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BUSM Dean's Report

1991

Boston University School of Medicine Dean's report: 1991

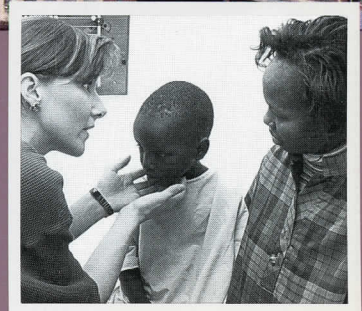
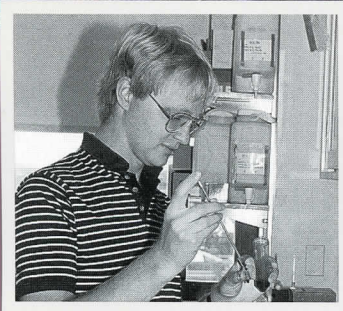
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Boston University



Boston University
School of Medicine

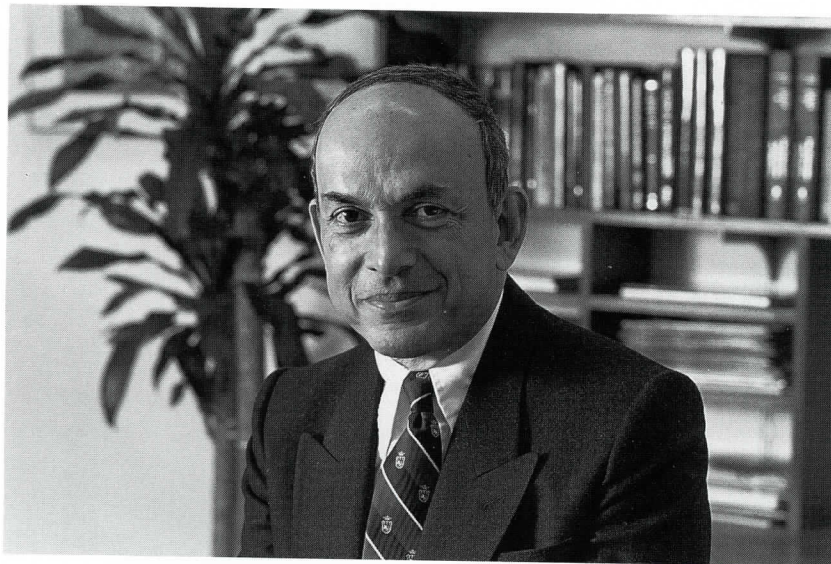
Dean's Report 1991





Building on Strength

Introduction



Boston University School of Medicine continues to build upon a strong foundation, adding to an already rich faculty roster and expanding its physical plant to accommodate ever-increasing research and teaching activities and to provide housing for students. Several recent steps have been taken to pave the way for still further success: a major appointment in oncology, the creation of two more endowed chairs, advances in several key research areas, and the initiation of several new construction projects to increase space for research.

It is my pleasure in this Dean's Report to welcome a new director of the Hubert H. Humphrey Cancer Research Center and to announce the establishment of two new endowed chairs—one in medical genetics and one in arthritis. These are the fourth and fifth new endowed chairs we have created in just three years. In this report, I also introduce several other clinical researchers and faculty members whose work and teaching are developing rapidly in amyloid and fungal disease, and prevention. We also examine several interesting public-health initiatives, and news from our Veterans Administration affiliates. Finally, we look at activities involving our BUSM students and honors for alumni.

Aram V. Chobanian

Aram V. Chobanian, M.D.

Appointment:

Douglas V. Faller, M.D., Ph.D.,
named director of the
Hubert H. Humphrey Cancer Research Center



Douglas V. Faller, M.D., Ph.D.

This spring, Douglas V. Faller, M.D., Ph.D., joined our faculty as director of the Hubert H. Humphrey Cancer Research Center, a professor of medicine and vice-chairman of the Division of Medicine for hematology/oncology.

Dr. Faller brings to the Cancer Center and to the School of Medicine a combination of expertise in bench science and clinical practice. From the perspective of basic scientific research, Dr. Faller's work demonstrates a productive diversity that embraces the study of normal cells, as well as tumor cells. He has made important discoveries in two areas. The first of these concerns the release of tumors from normal growth constraints and the resulting replication that occurs independent of the need for growth factors; the second finding concerns a cell's ability to escape immune surveillance.

Dr. Faller's work in growth-factor production and utilization by tumor cells and by normal cells has had important ramifications in aspects of biology outside of cancer. For example, he determined the molecular mechanisms by which normal cells in blood vessels can sense the oxygen in the blood that flows through the blood vessels, and release growth factors that alter the structure of the blood vessels themselves. Research in growth-factor production led to an

exploration of how a cell senses and responds to signals to grow provided by other cells. This work has relevance for heart disease, sickle-cell disease and other conditions. "It has shown us," Dr. Faller said, "that one can't limit research about cancer cells to work with tumor cells."

The second important discovery concerns the escape of cells from immune surveillance. "Some cells are able to escape the ability of the patient's immune system to recognize and destroy tumor cells before they begin to grow. It is very clear in most animals that the immune system is extremely effective in eliminating tumors," he said. "However, some tumor viruses have evolved ways of making the cells that they infect invisible to immune systems. Exploring the mechanism by which this occurs, we have discovered that a number of tumor viruses have the ability to turn off a cell's own tissue-type antigens. Once this occurs, the host's immune system has no way of recognizing or interacting with these cells. We have discovered ways to reactivate the expression of tissue-type antigens in infected cells to make them once again susceptible to surveillance."

Targeting specific proteins

"We are finally learning how oncogenes work, and how genes that keep tumors from growing function," Dr. Faller continued.

"With pharmacologists, we are able to design a drug and pick targets in the cell that block activation of the oncogene. We finally have the targets—specific proteins. In the past there were no targets, only the whole cell growing out of control. All of this has happened relatively quickly. Discoveries within the last two years are now gene-therapy experiments in the laboratory."

In the clinics, Dr. Faller will emphasize a high level of patient-oriented care. "Cancer care is normally a complicated and highly charged issue, fraught with emotional overtones involving families and a battery of health professionals," he said. "I want to streamline and simplify the continuum of patient care as much as possible, so that it is perceived by the patient as loving and considerate. That will become easier as cancer therapy improves."

Prevention will assume a high priority, too, with increased emphasis on screening, not only at the Medical Center but also at neighborhood health centers. "One of the most important things we can do for the community is to



Oncologist Marianne Prout, M.D., an associate professor of public health, center, demonstrates head and neck cancer-screening techniques to School of Medicine students.

promote prevention," Dr. Faller said. "It is easier to prevent most adult cancers than it is to cure them. The most important cancers in adults are lung, bowel, breast, and head and neck cancers. All of these cancers are completely curable, if detected early," said Dr. Faller. "The Hubert H. Humphrey Cancer Research Center will increase the availability of cancer screenings and will provide immediate referrals for patients who need primary care. Cancer screening is not complicated and need not take long. It can be done in community health centers, as well as at medical centers."

