez, Faculties of Forest Sciences and Biochemistry, University of Concepción to form the forestry planning committee. Leading forest biotechnologists from around the world made presentations:

TITLE	AUTHOR	COUNTRY
<i>The Future of Forest Biotechnology (Keynote address)</i>	Mike Carson, Christian Walter, Sue Carson	New Zealand
<i>Operational Applications in Forestry</i>	John Pait	USA
<i>Aging, Maturation and Revigoration</i>	Roberto Rodriguez	Spain
<i>Genomics Applied to Eucalyptus: The Genolyptus Project</i>	Dario Grattapaglia	Brazil
<i>Molecular Markers & Certification</i>	Giancarlo Bounous, Roberto Botta	Italy
<i>Proteomics and Other Techniques</i>	Mathias Fladung	Germany
<i>Microarrays and Other Techniques</i>	Lyn Van Zyl	USA
<i>Introduction to GMOs and Biosafety in Forestry</i>	Claudio Balocchi, Sofia Valenzuela	Chile
<i>GM Populus and Biosafety</i>	Steve Strauss	USA
<i>GM Trees</i>	Maud Hinchee, Barbara Wells	USA
<i>Biotechnology Applied to Conservation and Insects and Diseases</i>	Kevan Gartland	Scotland
<i>Biotechnology Applied to Wood Properties</i>	Vincent Chiang	USA

An interactive audience of about 100 was in attendance at each of the three sessions. The follow-up to the meeting is a compilation of the papers into a bound copy, and an abstracted paper submitted to a forestry or biotechnology journal. The proceedings from the workshop are available from our website www.forestbiotech.org or in hard copy.

Genetically Modified Forests

In conjunction with the Forest History Society, IFB is collaborating with two world-renowned geneticists to write an account of the genetic improvement of forest trees. The publication will be a continuum of the Forest History Society Issues Series.

The authors of the publication, *Genetically Modified Forests: From Stone Age to Biotechnology*, are William J. Libby, Professor of Forest Genetics (retired), University of California, Berkeley, and Rowland Burdon, Scientist (retired), New Zealand Forest Research, Rotorua.

Advancing Regeneration Technologies for the Deployment of Elite Southern Pine Germplasm

IFB was an attendee of a conference on *Advancing Regeneration Technologies for the Deployment of Elite Southern Pine Germplasm* that was held at Jekyll Island, Georgia on June 22 – 24, 2004. The meeting, sponsored by the Information Exchange Group (IEG-40), covered topics ranging from deployment of planting stock from seed orchards to cutting-edge biotechnology. Following that two-day meeting, a 1.5-day session was organized by David Neale, USDA Forest Service and University of California, Davis, on the genomics of loblolly pine. The thesis of this session was that a genomics approach to describing and understanding the genetic and molecular basis of all biological processes controlling economically and ecologically relevant traits in pine is both feasible and desirable. Four working groups addressed issues relevant to the project: gene discovery, functional genomics, maps and markers, and genetic stocks and germplasm. In addition, an industrial working group, consisting of Maud Hinchee (ArborGen), Jim Rakestraw and Bob Purnell (International Paper), Phil Cannon (Boise), Fred Raley (Texas Forest Service) and Suzanne Bertrand (ArrayXpress) offered counsel on how that group could expedite, guide and assist the progress of the scientific community. IFB Board member Maud Hinchee was instrumental in organizing the industrial group and for making sure that forest industry's needs were being represented.

A committee to offer advice and counsel on the science of the project has been organized that consists of Dave Neale (Chair), and the five subcommittee chairs as members: Barry Goldfarb (NC State University), John Davis (University of Florida), C. Dana Nelson (USDA Forest Service), Jeffrey Dean (University of Georgia), and Maud Hinchee (ArborGen).

