# BOSTON BIOMEDICAL RESEARCH INSTITUTE

ANNUAL REPORT 2000

THE BOSTON BIOMEDICAL RESEARCH INSTITUTE (BBRI) IS DEDICATED TO BASIC BIOMEDICAL RESEARCH TO PROMOTE THE UNDERSTANDING, TREATMENT AND PREVENTION OF SPECIFIC HUMAN DISEASES. THE AREAS OF INVESTIGATION CONCERN THE STRUCTURE AND FUNCTION OF MUSCLE PROTEINS, MECHANISMS OF CELL COMMUNICATION, AND THE CONTROL OF CELL GROWTH AND GENE FUNCTION. A MAJOR FOCUS IS MUSCLE CELL BIOLOGY WHICH HAS IMPLICATIONS FOR MUSCLE-RELATED DISEASES SUCH AS ASTHMA, STROKE, AND HEART FAILURE. WHEN APPROPRIATE, THE INSTITUTE COLLABORATES IN CLINICAL STUDIES OF PATIENTS TO APPLY THE RESULTS OF BASIC RESEARCH TO PROBLEMS OF HUMAN HEALTH AND THE CURE OF DISEASE. BBRI IS AN INDEPENDENT, NOT-FOR-PROFIT INSTITUTION.

# MESSAGE FROM THE DIRECTOR

KATHLEEN G. MORGAN, PH.D.

We have arrived! As is documented in this Annual Report, over the last sixteen months we have chosen a new location for the Institute, sold our lease with SERI, issued BBRI bonds to finance the project, completely renovated an old cookie factory into a state-of-the-art research facility and moved our entire staff and equipment to 64 Grove Street in Watertown! The benefits of these changes will continue to emerge as time goes on, but we have clearly taken a giant step forward.

The move in 1962 of the Retina Foundation into the 20 Staniford Street building was four years of planning, construction and implementation. It is a marvelous testimony to the teamwork between our scientific and administrative staffs and our Board of Trustees and Corporators that our current relocation efforts were completed in less than half this time.

We have moved from 38,000 to 60,000 square feet of truly state-of-the-art space. The 20 Staniford Street building served us well, but after thirty-eight years, its infrastructure was definitely showing its age. It is a delight to now have epoxy lab benches and adequate ventilation for the X-Ray equipment in the crystallography facility—and to have air conditioning that can cope with 90°F temperatures outside!

Additionally, all investigators now have the opportunity to expand their own research programs and personnel in a way that was not possible in the old building. Many discussions are now going on regarding new opportunities for expanding our postdoctoral training programs, and hence the size of each laboratory's scientific staff. There are also ideas germinating regarding enhanced alliances and interactions with area graduate training programs. And, most encouragingly, we have the space to continue our aggressive faculty recruitment program that is a cornerstone of our strategic plan.

To ensure that we maximize the potential of this new facility, we aim to increase philanthropic support through a major fundraising effort, *A Campaign for BBRI: Intellectual Partners for the Future of Science*. It is very rewarding to see the generous support pledged so far in the leadership phase of the campaign - thank you!

During the last year, the search committee—chaired by Henry Paulus and including Phil Graceffa, Janet Smith, Michael Sherman and myself—has been successful in recruiting two outstanding young cancer biologists, Peter Erhardt and Steen Hansen, who are profiled in this report. They complement the efforts of Lynne Coluccio, Michael Sherman, Paul Leavis, and Andrew Bohm, bringing the Institute to critical mass in this research area, one of our three overlapping areas of scientific focus: motility, signal transduction and regulation of cell growth. The third focus area is much broader than just cancer biology, but it will be exciting over the coming years to see how these investigators use their special interest in the growth of cancer cells to capitalize on the fundamental discoveries being made at the Institute.

We have incorporated into the design of the building elements that reflect and enhance the collaborative, collegial environment that has always characterized the Institute. Our "open lab design" continues the longtime tradition of BBRI to have as few walls as possible between laboratory areas. This design greatly facilitates access to shared scientific equipment and promotes the free flow of ideas across theoretical laboratory boundaries. The new building also has a number of small conference rooms for small group meetings and "media/coffee" centers for informal discussions.

Now that BBRI "owns its own home" there is a tangibly stronger sense of identity for the Institute. We have had an outstanding research seminar program this year (organized by Roberto Dominguez) and many of our outside speakers have marveled at the quality of scientific activity and interaction at the new Institute.

As always, I invite any of you to visit our new home and tour the new laboratories.

# MESSAGE FROM THE PRESIDENT

DAVID A. GIBBS, SC.D.

It has been another very productive and successful year at BBRI - we have made an historic move into our own research home in Watertown!

It was in mid-1998 that the outline of a tremendous opportunity started to take shape as we negotiated the sale of our remaining lease at 20 Staniford Street to the Schepens Eye Research Institute (SERI). It was not until mid-October 1998 that an agreement was signed for the sale of our lease to SERI for $8.4 million, with the understanding that we would vacate the premises by the end of February 2000.

During the negotiations with SERI, the officers and faculty of BBRI began searching for a site. By August 1998 we had focused on 64 Grove Street in Watertown, a rather dilapidated 100,000 sq. ft. factory building which once housed the Golden Cookie Bakery! To our eye the building offered adequate space, high ceilings through which we could run the infrastructure necessary for modern scientific equipment, and . . .location, location, location. We are still just a short distance from all of the Boston and Cambridge academic centers with whom our scientists interact and collaborate.