Recipient of numerous awards

Dr. Faller completed his undergraduate studies at Massachusetts Institute of

Technology in 1973, with membership in Phi Beta Kappa. He entered Harvard Medical School and after two years returned to M.I.T. for predoctoral work in the laboratory of Nobel laureate David Baltimore. After receiving his Ph.D. in 1978, Dr. Faller returned to Harvard to complete medical studies, and was awarded the M.D. degree with honors in 1979. After a residency in internal medicine at the University of California, San Francisco, he returned to Harvard in 1981 as a fellow in hematology/oncology at Children's Hospital Medical Center and the Dana-Farber Cancer Institute. Rising quickly through academic ranks, Dr. Faller was appointed an associate professor of pediatrics in 1988.

Dr. Faller has won numerous awards and honors, including the

Anna Fuller Award, the American Cancer Society Senior Faculty Award, and election to the American Society for Clinical Investigation. He has been the recipient of research grants from the American Cancer Society, the National Cancer Institute, the National Heart, Lung and Blood Institute, and the American Heart Association. ■

Two new chairs are endowed

Milunsky is named to genetics professorship

The endowment of a new professorship in human genetics, the fourth such endowed chair at the School of Medicine in three years, underscores the importance of human genetics in medical practice and research today. It is my pleasure to announce that Aubrey Milunsky, M.D., D.Sc., has been selected as the first incumbent of the chair.

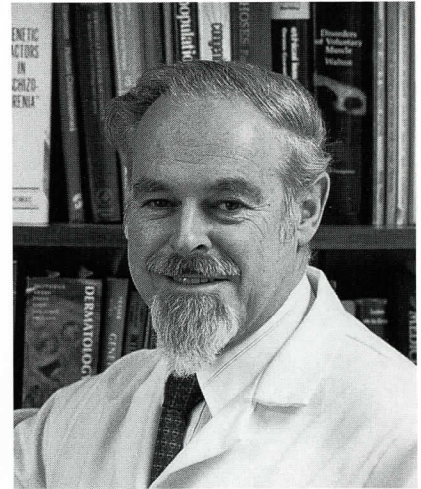
The School of Medicine recognized the rapidly developing field of medical genetics by establishing the Center for Human Genetics in 1982, with Dr. Milunsky as its director. Dr. Milunsky, a professor of pediatrics, obstetrics and gynecology, and pathology, is the author of more than 200 papers and several books, including the recent successful book for the lay public, *Choices, Not Chances: An Essential Guide to Your Heredity and Health*.

The Center for Human Genetics today provides important diagnostic and counseling services for genetic disorders and conducts epidemiological, molecular and biochemical research. A major recent accomplishment was the mapping of the gene for sex-linked lympho-proliferative disease, a fatal disorder that is due to genetic susceptibility to the infectious mononucleosis virus.

During the last decade, genetic screening has become a standard of care, and each year the Center screens tens of thousands of blood samples for such genetic defects as spina bifida and Down's syndrome. The goal is primary prevention. An example of how such screenings serve this cause was articulated in

Dr. Milunsky's recent paper showing that multivitamins and folic acid taken during early pregnancy prevent neural-tube defects. Scientists at the Center currently are employing a new technology for analyzing genes for various diseases, including cystic fibrosis. A year ago, it was not possible to identify routinely carriers of the gene for cystic fibrosis; today the Center provides carrier-detection tests and prenatal diagnosis in 24 hours.

The human genome project, which will map all human genes by the end of the century, will have an enormous impact on medicine, since genes and their interaction



Aubrey Milunsky, M.D., D.Sc.

with their environment influence all disease. By establishing this new endowed chair, Boston University School of Medicine acknowledges and anticipates the contribution of human genetics to the practice of medicine and to improved patient care. ■

Rheumatology chair honors Cohen's work

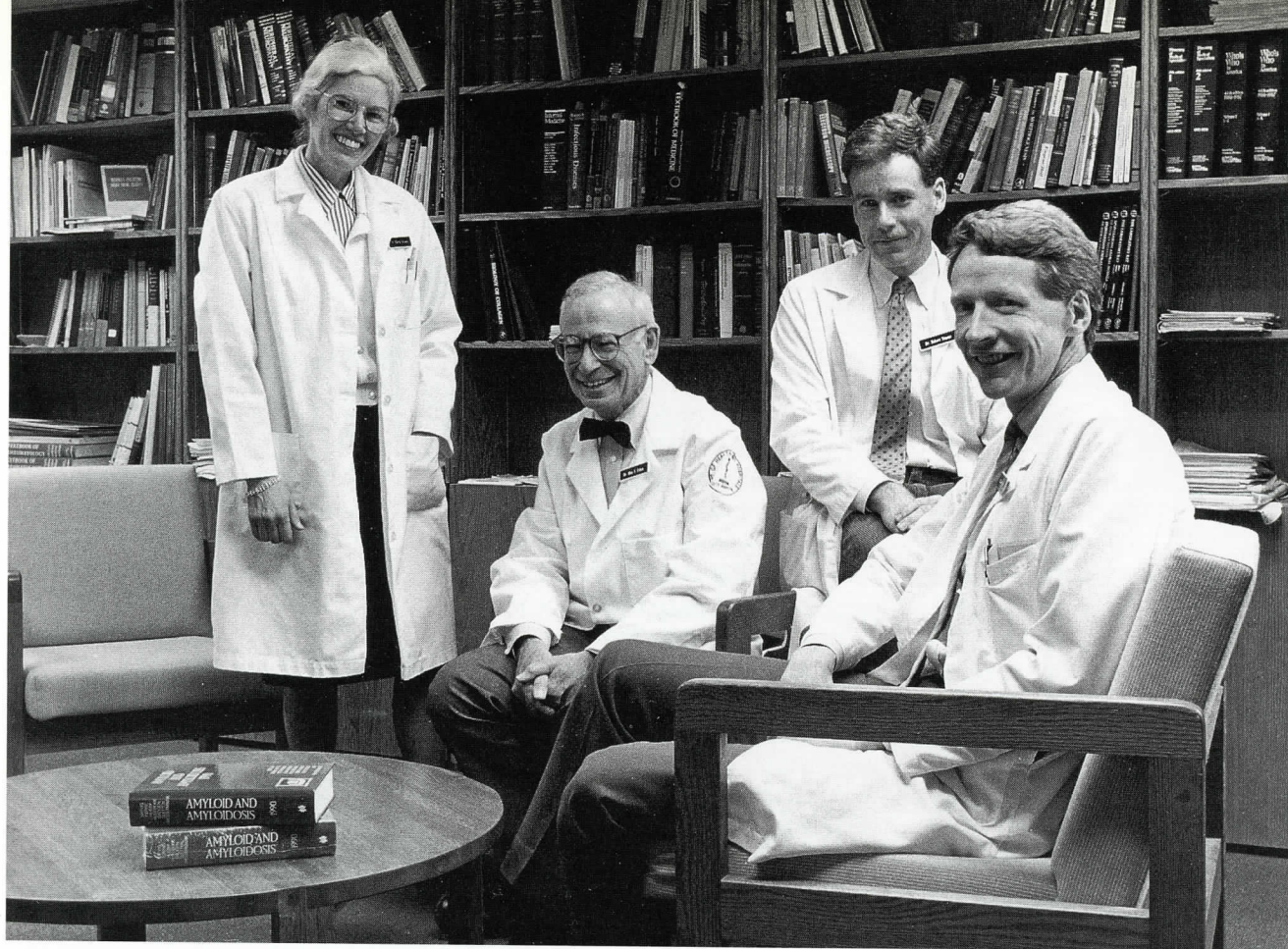
Early in 1991, we announced the establishment of a new endowed chair in rheumatology. This chair represents the capstone of 30 years of excellent research, teaching and clinical work by Alan S. Cohen, M.D., who graduated with the BUSM Class of 1952 and returned here in 1960 to form a core group to study arthritis and related disorders.