Targeted Activities

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New Century, New Trees

The third in a series of international conferences largely shaped by IFB, *New Century, New Trees: biotechnology as a tool for forestry in North America*, is on schedule for Nov. 16 – 17, 2004, Research Triangle Park, N.C. The two previous conferences were *Forest Biotechnology in Europe: Impending Barriers, Policies, and Implications*, Edinburgh, Scotland, September 2002 and *Forest Biotechnology in Latin America*, Concepción, Chile, March 2004. Proceedings from these conferences are available from our website at www.forestbiotech.org.

The Institute of Forest Biotechnology, Forest History Society, Pinchot Institute for Conservation, Resources for the Future and Purdue University are offering a conference directed to the status of and opportunities for the application and use of forest biotechnology in North America, including target areas for research and how societal and regulatory issues need to be addressed.

An outstanding program has been assembled with speakers from all parts of

the United States and Canada. Topics to be covered include the status of biotechnology in North America, the economic benefits and costs of biotechnology, social and regulatory issues of biotechnology, and areas of innovation in the rapidly evolving science of forest biotechnology.

In conjunction with the conference, a seminar series is being given at NC State University, College of Natural Resources to engage both graduate and undergraduate students, who are our future scientists and policy makers. The invited lecturer is Dr. Risto Seppälä, President of the International Union of Forest Research Organizations (IUFRO) and Professor, Finnish Forest Research Institute (METLA).



NEW CENTURY, NEW TREES Biotechnology as a Tool for Forestry in North America

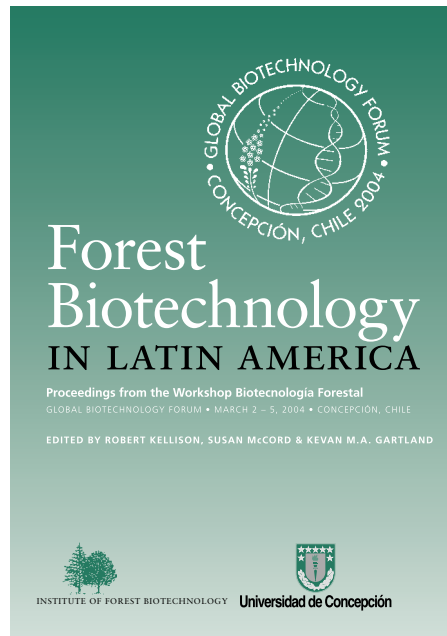
IUFRO Division 2 Conference

The IUFRO Joint Conference of Division 2 (tree breeding and genetic resource management) will be held at Charleston, SC on November 1 – 5, 2004. The conference, *Forest Genetics and Tree Breeding in the Age of Genomics: Progress and Future*, will bring together geneticists, breeders, applied and basic scientists, managers and professional foresters from all parts of the world to exchange information on the old and the new aspects of forest genetics.

A significant part of the conference will address biotechnology and genomics. Even though the concept is not new, significant attention will be given to clonal forestry. IFB has been designated to organize a concurrent session on *Social Aspects of Clonal Forestry*. A good program has been organized with speakers from New Zealand, South Africa, Canada, China, Scotland and United States.

2004 Publications

- Kellison, R.C., Susan McCord and Steven Strauss. 2004. *Modifying Reproduction in Urban Trees and Shrubs*. (In preparation).
- Kellison, R., C. Balocchi, S. Valenzuela and J. Rodriguez. 2004. *Forest Biotechnology: A Coming Science*. (In preparation).
- Libby, William J. and Rowland Burdon. 2004. *Genetically Modified Forests: From Stone Age to Modern Biotechnology*. (In preparation).
- Kellison, R. C. and Susan McCord. 2005. *Forest Biotechnology: Trees of Our Future*. (Submitted to International Journal of Biotechnology).
- Kellison, Robert, Susan McCord and Kevan MA Gartland. (Eds.). 2004. *Forest Biotechnology in Latin America*. pp126.



Administration

Additions to the Board

As its Bylaws and philosophy convey, the IFB Board of Directors consists of representatives in equal proportion from three main sectors: academia/governmental organizations, non-governmental/public interest organizations, and industry. The methodical movement toward filling the 19-member board proved successful in 2004. A Board of Directors Nominating Committee consisting of Lori Knowles, Steven Burke, Dennis Le Master and Ken Munson led the affirmation of four new significant board members: Noah Pickus (Kenan Institute for Ethics), Roger Sedjo (Resources for the Future), George W. Weyerhaeuser, Jr. (Weyerhaeuser Company) and Wayne Barfield (MeadWestvaco).

