

Performance Indicators and Budgeting

*Board of Control Presentation
January 24, 1997*

AGB Priorities

Number 5, Fall 1995

Monitoring Institutional Performance

by James P. Honan

AGB Priorities

Monitoring Institutional Performance

“Ascertaining how well an institution is doing is a subtle and complex task, and indicators and other measures of institutional performance can be instructive tools in this process.”

AGB Priorities

Monitoring Institutional Performance

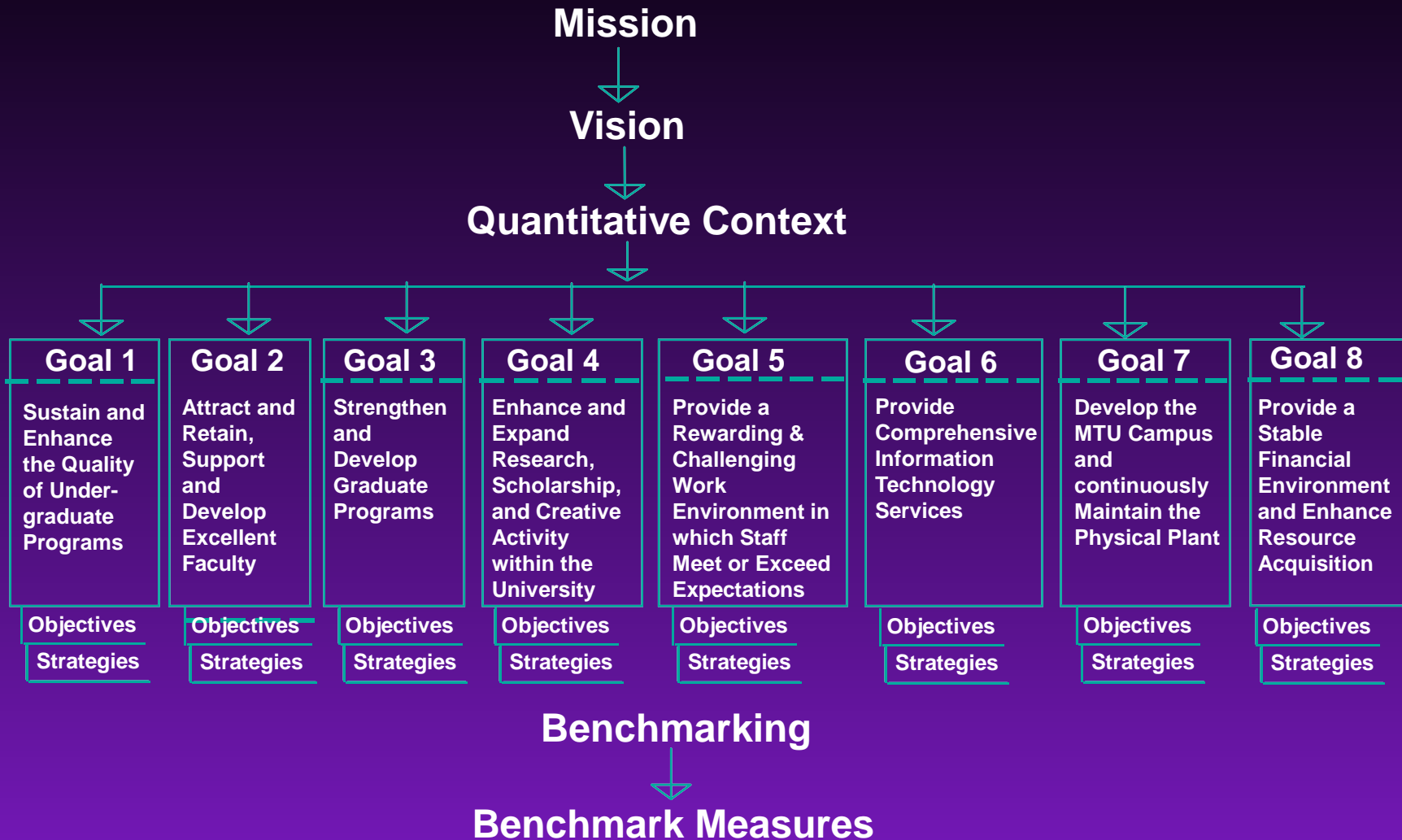
“monitoring institutional performance begins with strategic decisions about the institution and where its leaders want to take it. It uses institution-specific key performance indicators to specify the milestones that mark institutional progress, and it ties strategic goals to budget allocation decisions.”

AGB Priorities

Monitoring Institutional Performance

“Mission and strategic goals represent the desired destination; indicators mark progress on the road. It is essential not to confuse the two.”

Structure of MTU Strategic Planning Document



The University Mission

Michigan Technological University will benefit the State of Michigan and society as a whole through a balance of quality education, theoretical and applied research, and public service. The University will continue to build upon its unique tradition of education in engineering, science, and related disciplines, and to provide the state and its industries with highly qualified graduates. In addition, the University will strive to promote diversity, creativity, leadership, and teamwork, and to educate all of its students to meet the changing needs of a global, technological, diverse, and environmentally sensitive society. The University will seek to enrich and benefit society through its research activities and will assist the community, the state, and the nation in economic and cultural development.

The University Vision Statement

Ten expectations as presented by the President in 1991, reiterated by him in his 1992 State of the University address, and revised in 1993. Michigan Technological University should be:

- ◆ **financially strong (diversified sources of funding, efficiently utilized, in an accountable manner)**
- ◆ **a student-enriching organization**
- ◆ **a model of research and teaching excellence**
- ◆ **willing to be unique, innovative, flexible, and pioneering**
- ◆ **a leader in educating and developing professional engineers, scientists, business leaders, and communicators**

The University Vision Statement

(Continued)

- ◆ a leader in promoting diversity, creativity, leadership, and teamwork
- ◆ an integrated community of faculty, staff, and students dedicated to creating a rewarding and challenging educational environment
- ◆ to provide a strong research environment, thereby attracting high quality faculty and enhancing quality undergraduate and graduate education
- ◆ visible and acclaimed nationally and internationally
- ◆ provide a reward structure that will attract and retain faculty and staff who support the above expectations

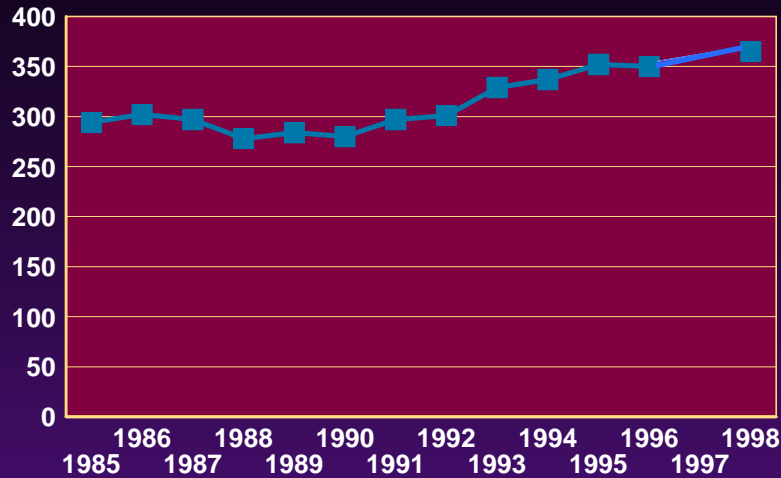
Quantitative Context for Planning

1998

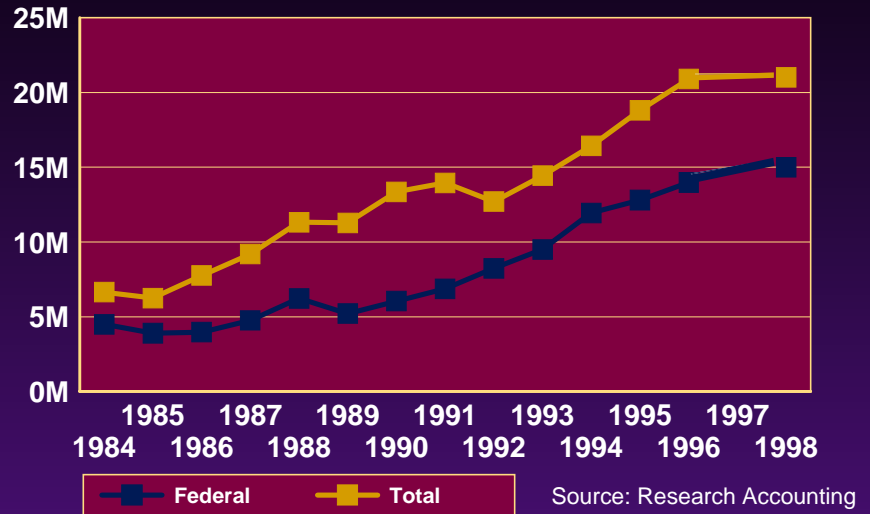
- ◆ Increase faculty size by forty to a total faculty of 365.
- ◆ Increase total enrollments to between 7100 and 7300 students.
- ◆ Increase graduate enrollments to between 800 and 1000.
- ◆ Federally funded research will exceed fifteen million dollars annually.
- ◆ Rank in the top ten among the leading three hundred engineering schools in the number of women enrolled in engineering.
- ◆ Increase the numbers of under-represented minorities at a steady rate, more than doubling between 1992-93 and 1997-98.