At that time, he was appointed the first director of the Section of Arthritis and Connective Tissue Diseases at the Evans Memorial Department of Clinical Research and Preventive Medicine of the University Hospital. Soon afterwards, Cohen established a

unit at the Boston City Hospital, and later at the Boston VA Hospital. In addition he created a research laboratory at the School of Medicine.

From the original core group of investigators working on arthritis, the Arthritis Center has emerged as an international leader, with trainees practicing all over the world. The flowering of the Arthritis Center has produced the Health Services Research and Epidemiology Unit, the Amyloid Center, and a core group working in immunology.

Dr. Cohen will be named the first incumbent of this chair. ■



Members of the Arthritis Center include, from left, Martha Skinner, M.D., Alan Cohen, M.D., Robert Simms, M.D., and Robert Meenan, M.D.

Key Basic Research

The Arthritis Center—30 Years and Growing

The Arthritis Center at Boston University School of Medicine originated in 1960, when Alan S. Cohen, M.D., now the director of the Center and the Conrad Wesselhoef Professor of Medicine, joined the faculty. In 1977, the Center was chosen by the National Institutes of Health as one of 15 Multipurpose Arthritis Centers in the country.

Today, the Arthritis Center continues as one of the School of Medicine's major research centers and its scientists have attained an international reputation for their work in arthritis research, treatment and education. Last fall,

the Dutch Rheumatism Society awarded Dr. Cohen the Jan van Bremen Gold Medal for his pioneering research on amyloidosis, and Robert Meenan, M.D., a professor of medicine and head of the Arthritis Section, was elected president of the American College of Rheumatology. Dr. Meenan will direct the annual meeting of this society here in Boston next November.

Landmark research in amyloidosis

Dr. Cohen recognized quite early that, of the various connective tissue disorders, amyloid disease represented an important challenge

from the perspective of patient care and research. During the years since publication of his seminal work identifying and characterizing amyloid fibrils in 1967, Boston University School of Medicine has emerged as a center for diagnosis, treatment and research on amyloidosis. At one time, this was considered a rare disease; it was believed that a physician might see one or two cases in a lifetime of practice. It is now known that amyloidosis occurs both as a secondary consequence of inflammatory diseases and as a hereditary disease. In addition, amyloid deposition in the pancreas is present in many diabetic patients, and amyloid fibrils in the brain characterize many individuals with Alzheimer's disease.

It is now well established that in amyloidosis, large protein

molecules cannot be broken down by normal enzymatic activity, but instead, fold over on themselves, producing distinctive fibrils, which are then deposited in various human organs. Eventually, these bulky fibrils replace muscle cells in the heart, kidneys, nerves and brain, effectively shutting down normal function. Although there is as yet no cure for amyloidosis, teams of clinicians and research scientists in the Arthritis Research Center in recent years have produced a remarkable system of diagnosis and palliative treatment. Especially noteworthy is their development of a diagnostic technique in which aspirated fat tissue is studied to diagnose the disorder. This procedure, developed and refined by the Arthritis Center during the 1980s, is far less invasive or painful than other existing methods. Samples arrive regularly from all over the world for analysis, helping physicians to make diagnoses accurately and simply.

New studies on amyloidosis

These researchers are now closing in on understanding the molecular processes that may well lead to preventive and therapeutic measures. For example, Martha Skinner, M.D., a professor of medicine and director of the amyloid core unit, recently began a new study of patients with a hereditary form of amyloidosis. To date, Boston University researchers have identified five of 12 known mutations that trigger the fairly sudden onset of amyloid fibril production in affected individuals. Dr. Skinner is now monitoring children in families where inherited amyloidosis is present, in order to learn where the disease is likely to occur. "By tracking the proportion of normal and mutant

protein in individuals prior to onset of the disease," reported Dr. Skinner, "the study will produce a better understanding of what triggers that proliferation of extra-cellular fibrils in affected patients." Another senior member of the team working on amyloid, Tsuranobu Shirahama, M.D., Ph.D., a research professor of medicine, concentrates his work on studies of amyloid enhancing factor (AEF), an elusive substance that he and collaborators in Canada and Holland believe has a key role in the appearance of amyloid.

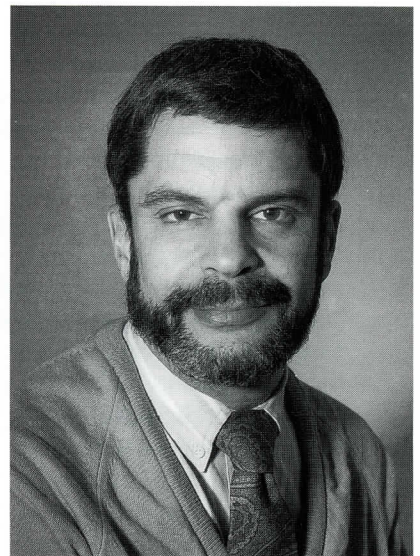
Carmela R. Abraham, Ph.D., an assistant research professor of medicine, has developed a research program to follow up her discovery of a protease inhibitor associated with amyloid disease in the brain. Finding the inhibitor prompted her to search for a protease that may be the target for inhibition and may cause amyloid fibrils to form. She is now very close to identifying the specific protein-cleaving enzyme. "The moment we find the protease, we can design a drug to inhibit it," said Dr. Abraham.