Development

IFB is investing in development consultants and is continuing plans for 2005 in this area.

Movement to a New Site

IFB has operated for three years at the North Carolina Biotechnology Center on a Memorandum of Understanding (MOU) for space and support services. However maturation and expansion of IFB has required independent quarters. Strong and helpful support were offered by Centennial Campus at NC State University. Centennial Campus is a 1000 acre advanced technology community for university, industry, and government partners. The campus is home to more than 100 large and small companies, government agencies and NC State units.

IFB will be locating to our new offices in December 2004 and will begin operating from there on January 1, 2005. Our new contact information is:

Institute of Forest Biotechnology
920 Main Campus Drive, Suite 101
Raleigh, N.C. 27606
919-424-4461
www.forestbiotech.org

Financial Summary

Independent Auditor's Report

To the Board of Directors of
The Institute of Forest Biotechnology
Research Triangle Park, North Carolina

We have audited the accompanying statements of financial position of The Institute of Forest Biotechnology as of June 30, 2004 and 2003, and the related statements of activities, functional expenses and cash flows for the year then ended. These financial statements are the responsibility of the management of The Institute of Forest Biotechnology. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit 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 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 Institute's internal control over financial reporting. Accordingly, we express no such opinion. An audit also includes examining, on a test basis, evidence supporting the amounts of 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 audit provides a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of The Institute of Forest Biotechnology as of June 30, 2004 and 2003, and the changes in net assets and its cash flows for the year then ended in conformity with generally accepted accounting principles in the United States of America.

August 18, 2004

Perkins + Lund, PLLC

Statement of Financial Position

June 30, 2004 and 2003

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ASSETS

	<u>2004</u>	<u>2003</u>
Current Assets		
Cash	\$124,284	\$99,583
Fixed Assets		
Computer equipment	3,512	3,512
Less: Accumulated depreciation	<u>1,406</u>	<u>703</u>
	<u>2,106</u>	<u>2,809</u>
	\$126,390	\$102,392

LIABILITIES AND NET ASSETS

Current Liabilities

Accounts payable	\$513	\$8,385
Accounts payable — other	808	—
Pension plan payable	<u>—</u>	<u>148</u>
	<u>1,321</u>	<u>8,533</u>

Net Assets

Unrestricted, available for general activities	91,697	93,859
Temporarily restricted	<u>33,372</u>	<u>—</u>
	<u>125,069</u>	<u>93,859</u>
	\$126,390	\$102,392

See accompanying notes to financial statements

Statement of Activities

For the Years Ended June 30, 2004 and 2003

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Unrestricted Net Assets

	<u>2004</u>	<u>2003</u>
Support and Revenue:		
Contributions	\$297,000	\$145,000
Other	315	—
Net assets released from restrictions	<u>32,000</u>	<u>52,000</u>
	<u>329,315</u>	<u>197,000</u>
Expenses		
Program services — Heritage Trees	83,581	92,548
Program services — Ecological Risk	37,816	45,572
Program services — Outreach	59,705	42,650
Program services — Societal Issues	32,209	28,100
Administrative	25,256	25,080
Management and general	64,853	50,310
Fundraising	<u>28,057</u>	<u>8,781</u>
	<u>331,477</u>	<u>293,041</u>
Net decrease in unrestricted net assets	(2,162)	(96,041)
Temporarily Restricted Net Assets		
Contributions	65,372	52,000
Net assets released from restrictions	<u>(32,000)</u>	<u>(52,000)</u>
Net increase in temporarily restricted net assets	<u>33,372</u>	<u>0</u>
Net Increase (Decrease) in Net Assets	31,210	(96,041)
Net Assets at Beginning of Year	<u>93,859</u>	<u>189,900</u>
Net Assets at End of Year	<u><u>\$125,069</u></u>	<u><u>\$93,859</u></u>