Quantitative Data

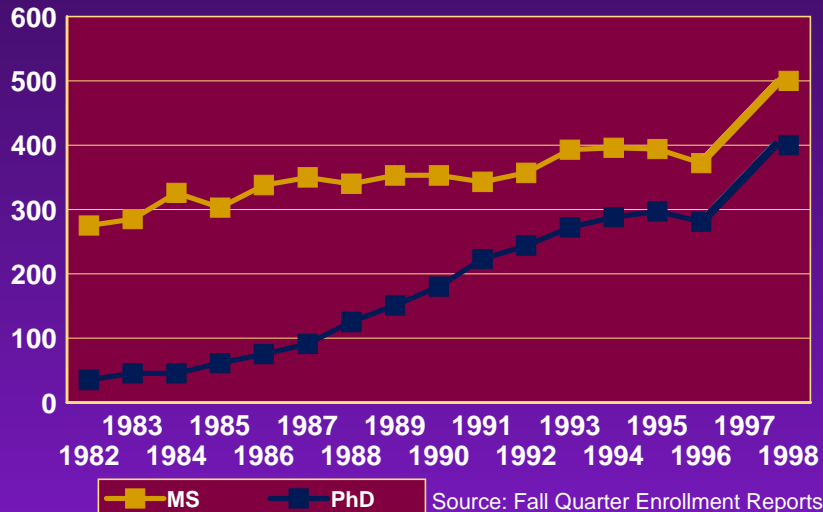
Tenured/Tenure-Track Faculty Headcount



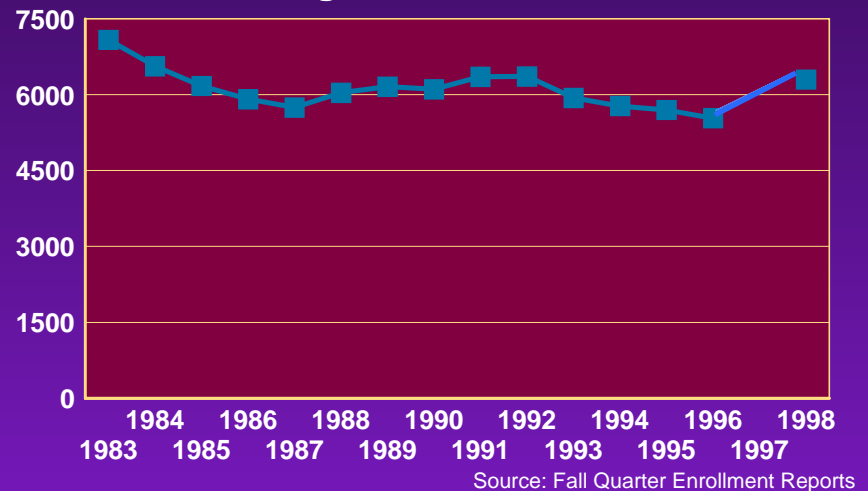
Research Expenditures



Graduate Student Enrollment



Undergraduate Enrollment



University Goals

Goal 1: Sustain and Enhance the Quality of Undergraduate Programs

- ◆ Continuous improvements of undergraduate education
- ◆ Assure the recruitment and retention of a high quality, diverse student body
- ◆ Provide an environment that enhances the quality of student life

Goal 2: Attract and Retain, Support and Develop Excellent Faculty

- ◆ Attract quality faculty
- ◆ Retain and nurture faculty

Goal 3: Strengthen and Develop Graduate Programs

- ◆ Enhance graduate student enrollments, and recruit high quality graduate students
- ◆ Strengthen the graduate program

University Goals

(Continued)

Goal 4: Enhance and Expand Research, Scholarship, and Creative Activity within the University

- ◆ Increase external funding in support of research activities
- ◆ Encourage interdisciplinary scholarship and research

Goal 5: Provide a Rewarding and Challenging Work Environment in which Staff Meet or Exceed Expectations

Goal 6: Provide Comprehensive Information Technology Services

Goal 7: Develop the MTU Campus and Continuously Maintain the Physical Plant

Goal 8: Provide a Stable Financial Environment and Enhance Resource Acquisition

AGB Priorities

Monitoring Institutional Performance

“Performance indicators are essential attributes of benchmarking, which is a systematic method of measuring and comparing the specific work processes of one organization with those of another. Benchmarking provides an external point of reference that can help managers determine how well their institution performs certain key functions.”

Current Benchmark Institutions

Research Universities I

- ◆ Carnegie Mellon
- ◆ Georgia Tech

Research Universities II

- ◆ Lehigh
- ◆ Rensselaer Polytechnic Institute

Doctoral Universities I

- ◆ UM - Rolla

Doctoral Universities II

- ◆ Clarkson
- ◆ Colorado School of Mines

Master's I

- ◆ California Polytechnic State Univ - San Luis Obispo

AGB Priorities

Monitoring Institutional Performance

“Every institution uses a variety of quantitative means to understand how it is performing. The most common tools are financial statements, which provide a general picture of institutional viability. . . . a balanced budget actually tells little about the underlying condition of the components that constitute the budget. For example, a budget can be balanced by deferring maintenance or underpaying faculty--both conditions that can lead to future financial or academic difficulty.”

Benchmark Measures

Goal 1: Sustain and Enhance the Quality of Undergraduate Programs

- ◆ Instructional Expenditures (Per Student)
- ◆ Student Financial Aid Expenditures (Per Student)
- ◆ Student Services Expenditures (Per Student)
- ◆ Freshman Retention Rates
- ◆ Student Enrollments by Gender (Percentage)
- ◆ Student Enrollments by Ethnicity (Percentage)
- ◆ Student to Faculty Ratio

Goal 2: Attract and Retain, Support and Develop Excellent Faculty

- ◆ Average Faculty Salaries by Rank
- ◆ Ethnic Distribution for Tenured/Tenure-Track Faculty
- ◆ Gender Distribution for Tenured/Tenure-Track Faculty

Benchmark Measures

(Continued)

Goal 3: Strengthen and Develop Graduate Programs

- ◆ Graduate Student Enrollment (Percentage)
- ◆ Graduate Student Support (Source of Funds)

Goal 4: Enhance and Expand Research, Scholarship, and Creative Activity within the University

- ◆ Research Expenditures (Percentage)
- ◆ Total R&D Expenditures per Faculty Member

Goal 5: Develop a Rewarding and Challenging Environment in which Staff Meet or Exceed Expectations

- ◆ Academic Support Expenditures (Percentage)
- ◆ Institutional Support Expenditures (Percentage)

Benchmark Measures

(Continued)

Goal 6: Provide Comprehensive Information Technology Services which Support Academic Programs

- ◆ Library Expenditures (Percentage and Per Student)

Goal 7: Develop the MTU Campus and Continuously Maintain the Physical Plant

- ◆ Plant Operation and Maintenance Expenditures (Percentage)

Goal 8: Provide a Stable Financial Environment and Enhance Resource Acquisition

- ◆ Current Funds Balance (Percentage)
- ◆ Balance Owed Physical Plant (Percentage)

AGB Priorities

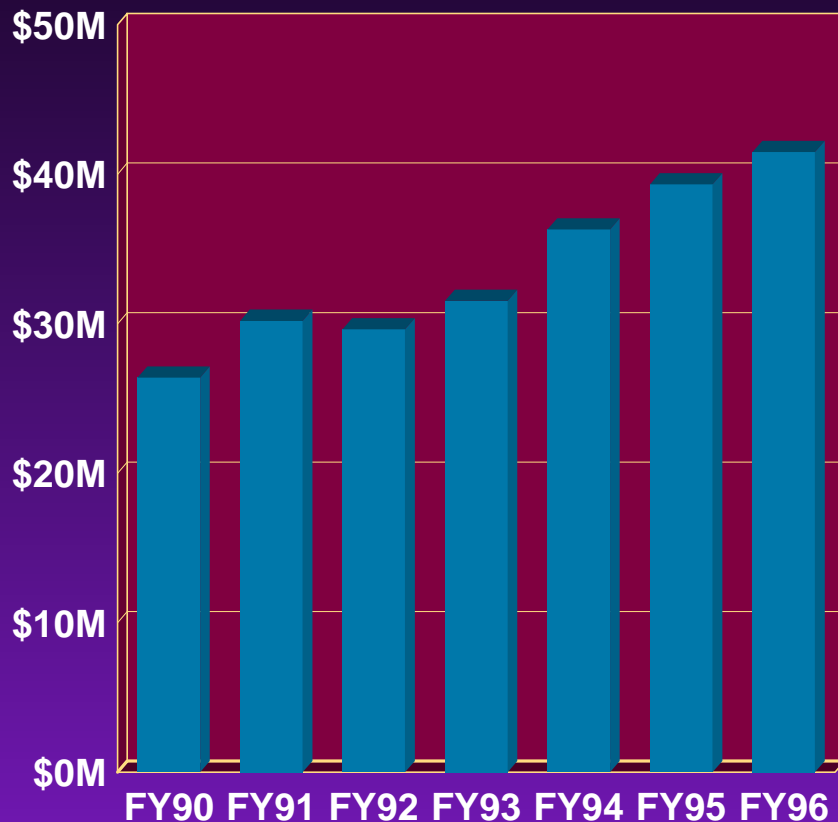
Monitoring Institutional Performance

“Increasingly, institutions are finding this approach useful for external-relations purposes, as well as for internal planning and budget allocation.”

Benchmark Measures

Goal 1: Sustain and Enhance the Quality of Undergraduate Programs

MTU Instructional Expenditures



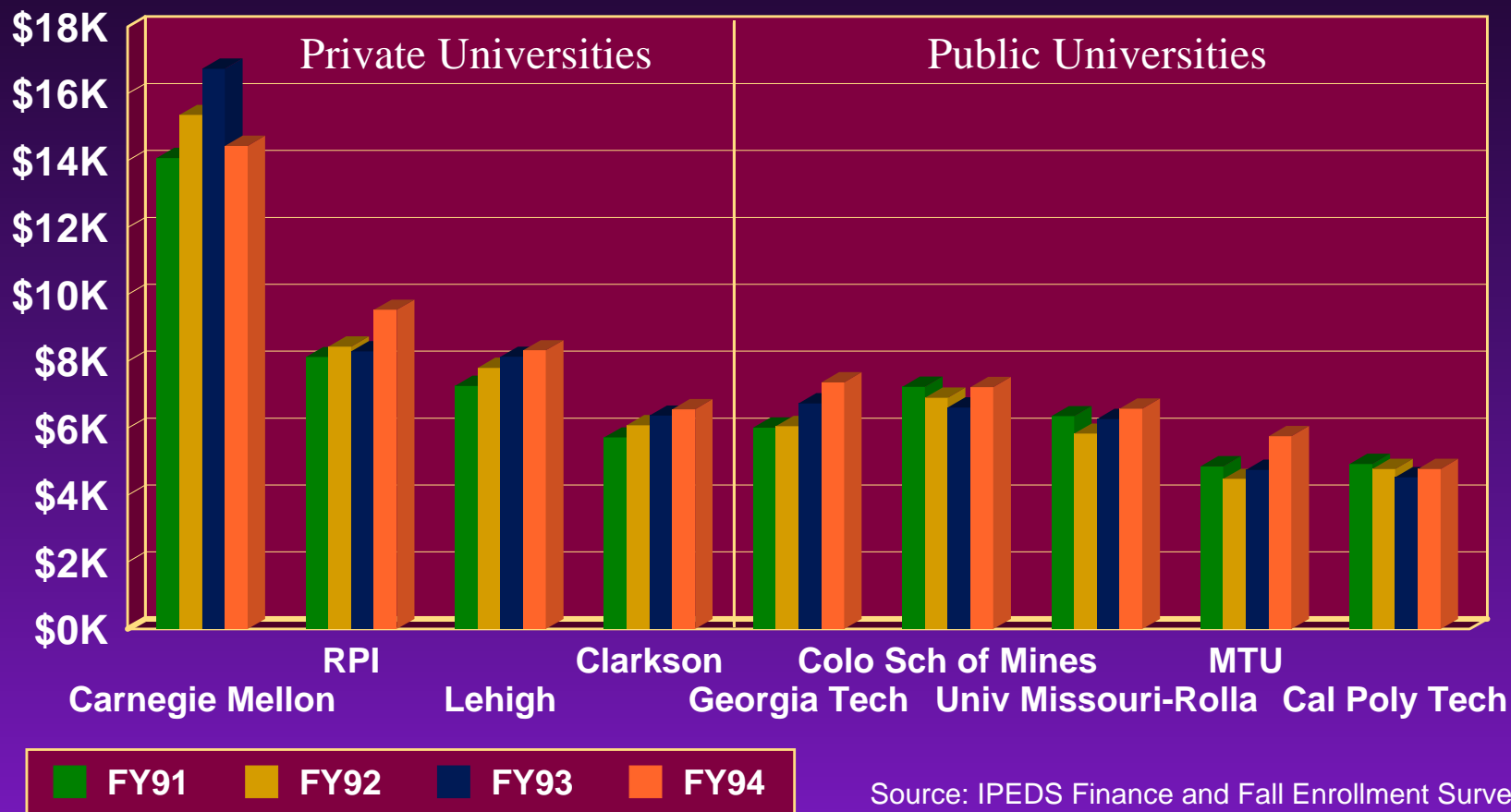
Source: IPEDS Finance Surveys

- ◆ Increase in Faculty Size
- ◆ Student Computing Labs
- ◆ AACSB (Business)