In addition to research on amyloid disease, epidemiological studies of major forms of arthritis and musculoskeletal disease are being conducted at the Arthritis Center. David T. Felson, M.D., an associate professor of medicine and public health, focuses particularly on osteoarthritis, osteoporosis and hip fracture. He has carried out a number of major studies in conjunction with the Framingham Heart Study population. The findings include the first clear evidence that obesity in early and middle ages is associated with later osteoarthritis of the knees, and important confirmation that the use of estrogens by women plays a major role in reducing the risk of hip fracture. ■

Understanding fungus at the molecular level

Fungal diseases, once curiosities, are increasingly common in the United States, as a result of an increased number of patients with suppressed immune systems due to other diseases and treatments. Amongst these are AIDS, and such therapies as anticancer regimens and treatments associated with transplantation.

A School of Medicine team headed by Richard D. Diamond, M.D., has been a leader in research aimed at understanding fungal diseases and developing more effective courses for prevention and treatment. Dr. Diamond, a professor of medicine, has been recognized internationally for his work in this area. He is credited with major contributions toward defining how human white-blood cells, or leukocytes, combat invading microorganisms.



Richard D. Diamond, M.D.



Three of the senior researchers investigating fungal diseases are, from left, Elizabeth Simons, Ph.D., Alan Sugar, M.D., and Stuart Levitz, M.D. Also a senior researcher but not pictured is Edwin Smail, M.D.

Foundation for clinical research program

The body's phagocytes, neutrophils and macrophages attack most infections by ingesting the invaders and then killing the organisms or at least halting their growth. In Dr. Diamond's early work, he showed that these leukocytes could kill fungi even though these organisms often were too large to be "swallowed" completely by the phagocytes. His original observations contributed to progress by many scientists studying defense mechanisms against infections and also served as the foundation for a clinical

research program at BUSM that includes several distinguished scientists in the Section of Infectious Diseases.

Two faculty members in the research group, Stuart Levitz, M.D., and Edwin H. Smail, M.D., both assistant professors of medicine, began as fellowship trainees in the Boston University Inter-Hospital Combined Program in Infectious Diseases. Dr. Levitz has described the way macrophages interact with cryptococcus, a fungus that is a major cause of illness and death in patients with AIDS. Dr. Smail has demonstrated unique mechanisms by which fungi can modify host

defenses. Alan M. Sugar, M.D., an associate professor of medicine, recently described a novel mechanism by which defense mechanisms can stop the growth of certain fungi and prevent infections even though the organisms remain alive. Dr. Sugar also is a widely recognized leader in the development and evaluation of new anti-fungal drugs. The research group has worked closely with several collaborators in the basic sciences, particularly Elizabeth R. Simons, Ph.D., a professor of biochemistry, who brings to the project her renowned expertise in the use of fluorescent probes to

define specific aspects of leukocyte function.

The recent large award of support by the National Institutes of Health for this new research program recognizes this group's successful interdisciplinary use of state-of-the-art technology in molecular immunology and genetics, computerized image analysis, and analytical biochemistry.

Investigating defense mechanisms

"We are seeing more fungal infections today," according to Dr. Diamond. "Traditionally, it has

been very hard to develop effective antibiotics, because fungal cells are closer to mammalian cells: It has been difficult to develop drugs that selectively will be potent against fungal infections without producing toxic effects on immune cells. The best drug is very toxic.

"At the molecular level, we are looking at defense mechanisms responsible for containing these infections," continued Dr. Diamond. "These systems represent a very useful general model for looking at how host-defense mechanisms are modulated in the course of infections. There is a delicate

balance between an inflammatory response that is supposed to be protective and one that is detrimental.

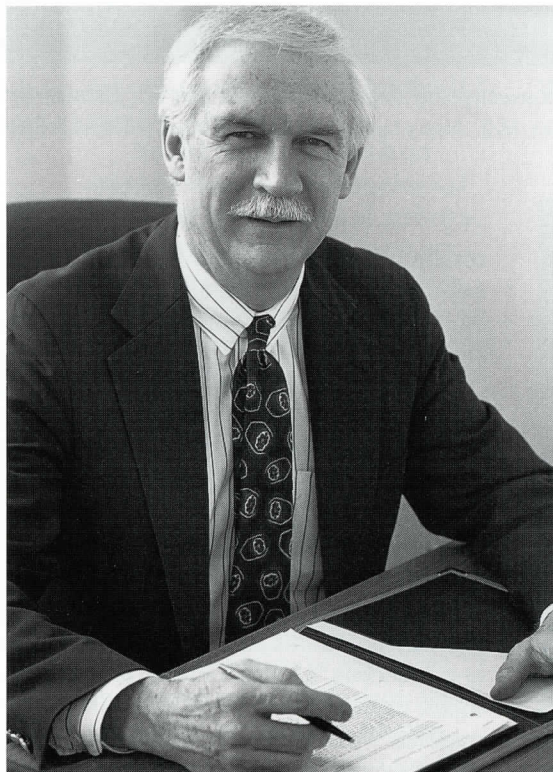
"We're asking, 'What does the host have to do to prevent the infection from beginning or progressing?'" he added. "By looking at the biochemistry and genetics of fungal cells and their growth-control mechanisms, we will identify processes in host responses in a manner that will allow suppression of unwanted outcomes while preserving important ones and stimulating missing responses." ■

Forty years later, Heart Study reaches toward 3rd and 4th generations

For 40 years, the Boston University Framingham Heart Study, in conjunction with the National Institutes of Health, has been studying and reporting on lifestyle and physiologic factors that relate to the development of coronary heart disease in men and women. Much of the original data on the major risk factors for heart disease came from this study. Because men generally have heart attacks sooner in life than women, data on the male population was available earlier. Now, the investigators are focusing their research on problems of the elderly and on heart disease in women.

Heart disease in women is a serious medical problem. It has been found that women ultimately suffer the same rates of heart disease as men, but

have approximately a 10-year delay in its onset. The Framingham Heart Study has



R. Curtis Ellison, M.D.

made and will continue to make important contributions to our understanding of heart disease in women, since it is one of the few large epidemiologic studies that has included women. Furthermore, as the cohort ages, new information about preventive measures for other problems of the elderly, including cancer, arthritis and dementia, is becoming available.

Focus on childhood factors

Boston University investigators also are beginning to study the descendants of the original participants in the Framingham Study. Nearly 20 years ago, they began to examine the second generation, that is, the children of members of the original cohort that had been recruited in 1949. In 1987, a new study, the

Framingham Children's Study, was initiated by R. Curtis Ellison, M.D., a professor of medicine and public health and chief of the Section of Preventive Medicine and Epidemiology. The children's study is looking at members of the third and fourth generations in Framingham, the grandchildren and great-grandchildren of the original participants. The study is focusing on factors early in life (starting at age three or four) that lead some people to develop healthier lifestyles than others.