To finance the project on such short notice, we could not conduct a traditional major fundraising campaign, so we needed to secure alternative financing. A joint Board/faculty construction finance committee oversaw the research, negotiation and sale of $17 million in tax-exempt bonds in February 1999 at the rate of 5.75%. For this sale we received an investment grade rating from both Moody's and Standard & Poor's. Another joint Board/faculty committee focused on the construction of the new facility. DTS Shaw Architects and Siena Construction Co. were selected for their experience in designing and constructing research facilities and their commitment to our deadline.

In mid-January 1999 we purchased 64 Grove Street and through the excellent cooperation of the Town of Watertown, received building permits and variances. Effectively, we had twelve months remaining to build the facility and move in. Not unexpectedly, many unforeseen complications were overcome during the demolition of part of the building and securing the infrastructure of the existing building.

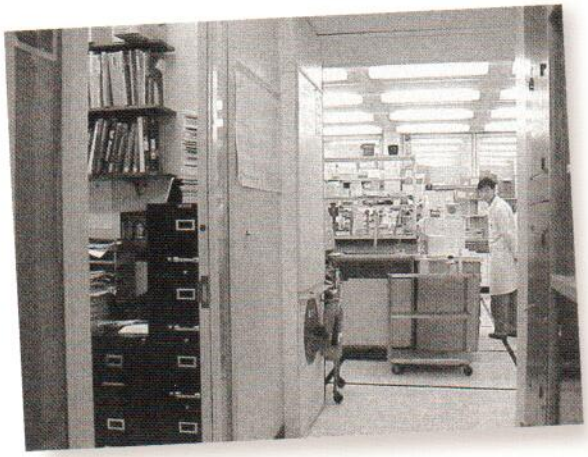
The fact that we located, financed, built and moved into the new facility within sixteen months is quite remarkable. It is an achievement underpinned by the "cooperativity" throughout the BBRI family, which I referred to in last year's report, and a tremendous amount of hard work to complete major tasks against very tight deadlines!! Much has been achieved, but there remains so much more to be done. We have a superb new research home that offers outstanding opportunities for our existing research programs to flourish and new research programs to begin, but to do this we must raise the level of philanthropic support for BBRI through our current fund drive, *A Campaign for BBRI: Intellectual Partners for the Future of Science*.

I urge each and every one of you to come and take a private tour of our new facility and to respond as generously as possible to our largest fundraising effort ever at BBRI!

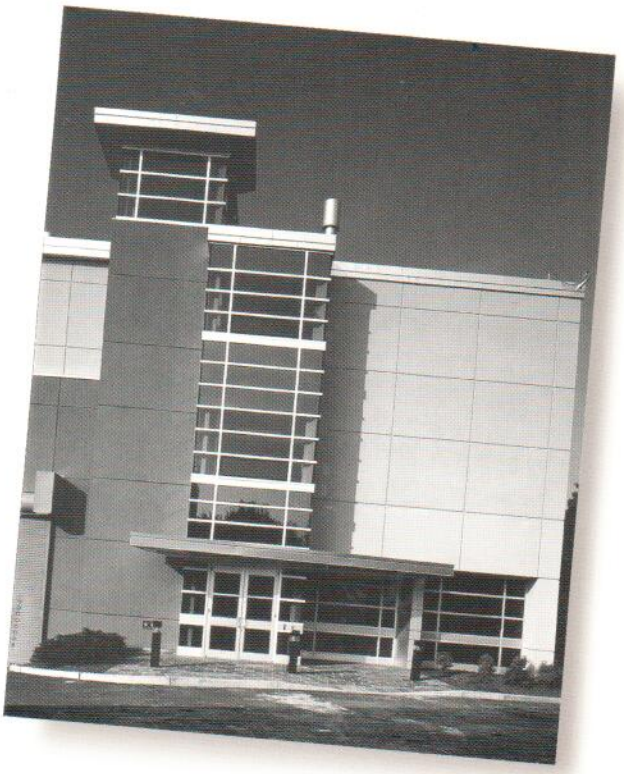
# THE ROAD TO GROVE STREET

20 STANIFORD STREET, BOSTON: BBRI'S HOME FROM ITS FOUNDING IN 1968 UNTIL FEBRUARY 2000.

A LABORATORY AT STANIFORD STREET. THE INSTITUTE'S GREAT NEED FOR ADDITIONAL SPACE AND MODERNIZED LABORATORIES PROMPTED THE RELOCATION.



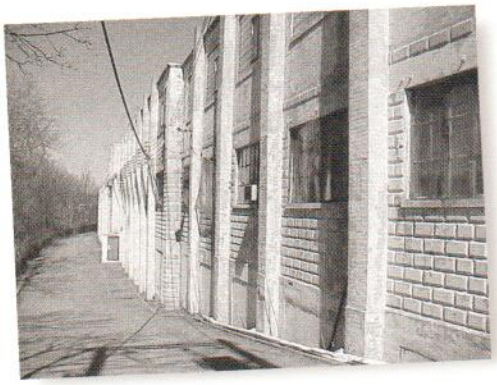
BBRI'S NEW RESEARCH HOME AT 64 GROVE STREET IN WATERTOWN.



THE STATE-OF-THE-ART LABORATORIES AT BBRI'S NEW 60,000 SQ. FT. FACILITY ENCOURAGE COLLABORATION THROUGH AN 'OPEN LAB' LAYOUT AND SHARED EQUIPMENT FACILITIES. BBRI INCORPORATED 'FUTURE LAB' SPACE INTO THE BUILDING DESIGN TO ACCOMMODATE ONGOING GROWTH.