Benchmark Measures

Goal 1: Sustain and Enhance the Quality of Undergraduate Programs

Instructional Expenditures (per FYES)

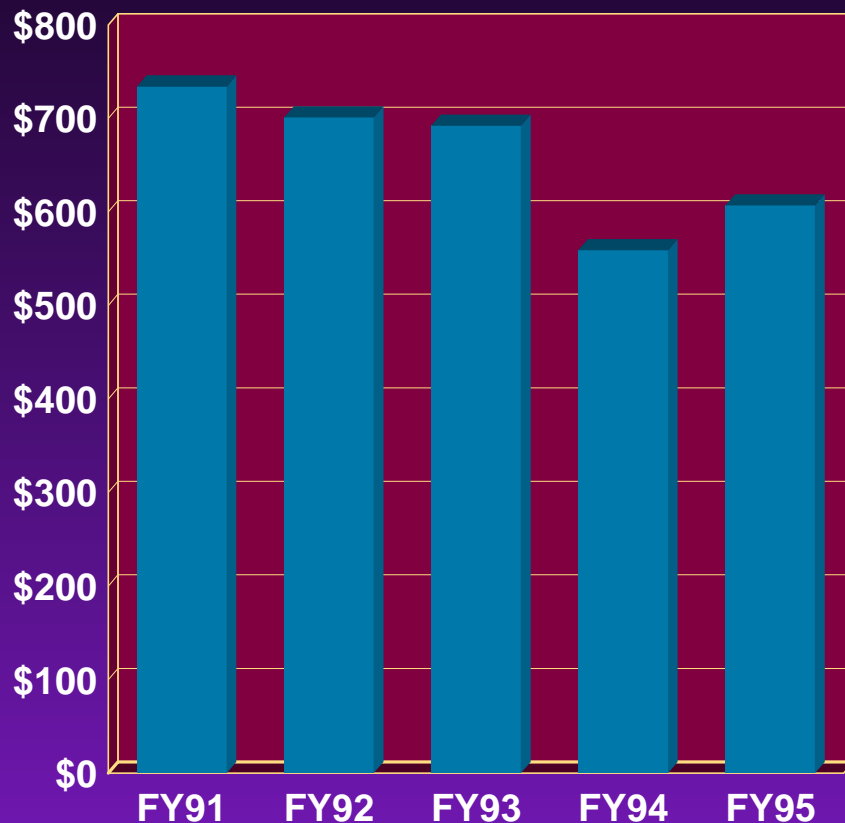


Source: IPEDS Finance and Fall Enrollment Surveys

Benchmark Measures

Goal 1: Sustain and Enhance the Quality of Undergraduate Programs

MTU Student Services per FYES



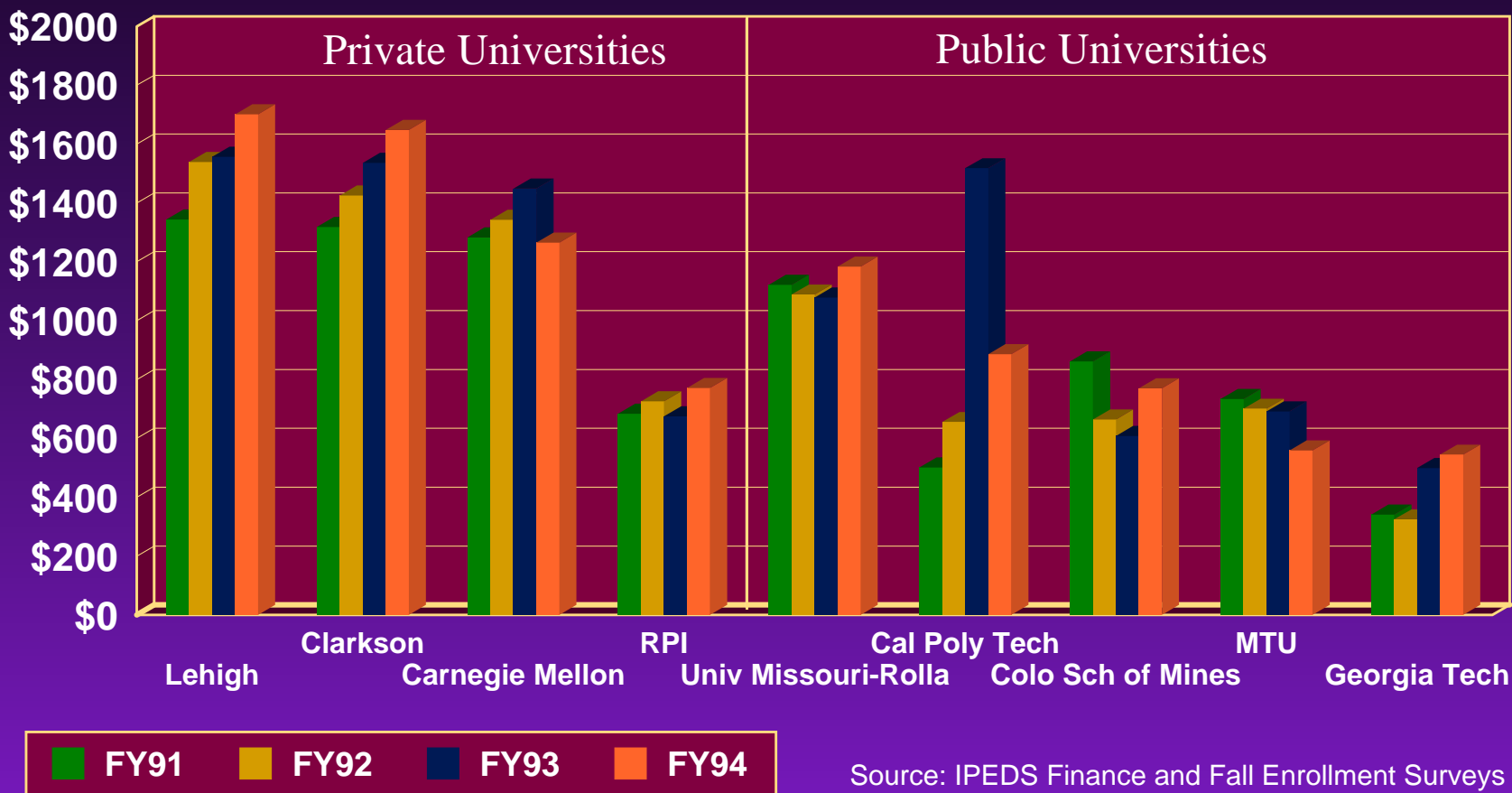
Source: IPEDS Finance Surveys

- ◆ Director of Orientation/
First-Year Programs
- ◆ Coordinator of Residence Life
- ◆ Financial Aid Information
Specialist
- ◆ Job Fairs
- ◆ Retention Task Force
- ◆ Leadership Training

Benchmark Measures

Goal 1: Sustain and Enhance the Quality of Undergraduate Programs

Student Services Expenditures (per FYES)