"We know that many lifestyle characteristics are developed early in life," said Dr. Ellison. "We do not know, however, if the teenager or young adult who eats a healthy diet and is lean and active is that way because of an inherited predisposition or from environmental factors. Our studies should help tell us where we should put our prevention dollars; whether we should focus our efforts on educating parents, on developing and implementing new school curricula, or on attempting to have the characters on Saturday morning television promote a healthier lifestyle."

In other studies, Dr. Ellison has shown that modifying the sodium content of foods served to students can lead to significant decreases in blood pressure. "While we should be educating our young people to eat a healthier diet," said Dr. Ellison, "we should not overlook that fact that persuading food manufacturers to decrease the amount of sodium and fat in food products is another important way to improve the health of all." ■



Ralph Hingson, Sc.D.

Helping to curb the societal costs of drunk driving

At the School of Public Health, an intervention study to reduce mortality as a result of driving under the influence of alcohol has met with considerable success.

As part of a 10-year research program in traffic safety, Ralph Hingson, Sc.D., a professor of public health and epidemiology, has helped New England state governments evaluate the effects of traffic-safety legislation and implement preventive strategies.

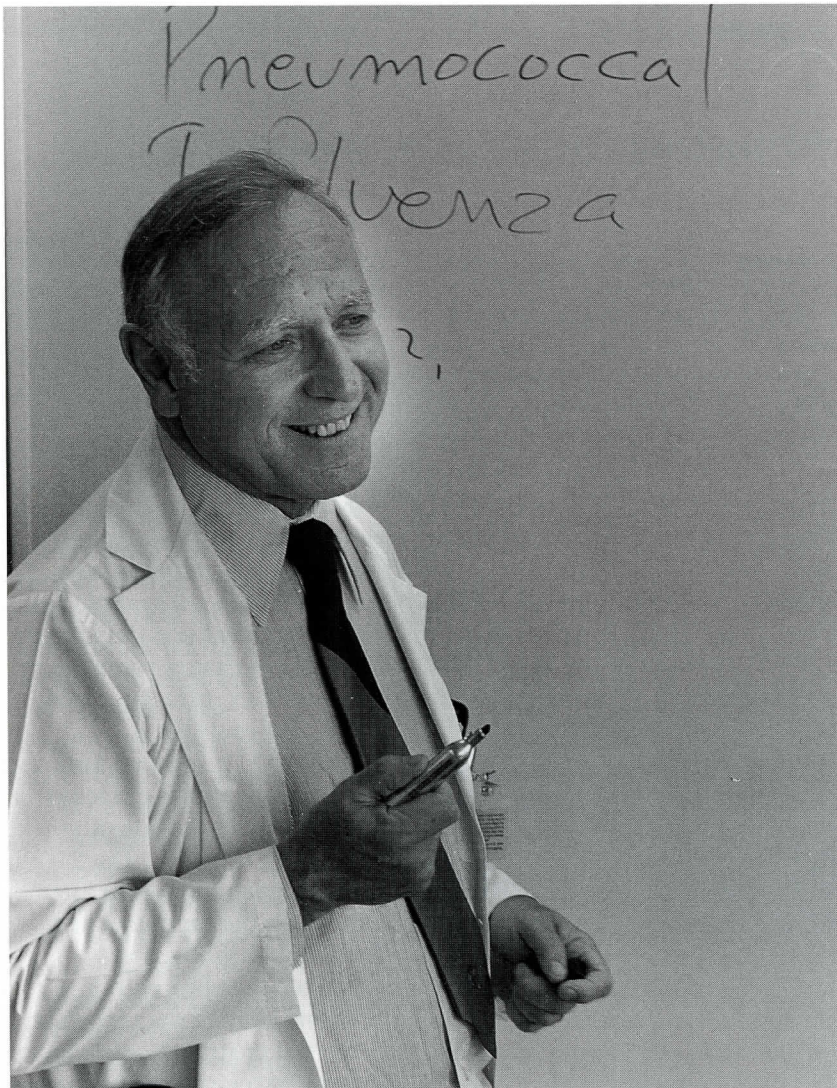
The program's findings sparked the development of community-based programs to reduce automobile fatalities through expanded public-awareness and enforcement campaigns. Administered by the Massachusetts Governor's Highway Safety Bureau, the "Saving Lives Program" now operates in six communities across the Bay State. The program—which receives funding from the Commonwealth Fund, the National Highway Traffic Safety

Administration, and the National Institute on Alcoholism and Alcohol Abuse—is being evaluated by the School of Public Health, under the direction of Dr. Hingson. An important aspect of the evaluation process is the ongoing feedback that is given to each participating community. After targeting problem areas, Dr. Hingson works with community leaders to create and implement networks to change community norms as they influence traffic safety. For example, a "speedwatch" telephone hotline in Marlborough allows citizens to call in the license-plate numbers of speeding vehicles. The Saving Lives Program follows up with a warning to the car owner and Marlborough police post additional speeding patrols at locations cited in the complaints. So far, the program has produced declines in teenage drunk driving and speeding and a marked reduction in fatal crashes. ■

News from VA affiliates

For many years, Boston University School of Medicine has enjoyed a strong and mutually beneficial relationship with the two large Veterans Administration Medical Centers in the greater Boston area. These hospitals, in Bedford, Mass., and on Huntington Avenue in

Boston, offer our students superb clinical experiences while at the same time sustaining a cadre of excellent clinical investigators. Their strengths in clinical research, linked with the expertise in basic research here at the School of Medicine, continue to win recognition. ■



Gene H. Stollerman, M.D.

Center for aging veterans established at Bedford VA

A few miles north of Boston, in Bedford, Mass., teaching and research programs in geriatrics and long-term care were greatly strengthened last fall when the federal Department of Veterans Affairs awarded one of three new national Centers for Health Services Research to the Edith Nourse Rogers Memorial Veterans Hospital, also known as the Bedford VA.