# THE MAKING OF A

BEFORE: APRIL 5, 1999. A VIEW OF THE NORTH SIDE OF 64 GROVE STREET JUST BEFORE THE DEMOLITION BEGAN. IN TEN MONTHS, BBRI TRANSFORMED THIS OLD FACTORY BUILDING THAT ONCE HOUSED WATERTOWN'S LEGENDARY GOLDEN COOKIE BAKERY INTO A STATE-OF-THE ART SCIENTIFIC RESEARCH FACILITY. A SERIES OF CHIMNEYS FROM THE OLD COOKIE OVENS ARE VISIBLE ALONG THIS NORTH-FACING WALL.



APRIL 16, 1999. AFTER THE GOLDEN COOKIE BAKERY'S DEMISE, 64 GROVE STREET MOST RECENTLY HOUSED A FURNITURE FACTORY. HERE, DESTRUCTION OF THE FACTORY SHOWROOMS MAKES WAY FOR CONSTRUCTION OF NEW LABORATORIES ON THE BUILDING'S SECOND FLOOR.

MAY 28, 1999. DEMOLITION IS UNDERWAY. 40,000 OF THE BUILDING'S 100,000 ORIGINAL SQUARE FOOTAGE WERE DEMOLISHED TO CREATE A 65-SPACE PARKING LOT FOR BBRI'S STAFF AND VISITORS.

OCTOBER 1, 1999. RECONSTRUCTION OF THE THIRD FLOOR WALL ABOVE THE GROVE STREET ENTRANCE.

## FROM BOSTON TO WATERTOWN . . .

OCTOBER15, 1998
BBRI AGREES TO SELL ITS LEASEHOLD AT 20 STANIFORD STREET TO THE SCHEPENS EYE RESEARCH INSTITUTE

FEBRUARY 1, 1999
BBRI SUCESSFULLY SELLS $17 MILLION IN TAX-EXEMPT BONDS

MAY 14, 1999
GROUNDBREAKING CEREMONY AT 64 GROVE STREET


JANUARY 16, 1999
PURCHASE OF THE GROVE STREET PROPERTY

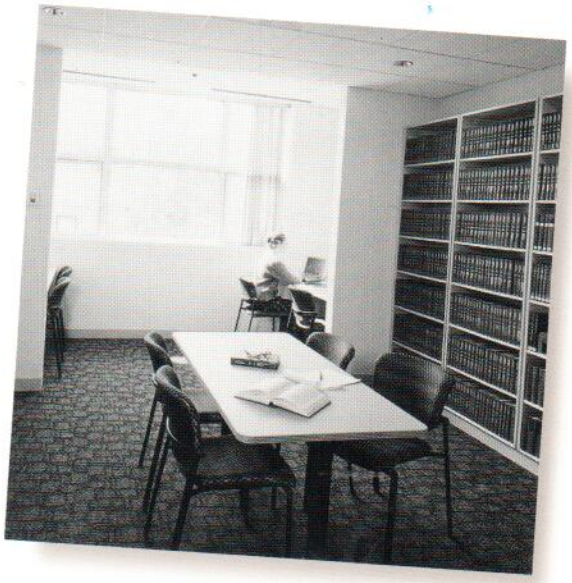


APRIL 1999
DEMOLITION BEGINS

# LABORATORY

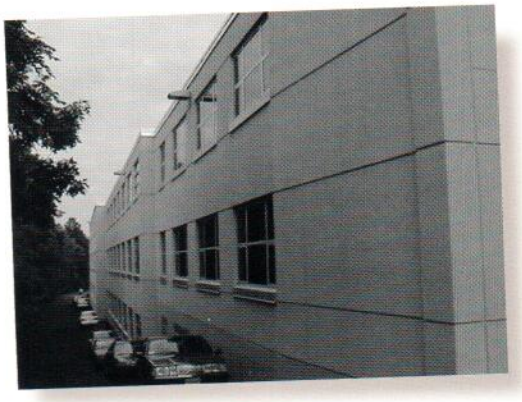
FEBRUARY 12, 2000. NEARING COMPLETION: A VIEW OF THE THIRD FLOOR LABORATORIES LOOKING EAST, FOUR DAYS BEFORE BBRI'S SCHEDULED MOVE FROM STANIFORD STREET.

BBRI'S LIBRARY, WHICH OFFERS THE STAFF ON-LINE ACCESS TO SCIENTIFIC JOURNALS, MICROFILM ARCHIVES AND A QUIET PLACE FOR RESEARCH AND WRITING.



MAY 15, 2000. THE DAY BEFORE THE GRAND OPENING. BRUSHED STEEL AND LIGHT OAK ACCENT THE ANGULAR SHAPE OF BBRI'S NEW LOBBY DESIGN BY DTS SHAW ARCHITECTS, MEANT TO PROVIDE A LINK BETWEEN THE BUILDING'S PAST AND THE FUTURE.

AFTER: SEPTEMBER 2000. THE FINISHED PRODUCT: A VIEW OF THE COMPLETED BUILDING'S NORTH SIDE.



## BUILDING A SCIENTIFIC INSTITUTE

JUNE 1999
CONSTRUCTION BEGINS WITH REINFORCEMENT OF BUILDINGS, STEEL BEAMS, PILLARS AND FOUNDATION



JANUARY-FEBRUARY 2000
INTERIOR CONSTRUCTION COMPLETED



MAY 16, 2000
BBRI CELEBRATES GRAND OPENING WITH 230 FRIENDS AND SUPPORTERS



DECEMBER 1999
CLOSURE OF BUILDING - ROOF AND WINDOWS INSTALLED, POWER AND HEAT IN PLACE

FEBRUARY 16-28, 2000
BBRI MOVES INTO ITS NEW HOME IN WATERTOWN

# Two New Scientists Join BBRI Faculty

DR. PETER ERHARDT AND DR. STEEN HANSEN, BOTH M.D.-PH.D.S, WERE RECENTLY APPOINTED AS MEMBERS OF THE FACULTY AT BBRI. WITH EXPERTISE IN SIGNAL TRANSDUCTION AND CELL GROWTH, THE NEW SCIENTISTS' RESEARCH INTERESTS FIT WELL INTO THE INSTITUTE'S THREE OVERLAPPING AREAS OF STUDY—MOTILITY, SIGNAL TRANSDUCTION, AND REGULATION OF CELL GROWTH. THEY JOIN DRS. MICHAEL SHERMAN, PAUL LEAVIS, LYNNE COLUCCIO AND ANDREW BOHM IN A GROWING GROUP OF CANCER BIOLOGISTS AT BBRI.