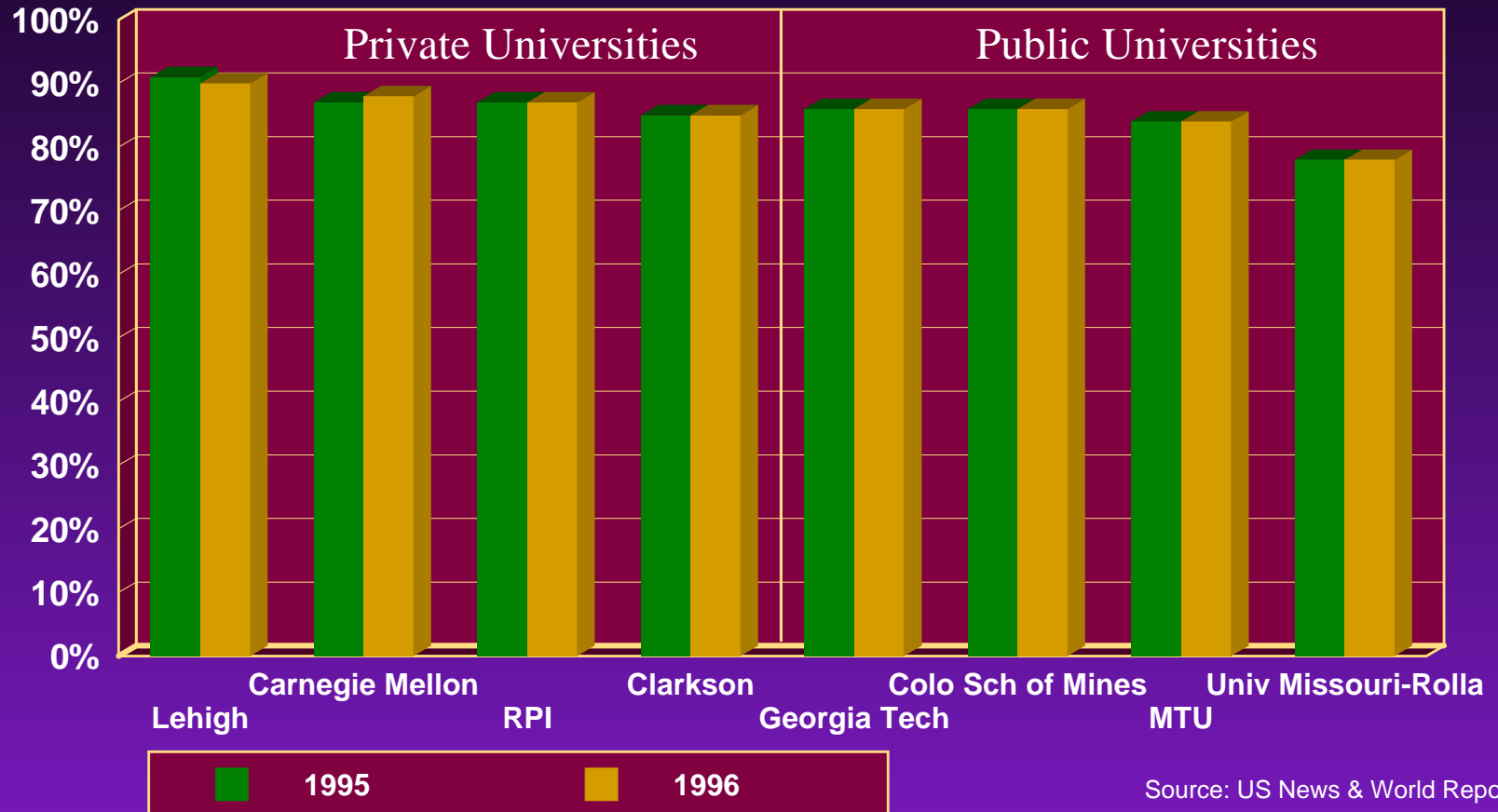


Source: IPEDS Finance and Fall Enrollment Surveys

Benchmark Measures

Goal 1: Sustain and Enhance the Quality of Undergraduate Programs

Freshman Retention Rates

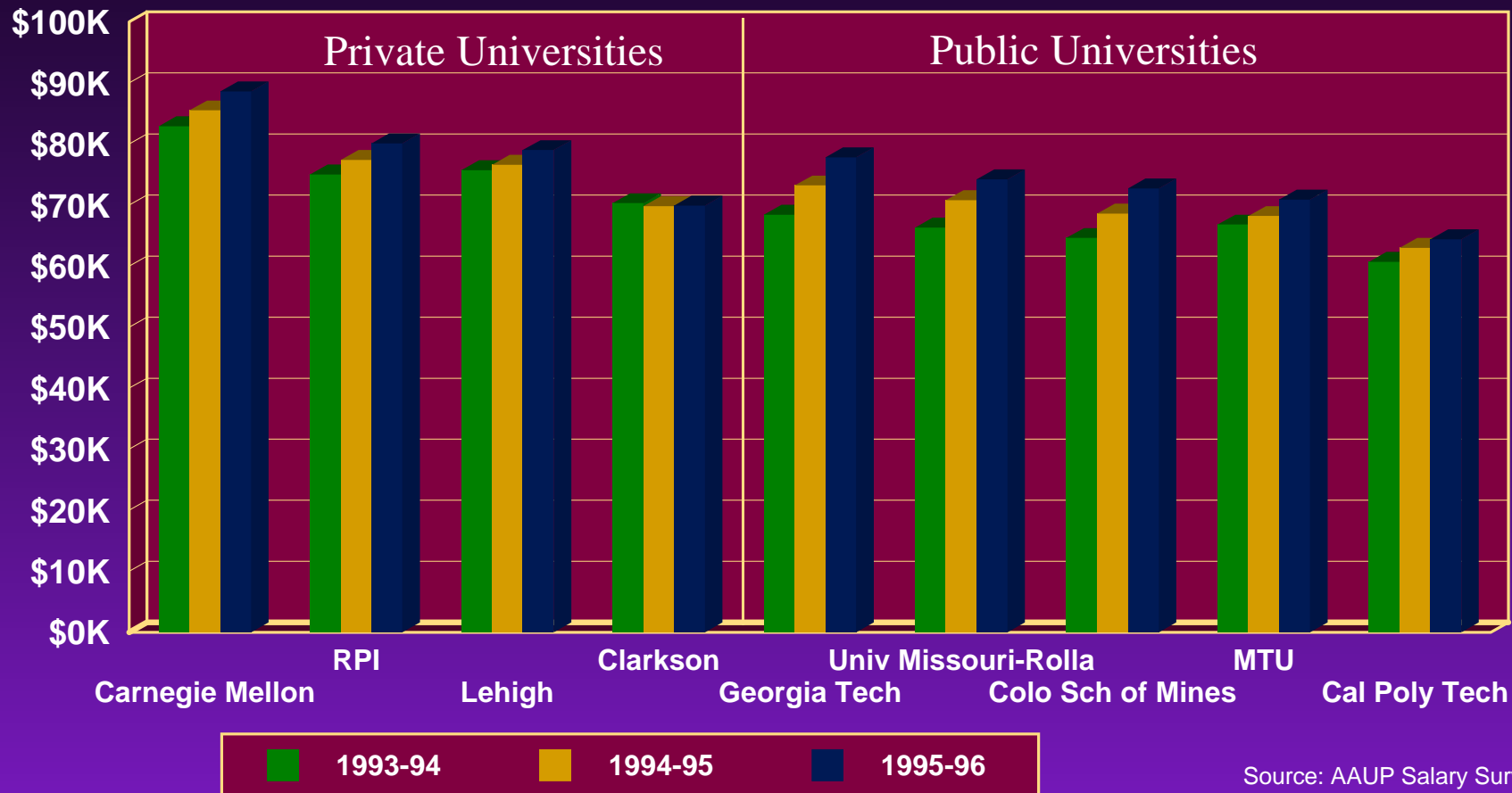


Source: US News & World Report

Benchmark Measures

Goal 2: Attract and Retain, Support and Develop Excellent Faculty

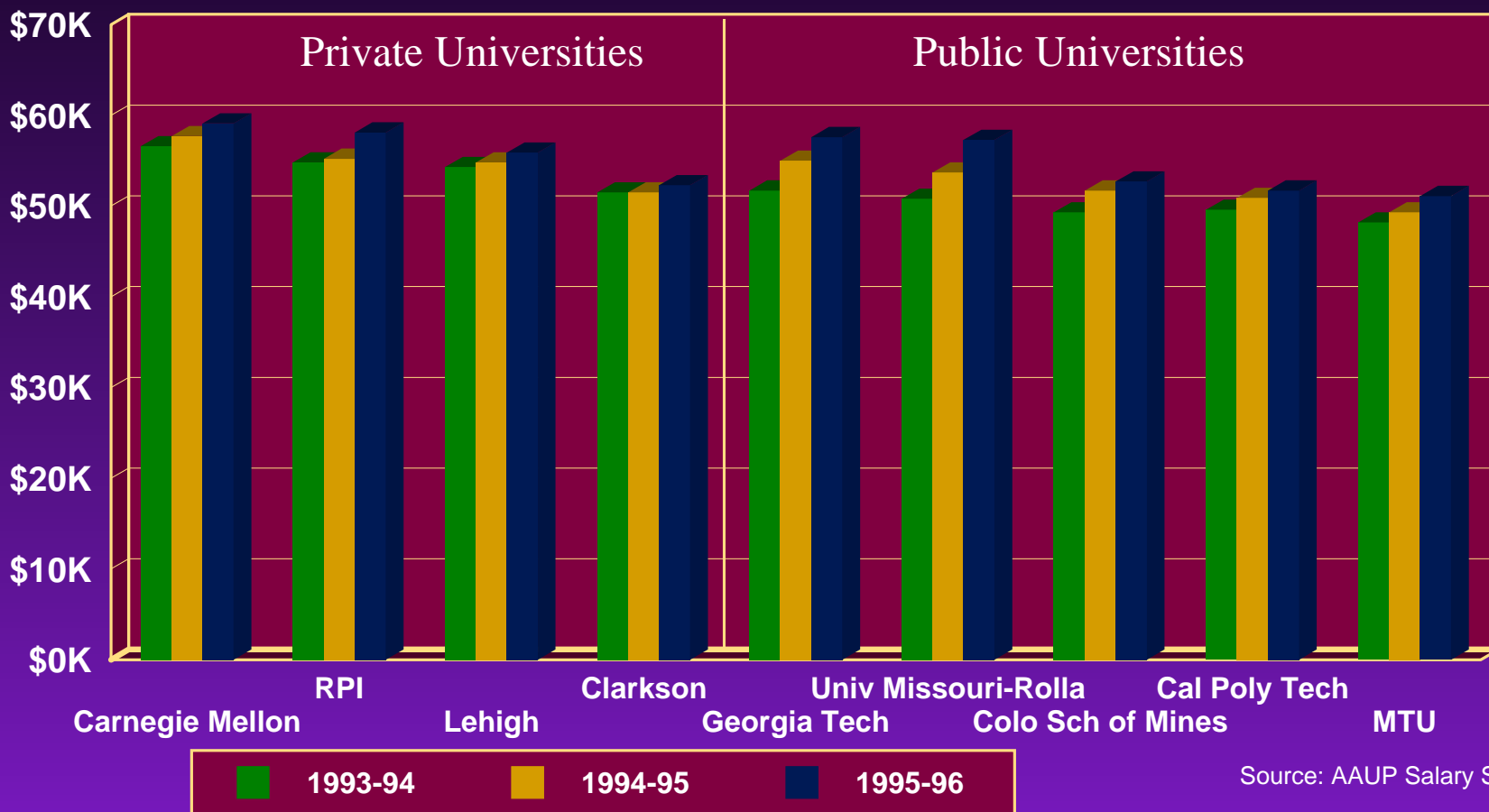