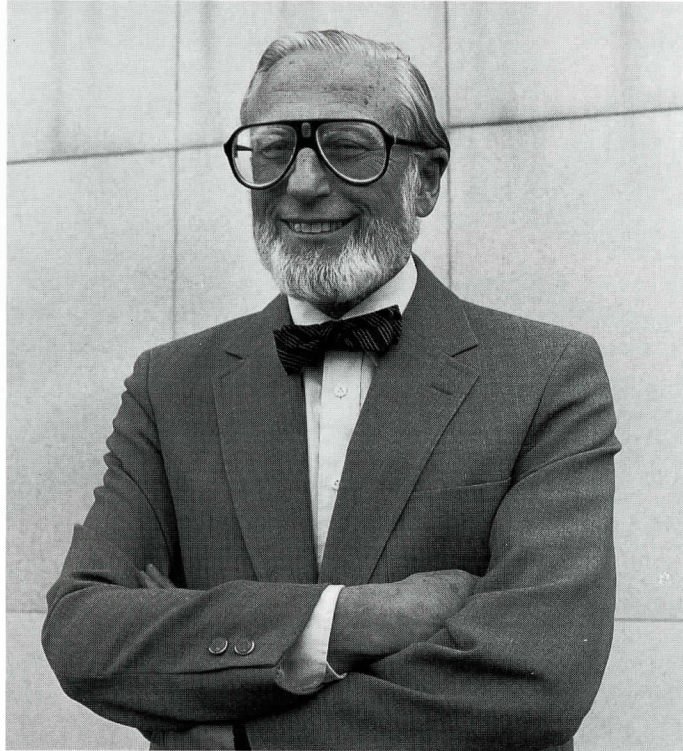
The new program, named the "Center for Health Maintenance of Aging Veterans," brings together clinical investigators, health scientists, and health-management experts to improve the effectiveness, efficiency and quality of care in the rapidly growing population of aging veterans. The award acknowledges the growing role of the Bedford Veterans Affairs Medical Center as a center of geriatric excellence.

For the past decade and more, the Bedford VA has been one of the VA's 12 Geriatric Research and Education Clinical Centers (GRECC). The Bedford GRECC and the Boston University faculty associated with it have become well known nationally and internationally for neurobiological research programs in Alzheimer's disease and in rheumatological diseases. GRECC Clinical Director Gene H. Stollerman, M.D., a professor of medicine, also will serve as the director of the Center for Health Maintenance of Aging Veterans. He formerly served as one of the VA's Distinguished Physicians, appointed from among the best in

American medicine. Serving with Dr. Stollerman as associate directors will be Donald Kern, M.D., M.P.H., an assistant professor of medicine, and Lewis Kazis, D.Sc., an assistant professor of public health and an assistant research professor of medicine.

"Right now," said Dr. Stollerman, "we are experiencing a huge expansion of long-term care services for aging veterans with complex medical and mental illnesses. The VA needs to develop strategies for providing comprehensive and continuous long-term care within realistic limits of reimbursement. Veterans cared for by the VA represent a more functionally impaired population than their cohorts cared for in the private sector. The interaction of physical, mental and social impairments requires multidisciplinary health-care teams.

"Until recently, health-services research was primarily the domain of health managers, economists and administrators," he added. "More recently, clinicians who can evaluate quality of care have been recruited to this field. They have been trained in biostatistics, epidemiology and behavioral sciences. Boston University School of Medicine/School of Public Health has been providing leadership in this endeavor, and many present and former Boston University students and faculty are now members of the Bedford staff or are active consultants and collaborators." ■



Gordon L. Snider, M.D.

Boston's Snider wins honor for work related to emphysema

At the Boston Veterans Administration Medical Center, Gordon L. Snider, M.D., was named co-recipient of the 1990 Alton Ochsner Award Relating Smoking to Health. Dr. Snider, the Maurice B. Strauss Professor of Medicine, also is chief of the medical service at the Boston VA.

Dr. Snider has had a long and distinguished career that led to identification of the specific enzyme responsible for emphysema and its treatment. His work began in the 1950s, first in physiological studies dealing with altered lung functions in smoking patients with

emphysema and in experimental animal models of the disease. His later studies focused on enzymatic biochemical defects of the disease, demonstrating that smoking destroyed the protecting inhibitors of the elastase enzyme that destroy the lung's elasticity.

The award recently conferred on Dr. Snider was named in honor of the late Dr. Alton Ochsner, one of the founders of the Ochsner Medical Institutes in New Orleans, La., and the first physician to relate cigarette smoking to lung cancer. ■

Students

Clinical experience from the onset of medical school

Within weeks of matriculating, BUSM students begin learning to hone their skills in conducting patient interviews, a process that continues through their third year of study. These interviews with patients are videotaped, and then are critiqued in seminars by their professors and classmates. By the time they enter clinical clerkships in the third year, the students have learned how to establish contact with a patient and how to glean critical bits of information from verbal reports and physical signs

they observe. For example, many students are participating in a flu-vaccine program sponsored by the Home Medical Service for the elderly and the homeless. This enables them to perform a valuable public service while learning patient care.

"This is a great way for enthusiastic students to get hands-on experience and to carry out what many of us feel is a responsibility to the community" said Michelle Greenwald '93. "We don't just want to sit here and learn things...we want to be active."

Other students delve into the School's vibrant research environment. Leslie Cunningham and Dennis Crawford, for example, each were awarded a 1990-1991 American Heart Association Medical Student Research Fellowship based on their previous laboratory investigations. The award allows the students to take a year off from medical school to conduct research at the School of Medicine's Whitaker Cardiovascular Institute.

Cunningham is investigating the role of growth factors in regulating vascular tone, and Crawford is studying the effects of hypertension on the gene expression of growth factors in the heart. Crawford recently applied for and was accepted to the M.D./Ph.D. Combined Degree Program.

M.D./Ph.D. students

The 50 students in the growing M.D./Ph.D. Combined Degree Program are drawn from a pool of outstanding young scientists from across the nation. Brad Fenton, for example, is studying neuronal transplantation in the Department of Anatomy and Neurobiology. While still in high school, he did research at the Rockefeller University that led to the development of a new noninvasive test for central nervous system demyelinating diseases. As an undergraduate at M.I.T., he developed and refined an assay to identify insulin degrading enzyme. This award-winning research provided a strong background in biochemical research techniques, which continue to be applicable to his present work. Fenton has developed the fetal septal cholinergic transplant methodology.



Taking part in a flu-vaccine program sponsored by the Home Medical Service gives BUSM students, like Ervant Nishanian, pictured above, an opportunity to interact with Boston's elderly and homeless populations.



School of Medicine Students follow a variety of interests through their career as described in this section; from left, (first row) Dennis Crawford, Athena Pennington, (second row) Loretta Jackson, Michelle Greenwald, Brad Fenton.

Loretta Jackson was accepted to Boston University School of Medicine's Early Medical School Selection Program when she was a sophomore at Tougaloo College. This program makes it possible for students from a consortium of historic black colleges and universities to take the Boston University Modular Medical Integrated Curriculum during their

senior year in college, and thereby enter the first year of medical school with more free time for electives and research.