## Steen H. Hansen, M.D., D.M.Sc. (Ph.D.)

Dr. Steen Hansen comes to BBRI from a postdoctoral fellowship at the University of San Francisco Cancer Research Center. He received his M.D. and Ph.D. from University of Copenhagen, where he also completed his medical internship. Steen also had been a postdoctoral fellow in the Department of Pediatrics at Mass. General Hospital, Harvard University and was a recipient of the prestigious Weimann Foundation Senior Research Fellowship.

Steen's research focuses on understanding the series of events that cause normal epithelial cells to mutate into malignant cells. Most of our internal organs are made up of polarized epithelial cells, which can undergo mutations to give rise to malignant tumors called adenocarcinomas. More than 80% of lethal cancers that afflict humans are adenocarcinomas. Among these are colon and pancreatic cancers, of which up to 70% are associated with mutations in a signaling protein called Ras. Specifically, Steen is investigating the mechanisms by which Ras transmits signals that cause changes in the behavior of polarized epithelial cells that mimic alterations that occur in early stages of adenocarcinomas. As a postdoctoral fellow, Steen discovered that Ras activation results in the induction of another signaling protein, Rnd3, which may play a role in the transformation of normal epithelial cells to adenocarcinomas. Such knowledge is important, as it is likely to identify possible cellular targets for early diagnosis and therapeutic intervention of malignant tumors.

## Peter Erhardt, M.D., Ph.D.

Dr. Peter Erhardt completed his postdoctoral training in the Department of Molecular Genetics at Dana-Farber Cancer Institute, Harvard Medical School, where he published ten papers in highly recognized journals, and comes to BBRI from a transitional research assistant professorship at Boston University. He received his M.D. and Ph.D. from the Medical School of Pecs in Hungary, where he also completed his medical residencies.

Peter is a signal transduction expert with research interests in programmed cell death, or apoptosis. Specifically, his research focuses on the mechanism of apoptosis and how growth factors prevent cell death by activating survival pathways. Apoptosis is a highly regulated process that eliminates unwanted cells during development as well as cells damaged by external factors. The death of cells by apoptosis is thought to contribute to the disease of heart failure. Conversely, suppression of apoptosis contributes to the uncontrolled growth of cancer cells. Peter is studying the role of certain proteins that either block or modulate apoptosis. For example, he has discovered that the protein B-Raf kinase plays an important role in blocking cell death at a late stage of apoptosis. This discovery may provide a unique opportunity for treating diseases associated with apoptotic cell death, such as cardiac ischemia. Peter is pursuing a new technique for studying B-Raf that may lead to the development of new therapies for ischemic heart disease. A second project involves the study of the protein MDM2 and its role as an inhibitor of the tumor suppressor p53, in an effort to seek new therapies useful in the treatment of certain cancers.

# Development Report

ALLIE BLODGETT

Momentum is building in the development effort at BBRI after a very productive year of fundraising. Through the generosity of our supporters and the dedicated work of the Development Committee and the Development Office, we succeeded in reaching our Annual Fund goal of $425,000. We're happy to report that the average gift to this year's drive increased by 10%. This wonderful support, totaling $428,000, is invaluable to the ongoing success of BBRI's basic research programs.

With sound guidance from the Public Relations Committee, on May 16th BBRI's development team orchestrated a very successful Grand Opening Celebration at the Institute's new research home in Watertown. Over 230 friends and supporters joined us for this very special evening, including leaders from the local community, and many friends new to the Institute. The highlight of the evening was a keynote address from renowned cancer researcher, Dr. Judah Folkman of Children's Hospital and Harvard Medical School.

Last year at this time, we were in the planning stages of BBRI's first major capital fund drive. Today, this effort is making good progress with significant leadership support from close friends and importantly, some new friends. *A Campaign for BBRI: Intellectual Partners for the Future of Science* is our most ambitious fundraising effort to date. It is a comprehensive campaign that aims to enlarge BBRI's scientific staff, expand the postdoctoral fellows program, form a Pilot Fund for innovative scientific projects, and provide resources for scientific equipment, unfinished lab space and educational outreach programs for local students.

*A Campaign for BBRI: Intellectual Partners for the Future of Science* takes its name from remarks made by BBRI's founder, Dr. Endre Balazs, at the 1999 Annual Meeting. In his address, Dr. Balazs urged us to join scientists in the effort to communicate to a wider public the fast-paced discoveries that are continually taking place in the scientific field. As he said that evening:

> "People ask me, 'Why should I support basic science?' I believe you should support it because you are in an intellectual relationship. You want to know more about the human body, health and disease, and that's what your contribution is: creating and maintaining this partnership, this intellectual partnership. We need you, because you are our contact with the lay public around us, the bankers, the businessmen, the lawyers and people in this room. On this partnership we'll build the funds that we need."