Average Faculty Salaries - Professors



Benchmark Measures

Goal 2: Attract and Retain, Support and Develop Excellent Faculty

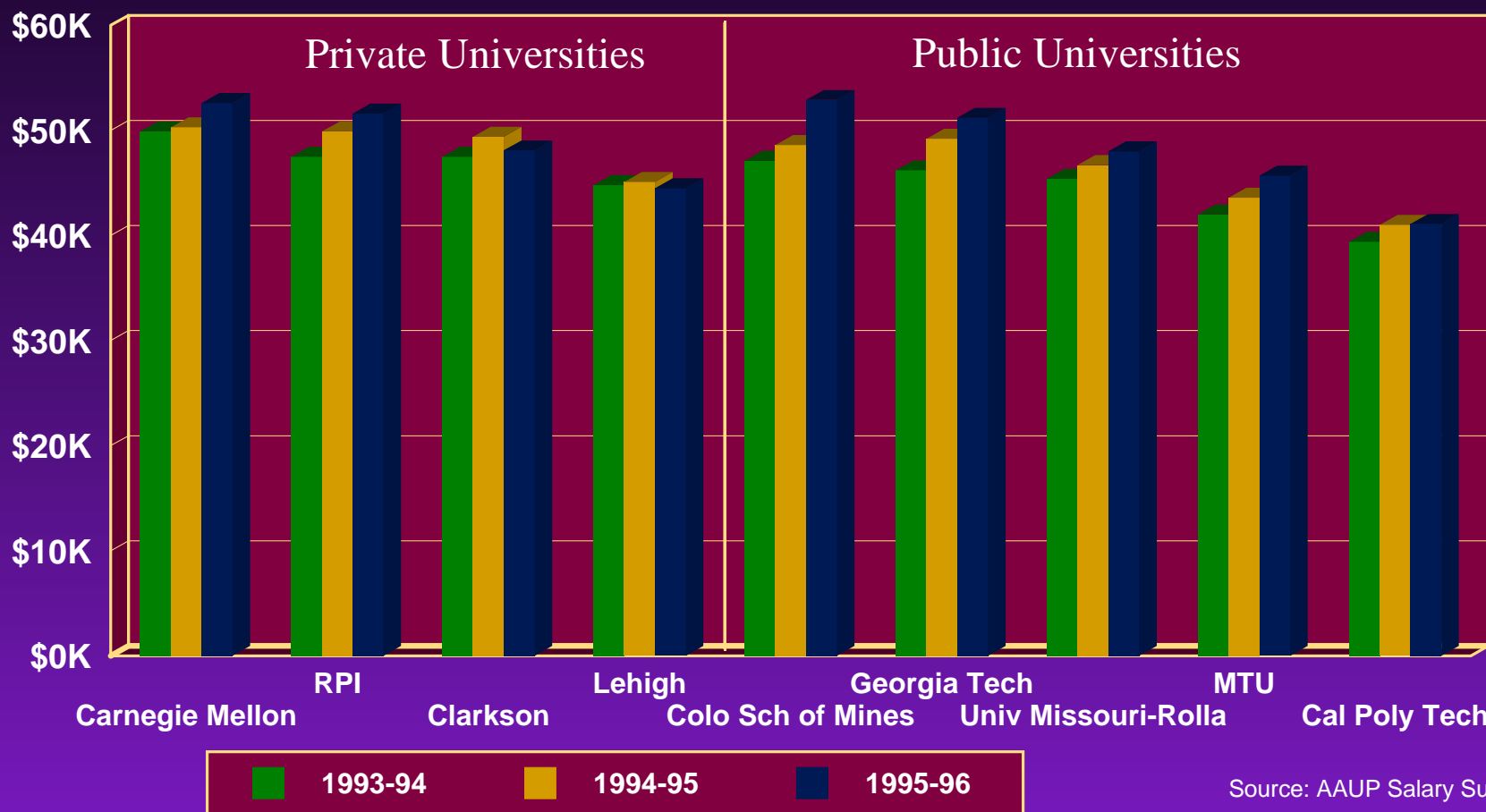
Average Faculty Salaries - Associate Professors



Benchmark Measures

Goal 2: Attract and Retain, Support and Develop Excellent Faculty

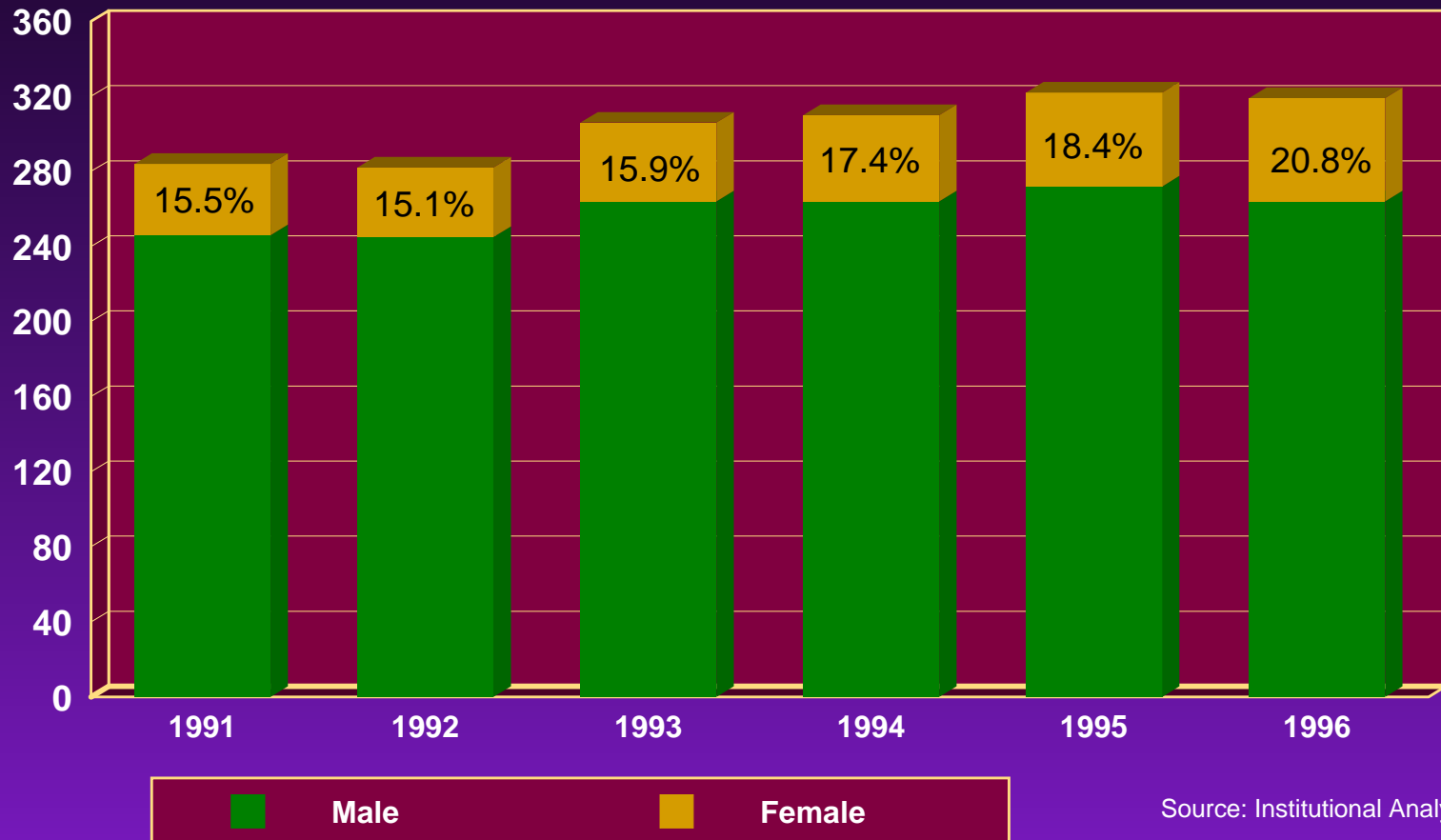
Average Faculty Salaries - Assistant Professors