See accompanying notes to financial statements

Statement of Cash Flows

For the Years Ended June 30, 2004 and 2003

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	<u>2004</u>	<u>2003</u>
CASH FLOWS FROM OPERATING ACTIVITIES		
Increase (decrease) in net assets	\$31,210	\$(96,041)
Adjustments to reconcile Change in Net Assets to Net		
Cash provided by operating activities:		
Depreciation expense	703	702
Decrease in operating assets:		
Accounts Receivable	—	50,000
Increase (decrease) in operating liabilities:		
Accounts payable	(7,872)	(203)
Accounts payable — other	808	8,385
Pension plan payable	(148)	148
Net cash provided (used) in operating activities	<u>24,701</u>	<u>(37,009)</u>
CASH FLOWS FROM INVESTING ACTIVITIES		
Purchase of fixed assets	—	(826)
Net cash used in investing activities	<u>—</u>	<u>(826)</u>
Net increase (decrease) in cash	24,701	(37,835)
Cash at beginning of year	<u>99,583</u>	<u>137,418</u>
Cash at end of year	<u>\$124,284</u>	<u>\$99,583</u>

See accompanying notes to financial statements

Notes to Financial Statements

For the Years Ended June 30, 2004 and 2003

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Note 1 — Nature of Organization and Significant Accounting Policies

Nature Of Organization — In October of 2000, The Institute of Forest Biotechnology (“Institute”) was incorporated in Raleigh, North Carolina as a private nonprofit, nonpartisan organization for the purpose of working for societal, ecological and economic benefits from appropriate uses of biotechnology in forestry worldwide. This is done through programs and fora addressing issues, stimulating understanding, and convening diverse parties attentive to forest biotechnology. The Institute’s support comes mainly from donor contributions.

Programs — The Institute has the following programs on which the Institute is built:

The Heritage Trees Program provides for the development and facilitation of public-private-non- governmental partnerships to regain or preserve threatened tree species of cultural, ecological or economic significance.

The Ecological Ramifications Program determines the ecological risk associated with successful incorporation of biotechnology in forestry.

The Societal Issues Program identifies the social, cultural and ethical issues at stake in the application of biotechnology to trees and forests.

The Outreach Program fosters education through communication of the science fundamentals of forest biotechnology, its benefits to society, the environment and the economy.

Basis of Presentation — Financial statement presentation follows the recommendations of the Financial Accounting Standards Board in its Statement of Financial Accounting Standards (SFAS) No. 117, Financial Statements of Not-for-Profit Organizations. Under SFAS NO. 117, the organization is required to report information regarding its financial position and activities according to three classes of net assets: unrestricted net assets, temporarily restricted net assets, and permanently restricted net assets.

Basis Of Accounting — The accompanying financial statements of the Institute have been prepared on the accrual basis of accounting in accordance with generally accepted accounting principles in the United States of America.

Estimates — The preparation of financial statements in conformity with generally accepted accounting principles in the United States of America requires management to make estimates and assumptions that affect certain reported amounts and disclosures. Accordingly, actual results could differ from those estimates.

Contributions & Grants — All contributions and grants are considered to be available for unrestricted use unless specifically restricted by the donor. Amounts received that are designated for future periods or restricted by the donor for specified purposes are reported as temporarily restricted or permanently restricted support that increases those net asset classes. When temporary restrictions expire, temporarily restricted net assets become unrestricted net assets and are reported in the statement of activities as net assets released from restrictions.

Cash and Cash Equivalents — Cash and Cash Equivalents include all monies in banks and highly liquid investments with maturity dates of less than three months. The carrying value of cash and cash equivalents approximates fair value because of the short maturities of those financial instruments.

Property and Equipment — Property and equipment are recorded at cost when purchased and fair value when donated. Major additions or betterments are charged to the property accounts while replacements, maintenance and repairs are generally charged to expense as incurred. Acquisitions of property and equipment in excess of \$500 are capitalized.