I'd like to take this opportunity to personally thank all of you for helping make my four years as Chair of the Development Committee a valuable and enjoyable experience. I will pass the responsibility of Development Chair to Jake Layton, one of the most personable, intelligent and committed young men I've been fortunate enough to work with. My next task will be to seek new friends for the Institute. Together Jake and I have ambitious goals for the future growth of BBRI.

Many thanks to our Trustees, Corporators, and all of you for recognizing the importance of basic research to human health and the cure of disease. Finally, my very special thanks to members of the Development Committee: Tony Cabot, David Crockett, Jillian Darling, Tom Eddy, Greg Getschow, David Gibbs, Charlie Ives, Pat Jackson, Jake Layton, Kathleen Morgan, Henry Paulus, Janie Stephenson, Ginny Sullivan, Bill Tyler and Simon Welsby.

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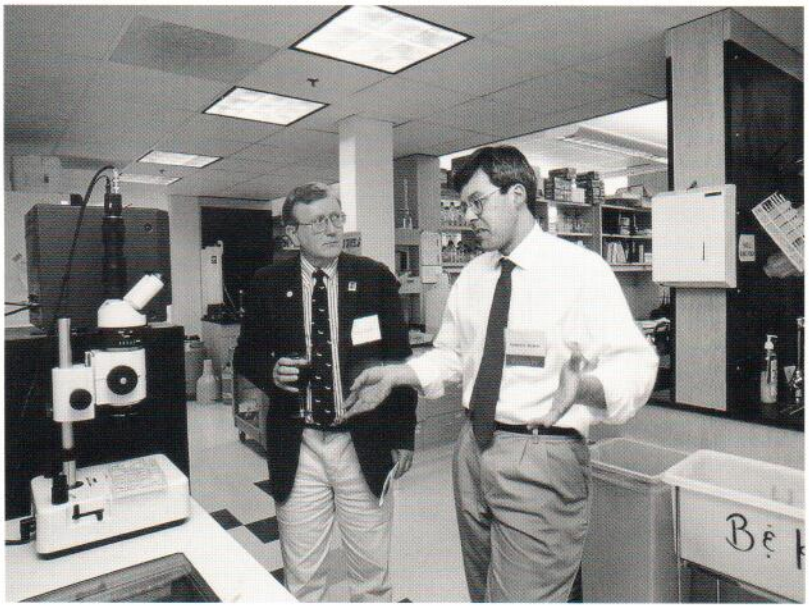
From left: Anngie Tyler, Christopher Rogers, and BBRI Overseer William Tyler at BBRI's Grand Opening celebration in May.

TOP-FROM LEFT: BBRI PRESIDENT DR. DAVID GIBBS, BBRI CHAIR MR. JOHN B. FRENCH, KEYNOTE SPEAKER DR. JUDAH FOLKMAN, TRUSTEE DR. ELKAN BLOUT, AND BBRI DIRECTOR DR. KATHLEEN MORGAN AT THE GRAND OPENING.

MIDDLE-FROM LEFT: TRUSTEES GEOFF NUNES AND ALLIE BLODGETT WITH CAROLE BENNING.

BOTTOM-FROM LEFT: MR. GEORGE BUCKLEY, SCIENCE CURRICULUM COORDINATOR FOR WATERTOWN PUBLIC SCHOOLS, OBSERVES A DEMONSTRATION IN DR. ANDREW BOHM'S LABORATORY AT THE GRAND OPENING.



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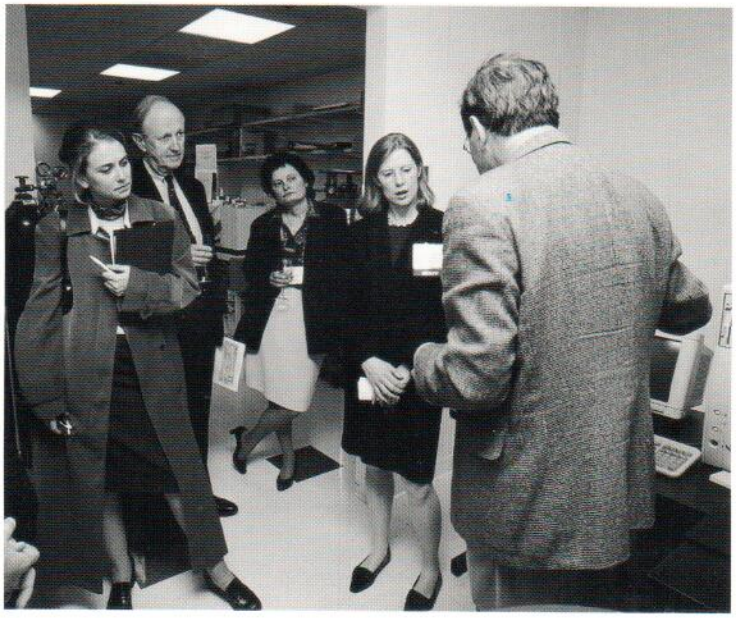

FROM LEFT: ALISON CONNOLLY OF THE BOSTON BUSINESS JOURNAL, TRUSTEE TONY CABOT, MARY ANN CABOT, AND BBRI CAMPAIGN MANAGER VIRGINIA SULLIVAN AT A DEMONSTRATION IN DR. SHERWIN LEHRER'S LABORATORY AT THE GRAND OPENING.

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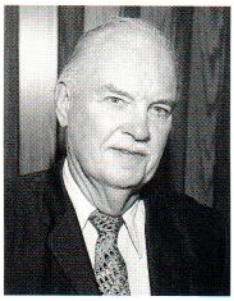
# Treasurer's Report

ERNEST HENDERSON, III



As noted in both the Messages from the Director and the President, BBRI moved into its brand new state-of-the-art research facility located in Watertown, Massachusetts during February 2000. The total cost of the project was $16,600,000. This included $550,000 for the acquisition of land, $15,600,000 for construction of the building, $150,000 for the purchase of new furniture, and $367,000 in capitalized interest cost. These figures are reflected in the property and equipment and capitalized interest portions of the statements of financial position.