Benchmark Measures

Goal 2: Attract and Retain, Support and Develop Excellent Faculty

MTU Tenured/Tenure-Track Gender Distribution

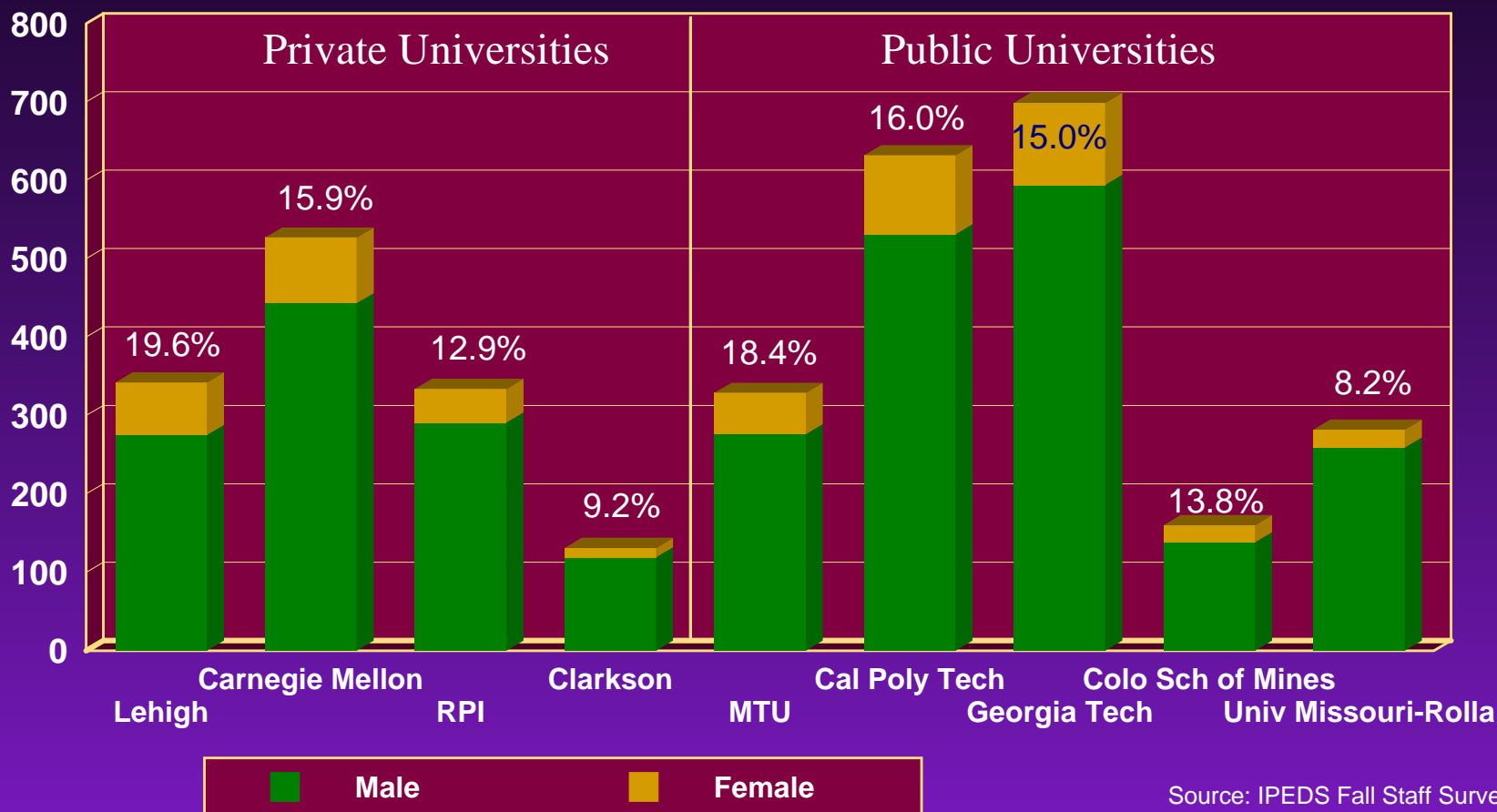


Source: Institutional Analysis

Benchmark Measures

Goal 2: Attract and Retain, Support and Develop Excellent Faculty

Tenured/Tenure-Track Gender Distribution - 1995

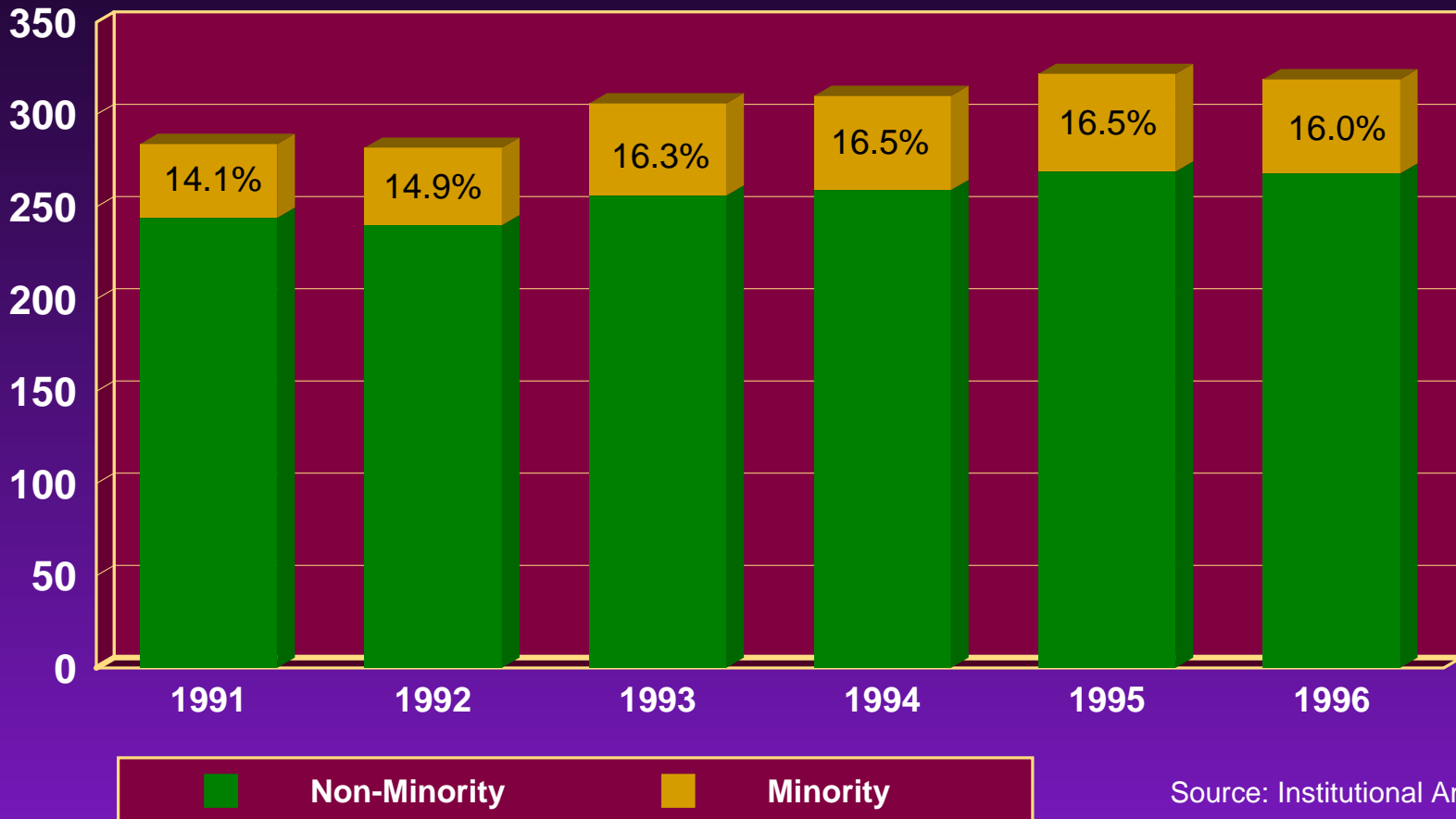


Source: IPEDS Fall Staff Survey

Benchmark Measures

Goal 2: Attract and Retain, Support and Develop Excellent Faculty

MTU Tenured/Tenure-Track Ethnic Distribution

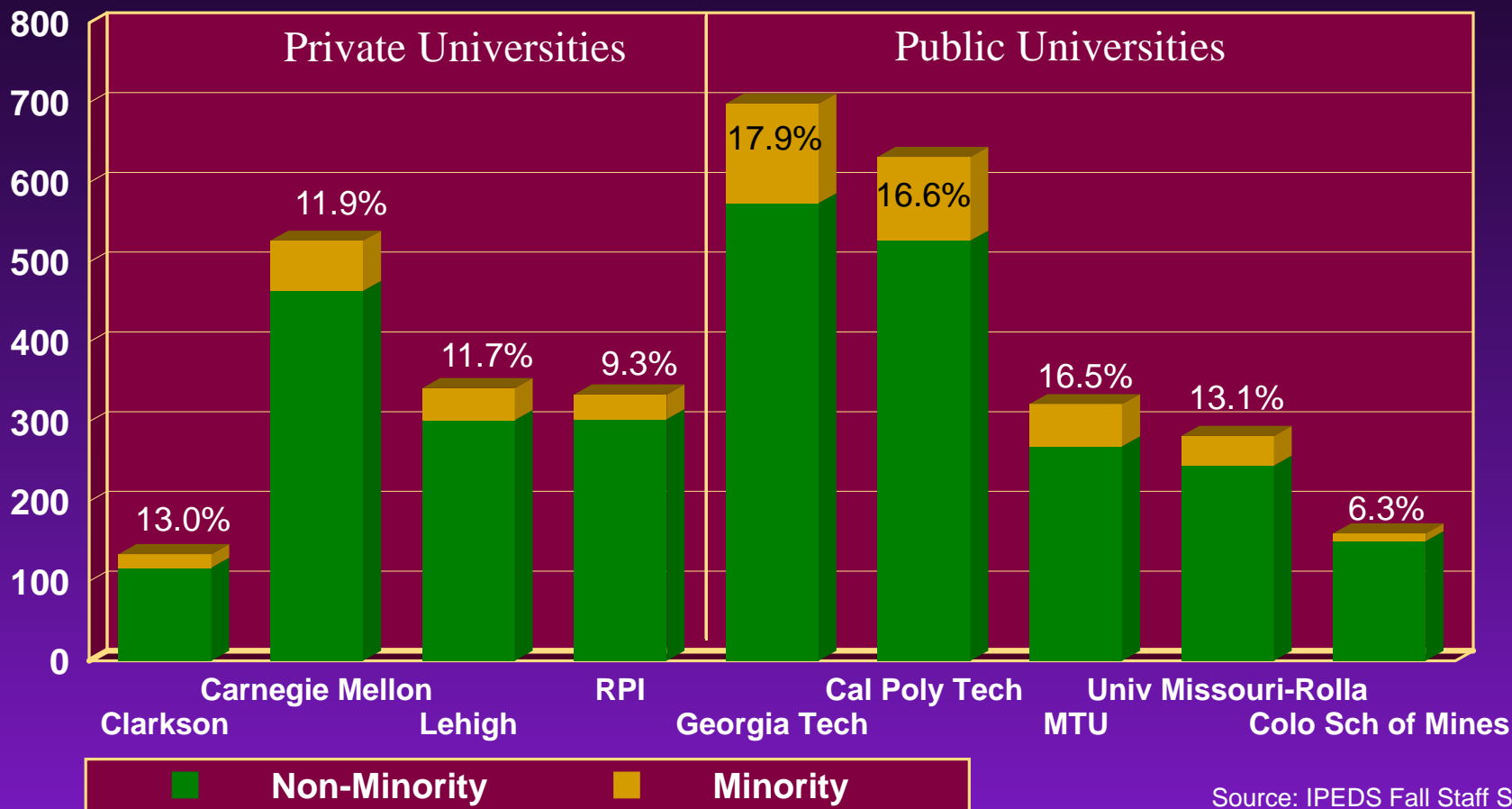


Source: Institutional Analysis

Benchmark Measures

Goal 2: Attract and Retain, Support and Develop Excellent Faculty

Tenured/Tenure-Track Faculty Ethnic Distribution - 1995

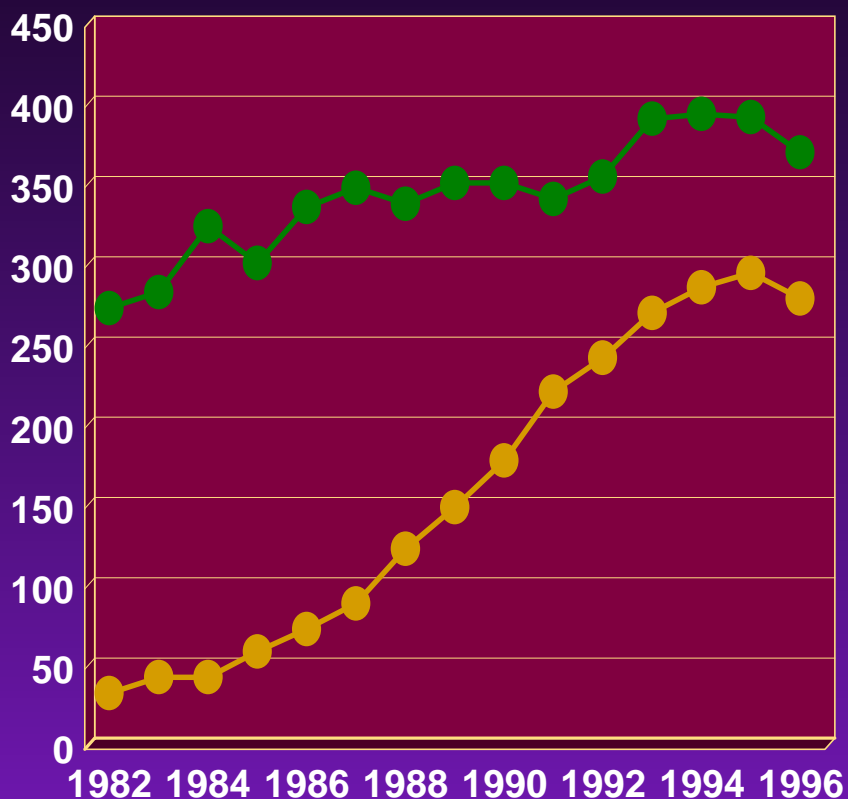


Source: IPEDS Fall Staff Survey

Benchmark Measures

Goal 3: Strengthen and Develop Graduate Programs

MTU Graduate Enrollments



- ◆ PhD in Computational Science and Engineering
- ◆ PhD in Geological Engineering
- ◆ MS in Industrial Archaeology
- ◆ Additional 36 GTA's