When she was an undergraduate, Jackson began working in a laboratory in the Department of Biochemistry. It was this experience that led her to apply to the dual-degree program. Having completed the first two years of

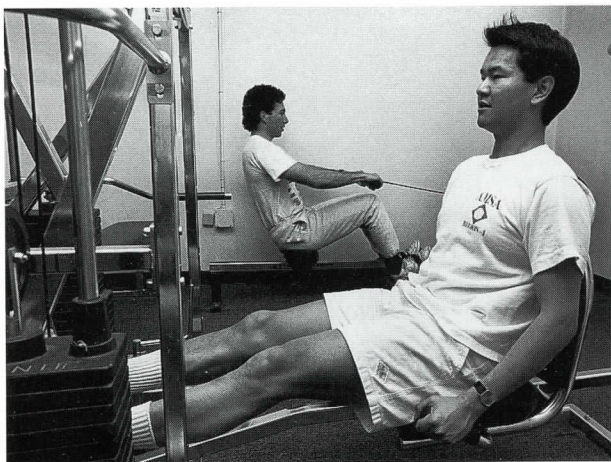
basic science, she now is doing research on the incorporation of soluble elastin protein into its fibrous matrix. She is developing a system to test modified tropoelastin in a prokaryotic system in order to define those elements necessary for proper fibrogenesis or scar-tissue formation.

Another outstanding student from Tougaloo College, Athena

Pennington '94, also entered our first-year class in September through the Early Medical School Selection Program. Pennington's superb achievement in science helped her to win a full scholarship while at Tougaloo and a Martin Luther King, Jr. Fellowship here at Boston University. In 1988 she was named a White House Initiative Scholar.

Student housing solution

For a number of years, we have sought to find the means of providing housing for medical students, and I am happy to announce that we have come up with a solution. Construction to provide some 60 residential units across the street from the School, on Harrison Avenue, is beginning this spring. These will be well-planned suites housing approximately 120 students. The class entering in the fall of 1992 will be the first group eligible to apply for space in this new residential facility. (See preliminary sketch located on inside back cover.) ■



Students participate in a variety of activities at the School of Medicine in addition to their academic pursuits. Pictured in the top photo, Arts Day 1991 brought out students, faculty and staff to observe works by their colleagues. The event was sponsored and organized by the Student Committee on Medical School Affairs, along with the Schools of Medicine and Public Health. Shown in the bottom right photo, the BUSM string ensemble provided a musical backdrop for the viewers. Pictured at the bottom left, students take advantage of a new exercise room located in the Robinson Building that recently opened for their exclusive use.

Alumni

Regional alumni meetings and alumni awards

The opportunity to travel around the country this year to meet with many Boston University School of Medicine graduates, learning about the practice of medicine in so many settings, was fascinating and instructive. I made stops in Lake Success, N.Y.; Los Angeles, Calif.; Washington, D.C.; Miami, Fla.; Phoenix, Ariz.; and Puerto Rico. It was an honor in addition, to have Louis Sullivan '58, U.S. Secretary of Health and Human Services, return to give the May 1990 commencement address.

Alumnus honored

Mortimer J. Buckley '58 was honored by the Boston University General Alumni Association for distinguished service to the medical profession. Chief of the Cardiac Surgical Unit at Massachusetts General Hospital and a professor of surgery at Harvard Medical School, Dr. Buckley is a renowned cardiovascular surgeon.

While a student here, Dr. Buckley was elected to the Alpha Omega Alpha honor society. After completing his residency at Massachusetts General Hospital, he earned a faculty appointment at Harvard Medical School in 1960, and became a full professor of surgery in 1977. Among his many contributions to surgical technique and technology has been his work on the intra-aortic balloon pump, which has proven to be indispensable for cardiac surgery. Dr. Buckley is chairman of the Inter-Society Commission for Heart Disease Resources Cardiac Review

Panel and the American College of Cardiology Cardiovascular Surgery Council. He received the Boston University School of Medicine's Distinguished Alumnus Award in 1982.

Distinguished Alumnus Awards, 1990

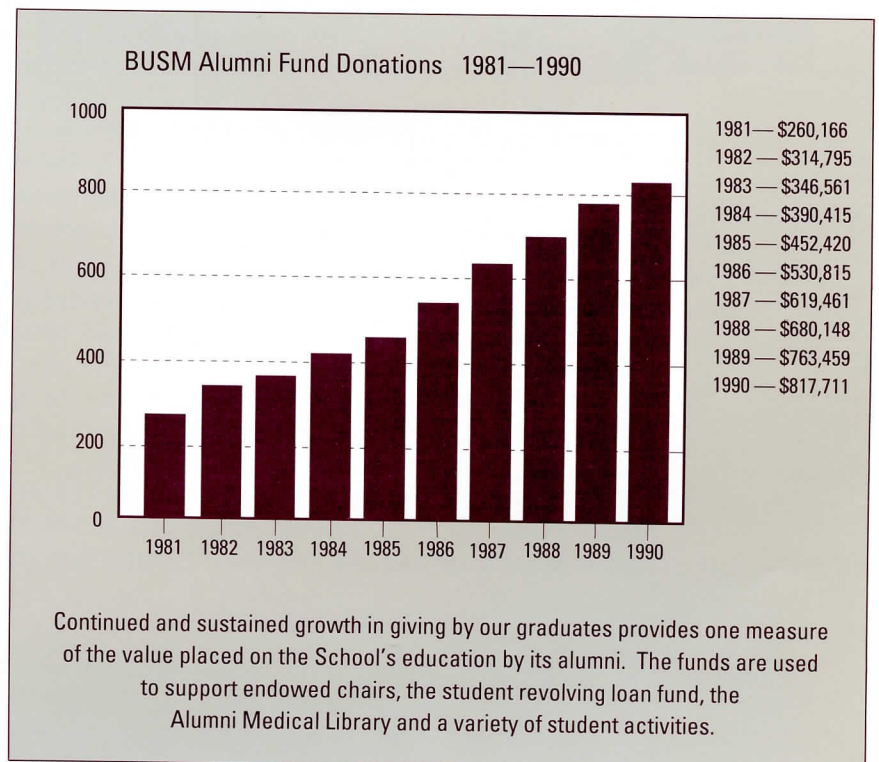
The 1990 Distinguished Alumnus Awards were presented by then-president of the Alumni Association Elizabeth C. Dooling '65 during the Association's 115th annual meeting and banquet held on May 12, 1990. Awards were presented to the following:

George D. Malkasian Jr. '54 is president of the American College of Obstetricians and Gynecologists and senior associate consultant to

the Department of Obstetrics and Gynecology at the Mayo Clinic. He was chairman of the department from 1976 to 1986, and is an authority on gynecologic chemotherapy.