After five years as Chief Financial Officer, Thomas McQuaid left BBRI in August 2000 to take a position at the Forsyth Dental Center. On behalf of the Trustees, I would like to thank Tom for his outstanding contributions to the Institute. BBRI is fortunate to have recruited Alan Kaye as our new CFO. Alan holds a Masters in Business Administration in Finance and is a Certified Public Accountant. He has eighteen years experience in financial management, most recently as the Controller at The Schepens Eye Research Institute. We welcome Alan to BBRI.

Investments topped $18,000,000 at June 30, 2000, an increase of $5.3 million over the prior year. This increase reflects receipt of the final $4.8 million from the sale of our leaseholds in Boston and Townsend to The Schepens Eye Research Institute. The remainder of the increase is due to net investment appreciation on the BBRI portfolio.

During the fiscal year the Institute was awarded nine new grants from the National Institutes of Health and the National Science Foundation. Additionally, the Institute received grants from the American Heart Association, the March of Dimes, the Hereditary Disease Foundation, and the Medical Foundation - Charles A. King Trust.

A review of financial results indicates that total unrestricted support of approximately $9,207,000 grew 20% over the prior year. Revenue from federal agencies represents approximately 87% of revenue from grants and contracts.

Total expenses of $8,916,000 increased approximately $1,500,000 over the prior year due primarily to research initiatives, facility related personnel and operating costs. In addition to plant personnel, BBRI now maintains its own in vivo facility, glass washers and library.

Philanthropic giving grew significantly as BBRI has entered the early stages of its Comprehensive Campaign. Fiscal year 2000 contributions of approximately $784,000 represent an increase of almost 78% over the prior year. This effort would not be possible without the tireless efforts of Allie Blodgett and the Development Committee. With the new facility, BBRI has positioned itself to meet the growing needs of its scientific community. Our greatest ongoing challenge is the expansion of our "intellectual capital." New recruits, expansion of existing programs, the nearly doubling of our space, and the inception of a pilot program to promote new ideas do not come inexpensively. We invite you to increase your participation, expand our circle of friends and supporters and help us take advantage of our exciting new opportunities!

# Grants and Fellowship Awards

## Research Grants

### National Institutes of Health

| | | | |
|---|---|---|---|
| DR. BADWEY | MAPK IN THE CONTRACTILE PHENOTYPE OF SMOOTH MUSCLE | 3/96-2/01 | $1,128,000 |
| DR. BADWEY | ENZYMES MODULATING SECOND MESSENGERS IN NEUTROPHILS | 8/98-7/03 | 1,096,000 |
| DR. BOHM | FUNCTIONAL STUDIES OF THE YEAST POLY (A) POLYMERASE | 9/99-8/01 | 47,000* |
| DR. BOHM | CATALYTIC MECHANISM AND REGULATION OF MAMMALIAN ADENYLYL CYCLASE | 9/99-8/01 | 50,000* |
| DR. COLUCCIO | MYOSIN-I MEDIATED PROCESSES IN LIVER CELLS | 8/97-7/01 | 1,407,000 |
| DR. DOMINGUEZ | ATOMIC STRUCTURE OF SMOOTH MUSCLE CALDESMON | 3/00-2/05 | 1,620,000* |
| DR. HARRISON | STRUCTURE / FUNCTION ANALYSIS OF MOLECULAR CHAPERONES | 7/98-6/03 | 1,206,000 |
| DR. IKEMOTO | STRUCTURE AND FUNCTION OF SARCOPLASMIC RETICULUM | 9/96-8/01 | 2,416,000 |
| DR. LEHRER | TROPOMYOSIN AND MYOSIN INTERACTION IN MUSCLE | 12/95-11/00 | 2,044,000 |
| DR. MORGAN | REGULATION OF CONTRACTION AND GROWTH OF BLOOD VESSELS | 3/00-2/04 | 1,316,000* |
| DR. MORGAN | CONTRACTION OF VASCULAR SMOOTH MUSCLE CELLS | 4/97-3/01 | 768,000 |
| DR. MORGAN | CONFOCAL MICROSCOPE FACILITY | 4/00-3/01 | 293,000* |
| DR. PAULUS | MECHANISM OF PROTEIN SPLICING IN MYCOBACTERIUM | 4/97-3/01 | 1,403,000 |
| DR. RASO | A BINARY SYSTEM FOR CELL-TARGETED DELIVERY | 3/99-2/01 | 246,000 |
| DR. RASO | VACCINE TO ELICIT CATALYTIC ANTI-COCAINE ANTIBODIES | 4/99-3/02 | 471,000 |
| DR. SARKAR | FUNCTION OF POLYADENYLATE SEQUENCES IN BACTERIAL RNA | 9/98-8/02 | 1,419,000 |
| DR. SHERMAN | MOLECULAR CHAPERONES AND PROTEIN PHOSPHORYLATION | 5/96-4/01 | 1,081,000 |
| DR. SHERMAN | HSP72 AND REGULATION OF STRESS-KINASES IN TUMOR CELLS | 5/00-4/05 | 1,991,000* |
| DR. TAO (MERIT) | PROXIMITY RELATIONSHIP AMONG MUSCLE PROTEINS | 5/96-3/01 | 2,201,000 |
| DR. TAO | MOLECULAR INTERACTIONS OF THE MYOSIN PHOSPHATES SUBUNITS | 2/00-1/04 | 1,282,000* |
| DR. TOKER | PHOSPHOINOSITIDE 3-KINASE C SIGNALING | 12/98-11/03 | 1,385,000 |
| DR. TOKER | PHOSPHOLIPASE C SIGNALING IN INTEGRIN MEDIATED CARCINOMA | 8/99-7/01 | 275,000* |
| DR. WANG (PRO. PROJ.) | MOLECULAR MECHANISM OF SMOOTH MUSCLE REGULATION | 12/97-11/02 | 7,696,000 |
| DR. WOHLRAB | PHOSPHATE PATH WITHIN HOMODIMERIC MITOCHONDRIAL PTP | 5/98-4/02 | 1,412,000 |