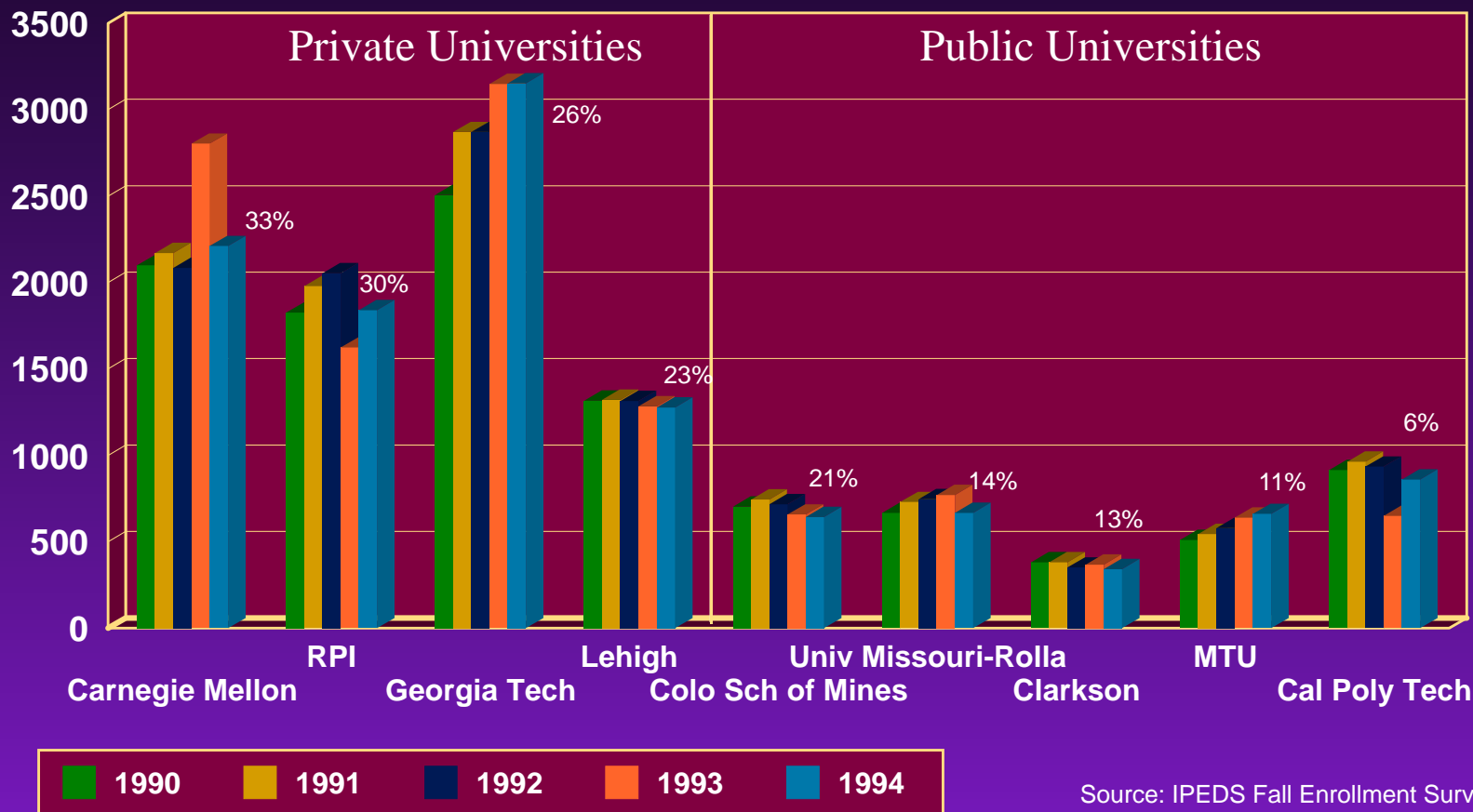


Source: Fall Enrollment Reports

Benchmark Measures

Goal 3: Strengthen and Develop Graduate Programs

Graduate Student Enrollment

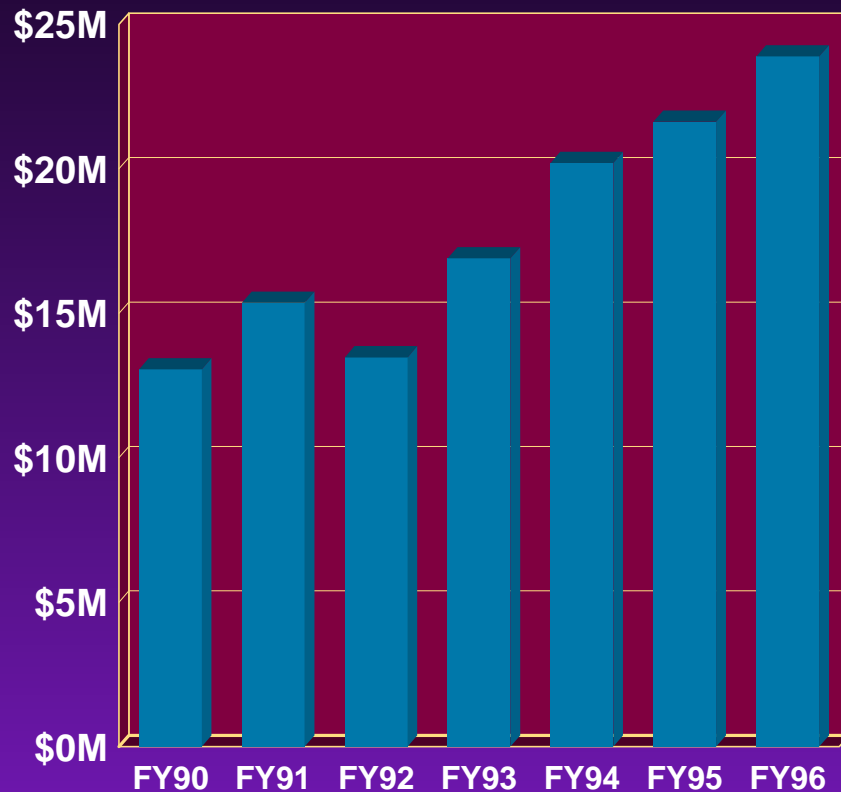


Source: IPEDS Fall Enrollment Surveys

Benchmark Measures

Goal 4: Enhance and Expand Research, Scholarship, and Creative Activity within the University

MTU Research Expenditures



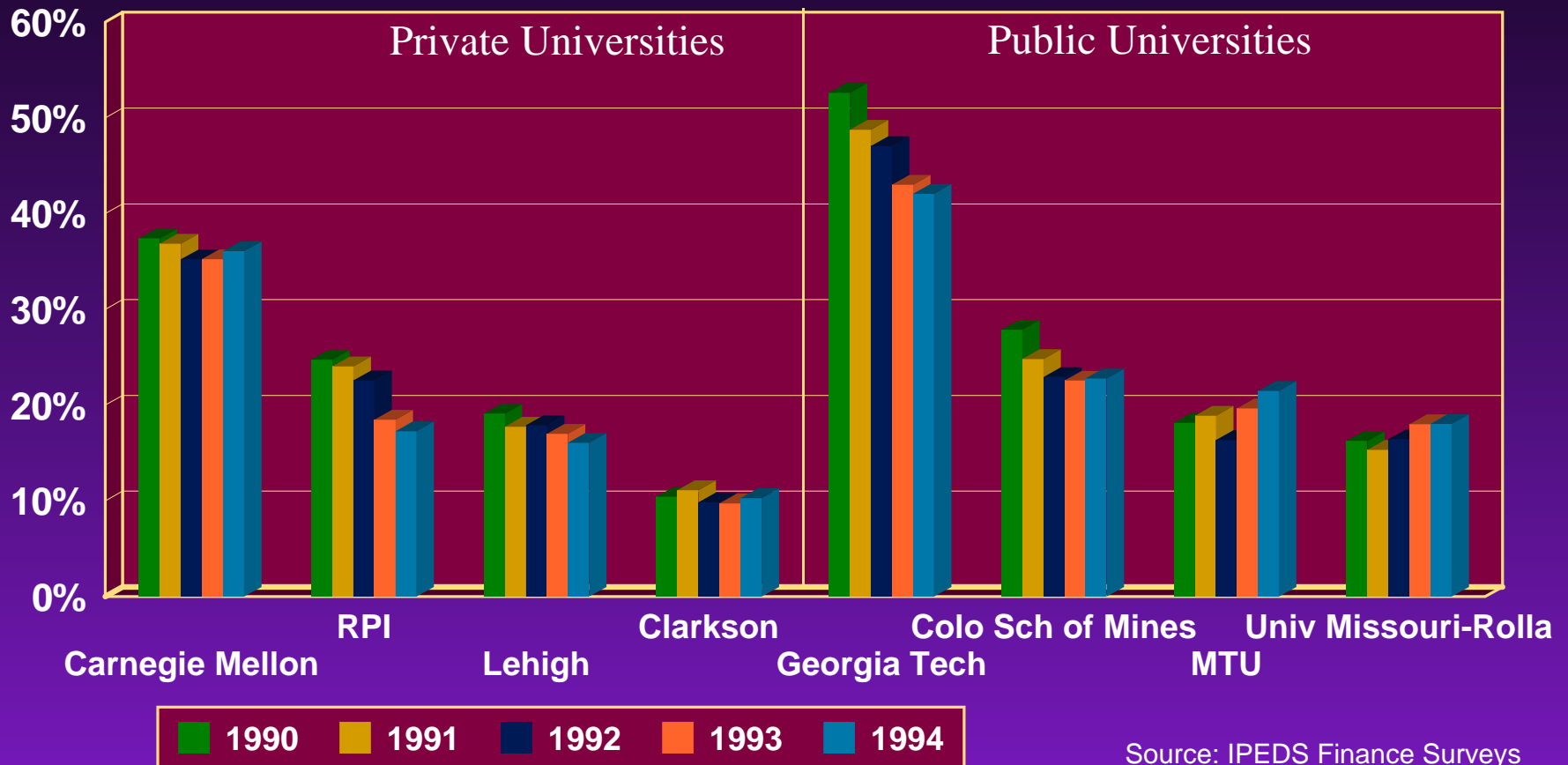
Source: IPEDS Finance Surveys

- ◆ Increase Faculty Size
- ◆ Grant Cost Share Pool
- ◆ Faculty Development Grants
- ◆ GA Program

Benchmark Measures

Goal 4: Enhance and Expand Research, Scholarship, and Creative Activity within the University

Research Expenditures (Percentage of Total)

