



TENNESSEE STATE UNIVERSITY

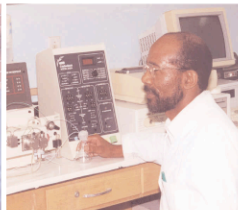
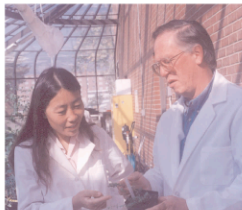
DIVISION OF

R E S E A R C H A N D
S P O N S O R E D
P R O G R A M S



Research at Tennessee State University utilizes the diverse skills and expertise of our researchers, faculty, staff, and students to make significant and sustained contributions to the knowledge of humankind through new discoveries that have positive impact on our community, our nation, and the world in which we live. At Tennessee State, we believe research is essential to excellence in education and enhances the educational experience of our students.

Marcus W. Shute, P.E., Ph.D.
Vice President



A N N U A L R E P O R T
F I S C A L Y E A R

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2003 RESEARCH HIGHLIGHTS

Baruch S. Blumberg Visits TSU

Nobel Laureate Baruch Blumberg addressed the TSU faculty, staff and students at the 25th Annual Research Symposium on March 25, 2003. The Research Symposium is one of the largest student-oriented symposiums in the United States. Blumberg, who won the Nobel Prize for discovering the Hepatitis B virus, complimented the research in progress at TSU.



Million Dollar Research Club

The Division of Research and Sponsored Programs inaugurated a Million Dollar Research Club on Monday, March 24, with the induction of its first 14 members. The elite organization celebrates researchers at TSU who have received grants, contracts, or cooperative agreements of at least \$1 million.



Louis Stokes Alliance for Minority Participation

Tennessee State University will receive nearly \$3.5 million from the National Science Foundation over a five-year period. The goal of the program is to increase the number of underrepresented science, mathematics, engineering and technology students by 100% by the end of the five year period. Dr. Lonnie Sharpe is the project director.



The Institute of Agricultural and Environmental Research (IAgER) Increases Research Capacity

Approximately \$2.2 million was awarded to the Institute from USDA Capacity Building Grants, IREE, APHIS, ARS; Georgia Institute of Technology; Southern Rural Development Center; Tennessee Department of Agriculture; State of Tennessee; Farm Foundation; Horticultural Research Institute; and Fort Belknap College. These newly funded projects span the agricultural research spectrum from biotechnology, economics, food safety/nutrition and GIS education to integrated pest management, animal production/nutrition, medicinal plants, and water quality. About 36% of the university's proposals [76] originated from the Institute, making the Institute's faculty the most prolific, for a second year in a row, in the submission of grant proposals. In the 1890 Land Grant Competitive Capacity Building Grants, 18 institutions submitted 147 proposals. The total amount of money available was \$10 million. The Institute's scientists obtained \$999,801 or 9.99% of the total amount of money available in the competition.



Immune Defense Research at TSU

Human natural killer (NK) lymphocytes play a central role in immune defense against virus infection and formation of primary tumors. NK cells are capable of killing tumor cells, virally infected cells, and antibody coated cells. They are responsible for limiting the spread of blood-borne metastases as well as limiting the development of primary tumors. Any agent that interferes with the ability of NK cells to lyse their targets could increase the risk of tumor incidence and/or viral infections. Studies in our laboratory assess the capacity of a variety of compounds, known to contaminate the environment and interfere with this crucial immune function. When a compound is found to interfere with the immune function of the NK cell we examine whether the compound is able to alter the biochemical pathways needed by the NK cell to carry out its functions. This involves monitoring the effects of the compound on the expression of particular proteins and the enzymatic activity of other proteins. Funding sources include the National Institute of Health.



Control System Research Group

Center of Excellence – Information Systems and Engineering Management is developing simpler, cost-effective, and flexible (i.e., easy-to-modify) control techniques that meet the rigid requirements imposed by today's high-performance control systems. The Center is conducting research in the areas of robust control of uncertain systems, damage detection, modeling of large-scale systems, system identification, and adaptive control using neural networks. Center researchers are actively participating with personnel at NASA Langley Research Center on projects relating to Ultra-Lightweight Space Space (ULSS) and Gossamer spacecraft.



TENNESSEE STATE UNIVERSITY ANNUAL REPORT FOR FISCAL YEAR 2003

\$ 41,594,166

Tennessee State University has enjoyed a steady increase in research and sponsored program support since 1991. This document is an abbreviated funding report of research, instruction/training, and service for fiscal year 2003 (July 1, 2002 through June 30, 2003). It describes the wealth of research and sponsored programs TSU researchers, educators and students are addressing through the implementation of some 140 projects awarded to TSU in the amount of \$41,594,166.