Ralph C. Marcove '54 is an associate attending surgeon at Memorial Sloan Kettering Cancer Center and a clinical professor of orthopedic surgery at Cornell University Medical School. He has won recognition for his work on the treatment of bone tumors.

Edward L. Schneider '66 is a professor and dean at Leonard Davis School of Gerontology, University of Southern California, and executive director of the Ethel Percy Andrus Gerontology Center at the University of Southern California. He served as deputy director of the National Institute on Aging at the National Institutes of Health from 1985 to 1987. ■



In Memoriam

Franklin G. Ebaugh, Jr., M.D., a former dean of the School of Medicine, died of cancer on Aug. 7, 1990, at his home in Stanford, Calif. He was 68 years old.

Dr. Ebaugh earned his medical degree at Cornell Medical College in 1946 and worked at the National Institutes of Health, Dartmouth Medical School and Mary Hitchcock Memorial Hospital before coming to Boston University. During his tenure as dean from 1965 to 1969, Dr. Ebaugh was instrumental in developing curricular changes that included the School's highly successful Six-Year Program. His vigorous campaign to modernize the library when the Instructional Building was being built is legendary.

Upon leaving Boston University, Dr. Ebaugh became dean at the University of Utah Medical School. More recently, he served as associate dean for veterans affairs and a professor of medicine at Stanford University Medical School. At the time of his death, he was chief of staff at the Veterans Affairs Medical Center in Palo Alto, Calif. ■

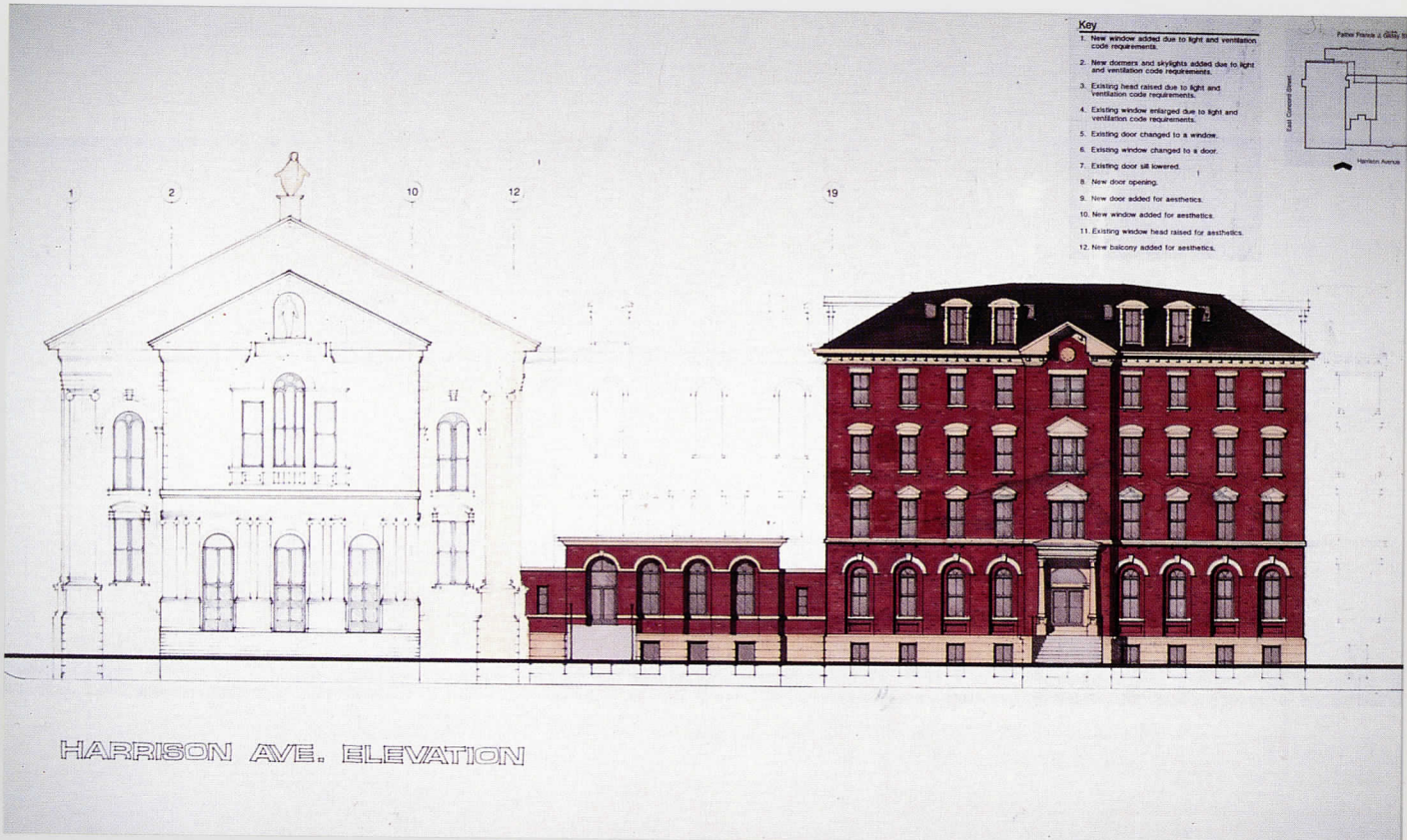
Charles P. Emerson, M.D., professor emeritus at the School of Medicine and chief of hematology at the University Hospital, died of a heart attack on Jan. 23, 1991, at his home in Wellesley, Mass. He was 78 years old.

After graduating from Harvard Medical School in 1937, Dr. Emerson served as a lieutenant colonel in the Army Medical Corps with the Fifth General Hospital in England and France during World War II. He received a Bronze Star for developing a more efficient technique of administering transfusions to wounded soldiers on the battlefield.

In 1947, he came to the Medical School as an assistant professor of medicine and as director of the blood bank. He was responsible for bringing the Naval Blood Research Laboratory to the Medical School. He and his colleagues were the first to develop techniques to measure blood volumes and red-cell survival using radioactive isotopes. ■

Andrew Dimitri Elia, M.D., a professor emeritus, died of emphysema on Feb. 5, 1991, at his home in Wellesley Hills, Mass. He was 84 years old. A 1935 graduate of the School of Medicine, Dr. Elia practiced obstetrics at the Massachusetts Memorial Hospitals, now the University Hospital. He also practiced at the Boston Lying-In Hospital, which is now part of the Brigham and Women's Hospital.

During World War II, Dr. Elia served in the U.S. Navy as the ship's doctor aboard the *U.S.S. Salinas*. Reportedly, he was the model for the doctor in the stage and film versions of "Mister Roberts." ■



The above architectural rendering of the old Boston College High School on Harrison Avenue across from the School of Medicine shows part of the structure that will be rehabilitated to provide approximately 60 residential suites for BUSM students.

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