### National Science Foundation

| | | | |
|---|---|---|---|
| DR. ERHARDT | MECHANISM OF CELL SURVIVAL MEDIATED BY THE B-RAF KINASE | 6/00-5/03 | 309,000* |

### American Cancer Society

| | | | |
|---|---|---|---|
| DR. BOHM | STRUCTURE OF G-BETA GAMMA / EFFECTOR COMPLEX | 1/99-12/01 | 342,000 |

### American Heart Association

| | | | |
|---|---|---|---|
| DR. DOMINGUEZ | X-RAY CRYSTAL STUDY OF RECOMBITANT HUMAN CALCYCLIN AND ITS COMPLEX WITH A TARGET SMOOTH MUSCLE CALDESMON FRAGMENT | 7/99-6/01 | 77,000* |
| DR. EL-HAYEK | STRUCTURAL FUNCTIONAL DOMAIN MAPPING OF THE CARDIAC JFP | 1/00-12/03 | 260,000* |

### Conrad

| | | | |
|---|---|---|---|
| DR. LEAVIS | DEVELOPMENT OF ANTIBODIES AGAINST PREIMPLANTATION FACTOR & INVESTIGATION CONTRACEPTIVE POTENTIAL | 10/98-9/99 | 58,400 |

### Defense Advanced Research Projects Agency

| | | | |
|---|---|---|---|
| DR. LEAVIS | EMBRYONAL FACTORS AS ANTIINFECTIVE AGENTS | 2/97-1/00 | 844,000 |

### Hereditary Disease Foundation

| | | | |
|---|---|---|---|
| DR. SHERMAN | ROLE OF STRESS KINASE & HSPS IN HUNTINGTON-INDUCED APOPTOSIS | 2/99-1/01 | 111,000 |
| DR. SHERMAN | SCREEN FOR COMPOUNDS THAT PREVENT AGGREGATION AND TOXICITY OF POLYQ CONTAINING POLYPEPTIDES USING YEAST | 4/00-3/01 | 58,000* |

### March of Dimes

| | | | |
|---|---|---|---|
| DR. COLUCCIO | MECHANOCHEMICAL PROPERTIES OF MAMMALIAN MYOSIN I'S | 6/98-5/00 | 118,000 |
| DR. DOMINGUEZ | STRUCTURAL BIOLOGY OF CALDESMON - BASED THIN FILAMENT REGULATION | 2/00-1/02 | 100,000* |

### The Medical Foundation-Charles A. King Trust

| | | | |
|---|---|---|---|
| DR. YAGLOM (DR. SHERMAN) | THE ROLE OF HSP 72 IN REGULATION OF STRESS - KINASES | 9/99-8/01 | 56,000* |

### The Medical Foundation-Harcourt General Charitable Foundation, Inc.

| | | | |
|---|---|---|---|
| DR. TOKER | THE ROLE OF PROTEIN KINASE C IN INTEGRIN-MEDIATED TUMOR INVASION | 7/98-6/00 | 100,000 |

## Sponsored Research

| | | | |
|---|---|---|---|
| DR. PAULUS | PHARMING TECHNOLOGIES BV | 1/99-12/00 | 202,000 |

## NIH Fellowships and Conference Awards

| | | | |
|---|---|---|---|
| DR. LEINWEBER (DR. MORGAN) | FELLOWSHIP | 7/98-6/01 | 81,000 |
| DR. WANG | SMOOTH MUSCLE CELLS: STRUCTURE, MOTILITY & SIGNALING | 4/99-4/00 | 15,000 |

*NEW GRANTS IN FISCAL 2000

# STATEMENTS OF FINANCIAL POSITION

JUNE 30, 2000 AND 1999

| ASSETS: | 2000 | 1999 |
|---|---|---|
| CASH | $ 491,001 | $ 414,426 |
| GRANTS RECEIVABLE | 5,648,808 | 4,139,194 |
| UNCONDITIONAL PROMISES TO GIVE | 355,802 | 13,374 |
| INVESTMENTS | 18,039,094 | 12,698,221 |
| PREPAYMENTS, DEPOSITS AND OTHER RECEIVABLES | 190,397 | 100,008 |
| TRUSTEE-HELD FUNDS | 1,211,332 | 17,727,138 |
| CONSTRUCTION-IN-PROGRESS | - | 4,226,847 |
| CAPITALIZED INTEREST | 367,371 | 75,607 |
| PROPERTY AND EQUIPMENT | 16,799,971 | 1,375,023 |
| DEFERRED COMPENSATION INVESTMENTS | 2,869,215 | 2,424,140 |
| TOTAL ASSETS | $45,972,991 | $43,193,978 |
| **LIABILITIES AND NET ASSETS:** | | |
| ACCOUNTS PAYABLE AND ACCRUED EXPENSES | $ 999,473 | $ 651,438 |
| ACCRUED INTEREST EXPENSE | 393,628 | 128,646 |
| DEFERRED INCOME | 5,526,557 | 4,150,406 |
| DEFERRED COMPENSATION PAYABLE | 2,869,215 | 2,424,140 |
| BONDS PAYABLE | 17,000,000 | 17,000,000 |
| TOTAL LIABILITIES | 26,788,873 | 24,354,630 |
| **NET ASSETS:** | | |
| UNRESTRICTED | 18,279,695 | 17,988,968 |
| TEMPORARILY RESTRICTED | 259,522 | 352,414 |
| PERMANENTLY RESTRICTED | 644,901 | 497,966 |
| TOTAL NET ASSETS | 19,184,118 | 18,839,348 |
| TOTAL LIABILITIES AND NET ASSETS | $45,972,991 | $43,193,978 |