AWARDS BY CENTER/COLLEGE/SCHOOL

Agriculture and Consumer Sciences	\$ 118,082
College of Health Sciences	1,048,060
Arts and Sciences	2,132,741
Business	1,702,348
Institute of Agricultural and Environmental Research	3,775,273
Cooperative Extension Program	3,296,826
Center for Health Research	782,683
Center of Excellence/ Information Systems and Engineering Management	3,082,113
Center of Excellence/ Research and Policy on Basic Skills	14,656,644
Education	552,133
Engineering, Technology and Computer Science	2,449,659
Massie Chair of Excellence in Environmental Engineering	764,169
Nursing	313,306
Student Affairs	980,215
Others	5,943,914
TOTAL	\$41,594,166

AWARDS BY SOURCE OF FUNDS

U.S. Department of Education	\$ 6,781,753
U.S. Department of Agriculture	5,997,682
U.S. Department of Health and Human Services	5,011,298
National Science Foundation	3,877,507
National Aeronautics and Space Administration	2,578,193
U.S. Department of Defense	689,410
Tennessee State Agencies	13,235,546
Corporations and Foundations	827,441
Others	2,595,336

AWARDS BY PROJECT TYPE

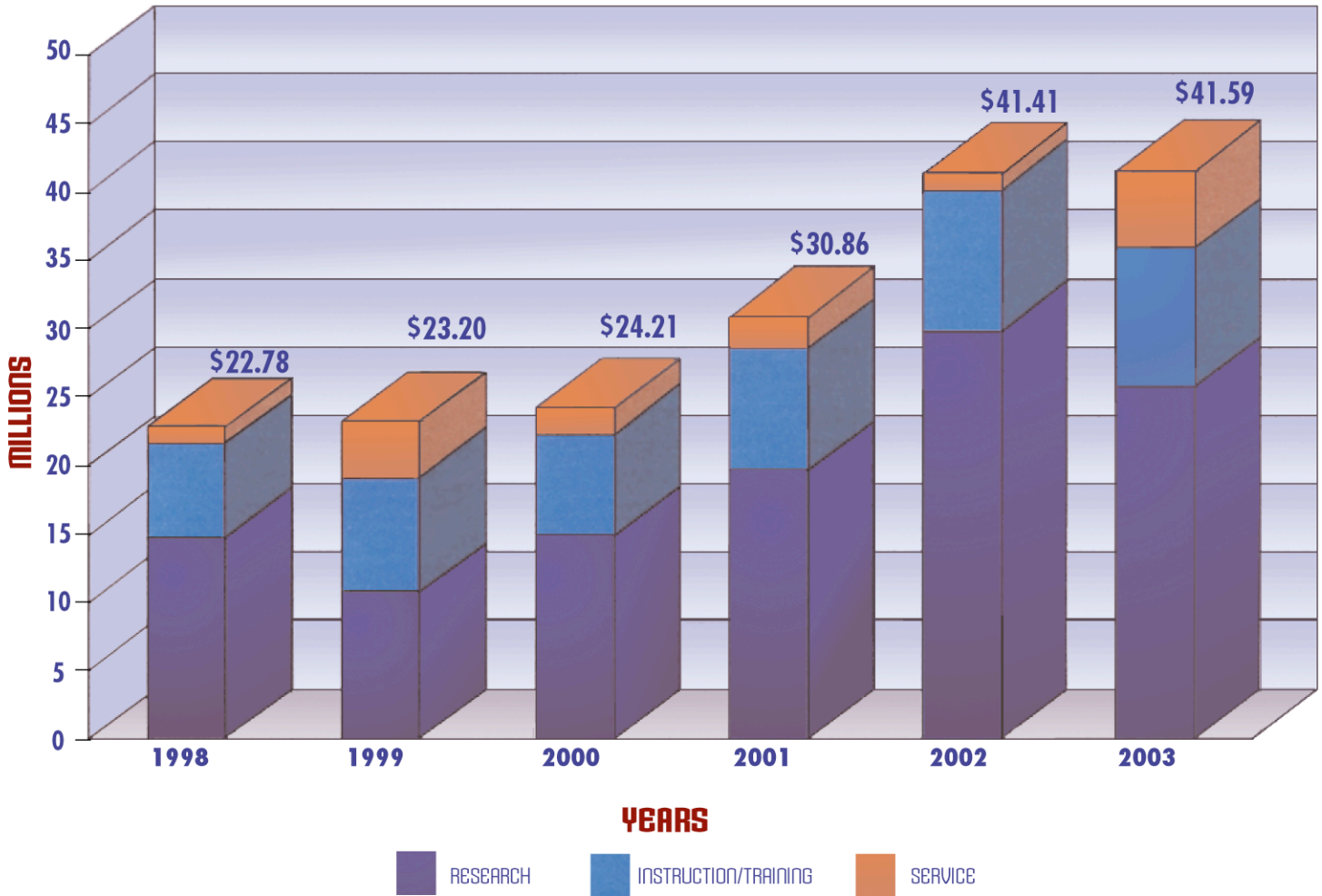
Research		Training/Instruction		Service	
No of Projects	Funding	No of Projects	Funding	No of Projects	Funding
80	25,786,125	42	10,091,109	18	5,716,932

AWARDS BY SOURCE TYPE

Federal	State	Private	Other
\$ 25,343,993	\$ 13,235,546	\$ 827,441	\$ 2,187,186
77 Projects	29 Projects	11 Projects	23 Projects

RESEARCH AND SPONSORED PROJECT AWARDS

FISCAL YEAR 1998 TO FISCAL YEAR 2003



TENNESSEE STATE UNIVERSITY

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