Depreciation expense is calculated using the straight-line method over the useful lives of the assets as follows:

Computer equipment	5 years
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Income Taxes — the Institute is exempt from Federal income taxes under Section 501 (c)(3) of the Internal Revenue Code.

Functional Expenses — Expenses are charged directly to program or management in general categories based on specific identification. Indirect expenses have been allocated based on analysis of personnel time utilized for the related activity.

Note 2 — Commitments and Contingencies

Pension Plan — The Institute has adopted a pension plan using TIAA-CREF as the carrier for the base plan. The plan provides that the Institute will match employee contributions dollar for dollar up to 5.0% of eligible wages. An accrual has been made for the unpaid portion of the expense.

Memorandum of Understanding — The Institute conducts its operations from facilities that are a part of the North Carolina Biotechnology Center which was organized for the purpose of coordinating and stimulating research in biotechnology in North Carolina. In a noncancelable agreement for the year ended June 30, 2004 rent expense was \$36,000. This agreement allows for the use of capital equipment (e.g. computers and furniture) and facilities by the Institute. The agreement expires on December 31, 2004.

Future minimum lease payments for the period July 31 through December 31, 2004 are \$2,000 per month. On January 1, 2005 the Organization will begin a lease for office space at the Centennial Campus of North Carolina State University. The rent per month has been quoted at \$425 per office. Four offices will likely be rented. A lease has not been signed as of the issuance of these financial statements.

Note 3 — Subsequent Events

The Institute was awarded a federal assistance award on August 10, 2004 by the United States Department of Agriculture Forest Service. The grant is for \$1 0,000 and has a starting date of August 1, 2004 and ending date of November 30, 2004. The federal grant award of \$1 0,000 is made under the terms of, The Forest and Rangeland Renewable Resources Act of 1978, P.L. 95-307 Sec 3. The award is to be used for the North American

Conference held on November 16–17, 2004 in the Research Triangle Park, North Carolina. The title of the Conference is “New Century, New Trees: Biotechnology as a tool for forestry in North America”.

In June 2004 The Institute was awarded a federal assistance award by the United States Department of Agriculture Forest Service. The grant is for \$70,000 and has a starting date of May 1, 2004 and an ending date of April 30, 2005. The federal grant award of \$70,000 is made under the terms of, The Forest and Rangeland Renewable Resources Act of 1978, as amended, Public Law 95-307.

The award is to be used to support the Heritage Trees initiative. The award will reimburse expenses associated with the Heritage Trees programs. Since no award money was available for the year ended June 30, 2004 a receivable was not recorded.

Note 4 — Accounts Payable — Credit Card

The Institute has one VISA credit card with BB&T. The credit limit for the card is \$15,000 with an annual interest rate of 10.15% for purchases and 19.90% for cash. The minimum monthly payments must be at least 2.0% of the outstanding balance or \$20, whichever is greater. The outstanding balance may be demanded due in full if the Institute defaults on any portion of the credit agreement. The outstanding balance at June 30, 2004 is \$423.94.

Note 5 — Restrictions On Net Assets

Temporarily restricted net assets were received for the following purposes:

	2004	2003
Chestnut Transformation — Dr. Scott Merkel at the University of Georgia	\$ —	50,000
Expenses related to the educational booklet written by the Forest History Society	5,000	—
Expenses related to “Modifying Reproduction in Urban Trees” meeting	10,000	—
Expenses related to the educational booklet written by the Forest History Society	2,000	—
Support to the Heritage Trees Program	15,000	—
Expenses related to the workshop “Agricultural Biotechnology and Intellectual Property: A new framework	33,372	—
	<u>\$65,372</u>	<u>52,000</u>

All temporarily restricted net assets, except for the \$33,372 related to the workshop “Agricultural Biotechnology and Intellectual Property: A new framework” were released from restrictions during the year ended June 30, 2004.

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The Institute would like to extend a special thanks to those individuals and organizations with the foresight and generosity to support the IFB in its programs, enabling growth, establishing credibility, and to move its mission forward.

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