COPIES OF OUR COMPLETE, AUDITED FINANCIAL STATEMENTS ARE AVAILABLE UPON REQUEST FROM THE CHIEF FINANCIAL OFFICER, BOSTON BIOMEDICAL RESEARCH INSTITUTE.

# Statements of Activities

FOR THE YEARS ENDED JUNE 30, 2000 AND 1999

| CHANGES IN UNRESTRICTED NET ASSETS: | 2000 | 1999 |
|---|---|---|
| **REVENUES:** | | |
| GRANTS AND CONTRACTS | $6,690,734 | $6,266,489 |
| CONTRIBUTIONS | 684,879 | 439,511 |
| INVESTMENT INCOME | 1,685,090 | 931,412 |
| OTHER INCOME INCLUDING LICENSING FEES | 14,273 | 22,032 |
| TOTAL UNRESTRICTED REVENUES | 9,074,976 | 7,659,444 |
| NET ASSETS RELEASED FROM RESTRICTIONS | 132,237 | 39,780 |
| TOTAL UNRESTRICTED SUPPORT | 9,207,213 | 7,699,224 |
| **EXPENSES:** | | |
| SALARIES AND BENEFITS | 5,005,396 | 4,684,666 |
| GENERAL SUPPORT AND SERVICES | 1,733,856 | 1,374,735 |
| OCCUPANCY COSTS | 1,545,065 | 875,272 |
| DEPRECIATION | 571,272 | 355,837 |
| FUND RAISING | 60,897 | 89,719 |
| TOTAL EXPENSES | 8,916,486 | 7,380,229 |
| INCREASE IN UNRESTRICTED NET ASSETS BEFORE EXTRAORDINARY GAIN | 290,727 | 318,995 |
| EXTRAORDINARY GAIN ON SALE OF LEASEHOLD | - | 7,560,366 |
| INCREASE IN UNRESTRICTED NET ASSETS | 290,727 | 7,879,361 |
| **CHANGES IN TEMPORARILY RESTRICTED NET ASSETS:** | | |
| CONTRIBUTIONS | - | 2,310 |
| INVESTMENT INCOME | 39,345 | 36,168 |
| NET ASSETS RELEASED FROM RESTRICTIONS | (132,237) | (39,780) |
| DECREASE IN TEMPORARILY RESTRICTED NET ASSETS | (92,892) | (1,302) |
| **CHANGES IN PERMANENTLY RESTRICTED NET ASSETS:** | | |
| CONTRIBUTIONS | 100,000 | - |
| INVESTMENT INCOME | 46,935 | 29,525 |
| INCREASE IN PERMANENTLY RESTRICTED NET ASSETS | 146,935 | 29,525 |
| INCREASE IN NET ASSETS | 344,770 | 7,907,584 |
| NET ASSETS AT BEGINNING OF YEAR | 18,839,348 | 10,931,764 |
| NET ASSETS AT END OF YEAR | $19,184,118 | $18,839,348 |

# Staff

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HARTMUT WOHLRAB, PH.D.

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DEBORAH SCIACCA, RECEPTIONIST

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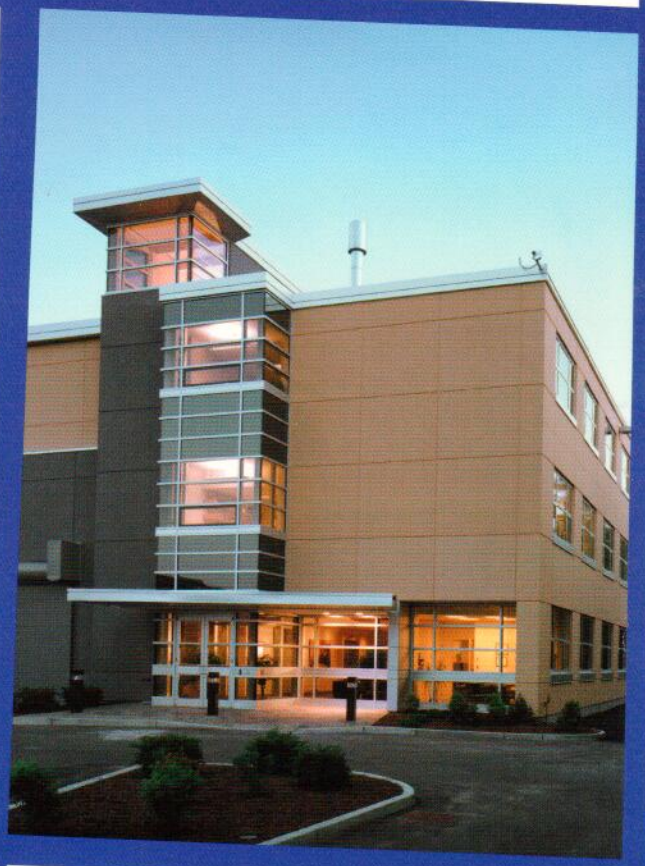

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