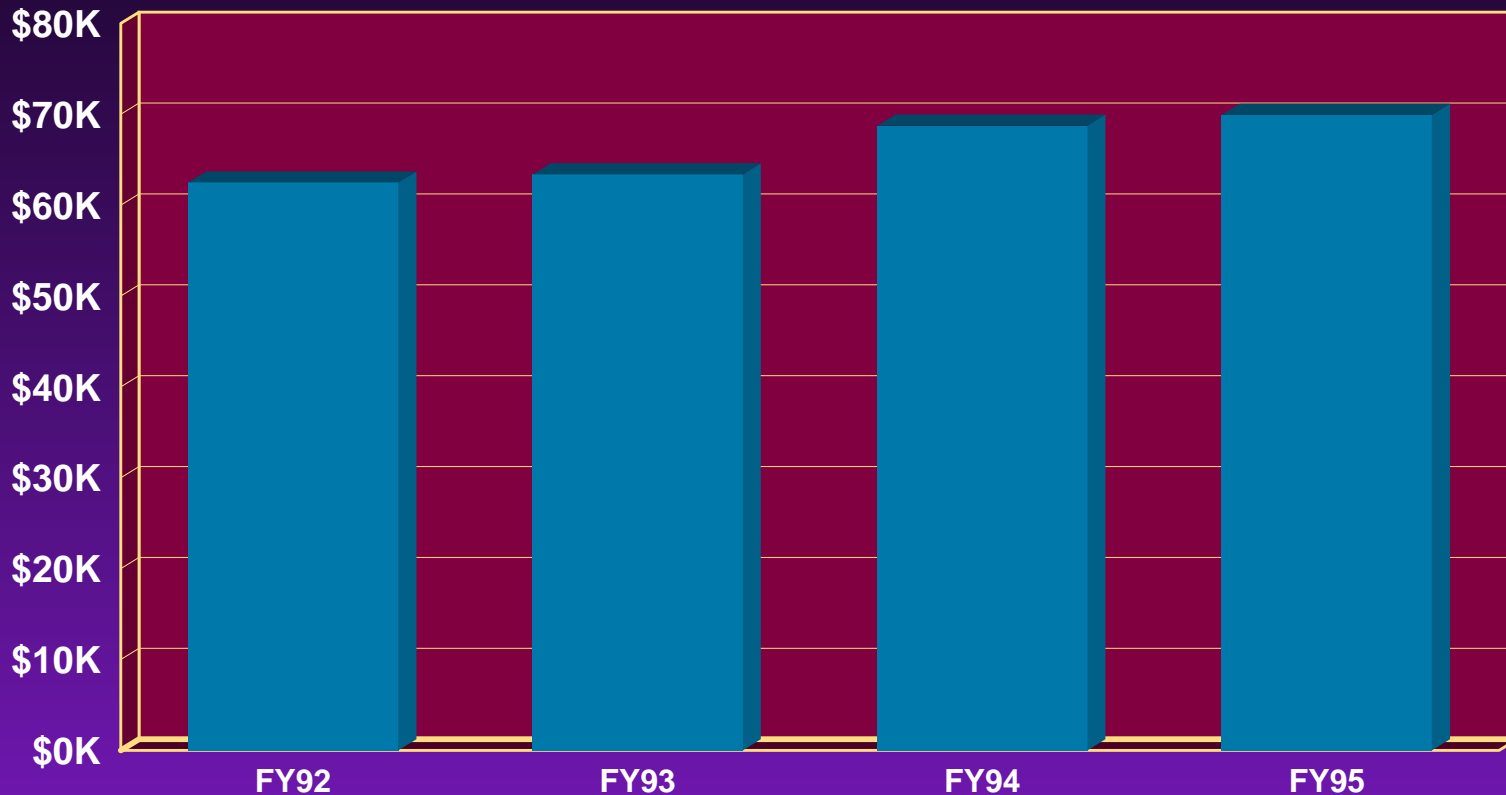


Source: IPEDS Finance Surveys

Benchmark Measures

Goal 4: Enhance and Expand Research, Scholarship, and Creative Activity within the University

MTU R&D Expenditures per Faculty Member

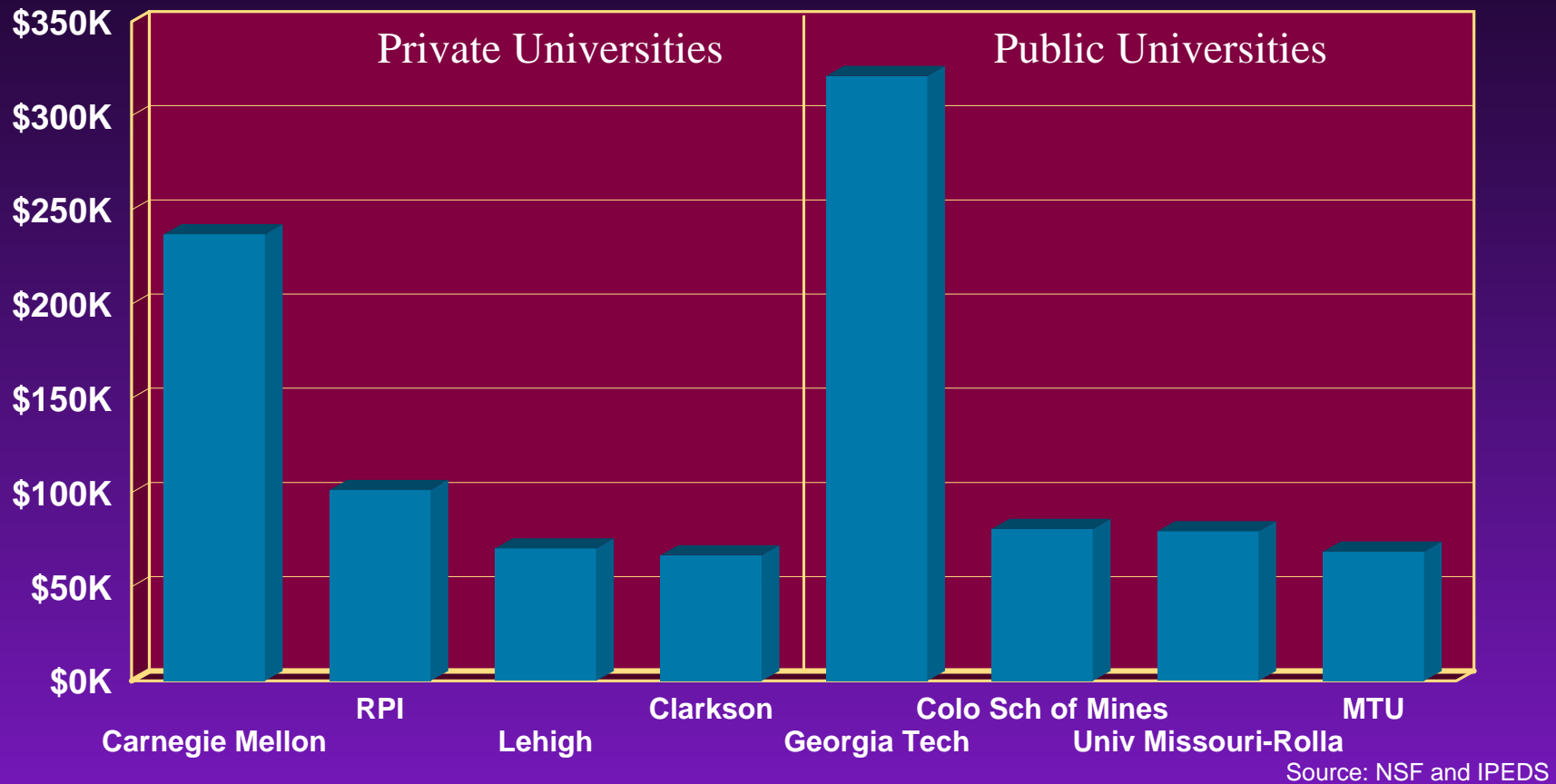


Source: NSF and IPEDS

Benchmark Measures

Goal 4: Enhance and Expand Research, Scholarship, and Creative Activity within the University

R&D Expenditures per Faculty Member - 1994



Benchmark Measures

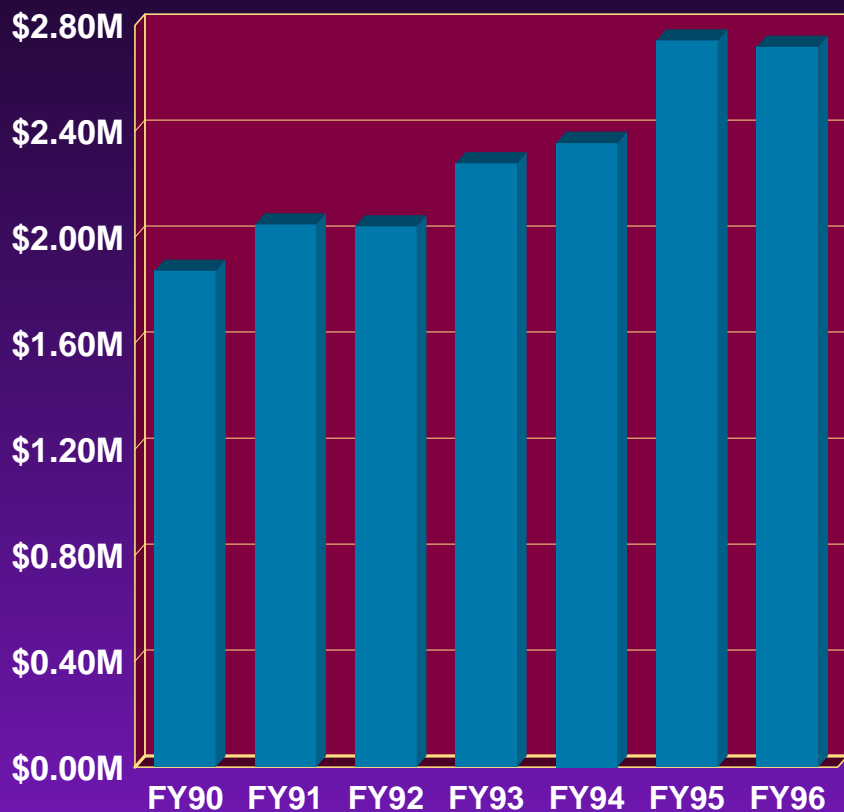
Goal 5: Develop a Rewarding and Challenging Environment in which Staff Meet or Exceed Expectations

- ◆ **Progress toward Salary Parity**
 - ◆ 6.5% - 93/94
 - ◆ 3% - 94/95
 - ◆ 4% - 95/96 & 96/97
- ◆ **Sick Leave Pool**
- ◆ **Wellness Program**
- ◆ **Staff Handbook**
- ◆ **University Senate Constituency Expansion**

Benchmark Measures

Goal 6: Provide Comprehensive Information Technology Services which Support Academic Programs

MTU Library Expenditures



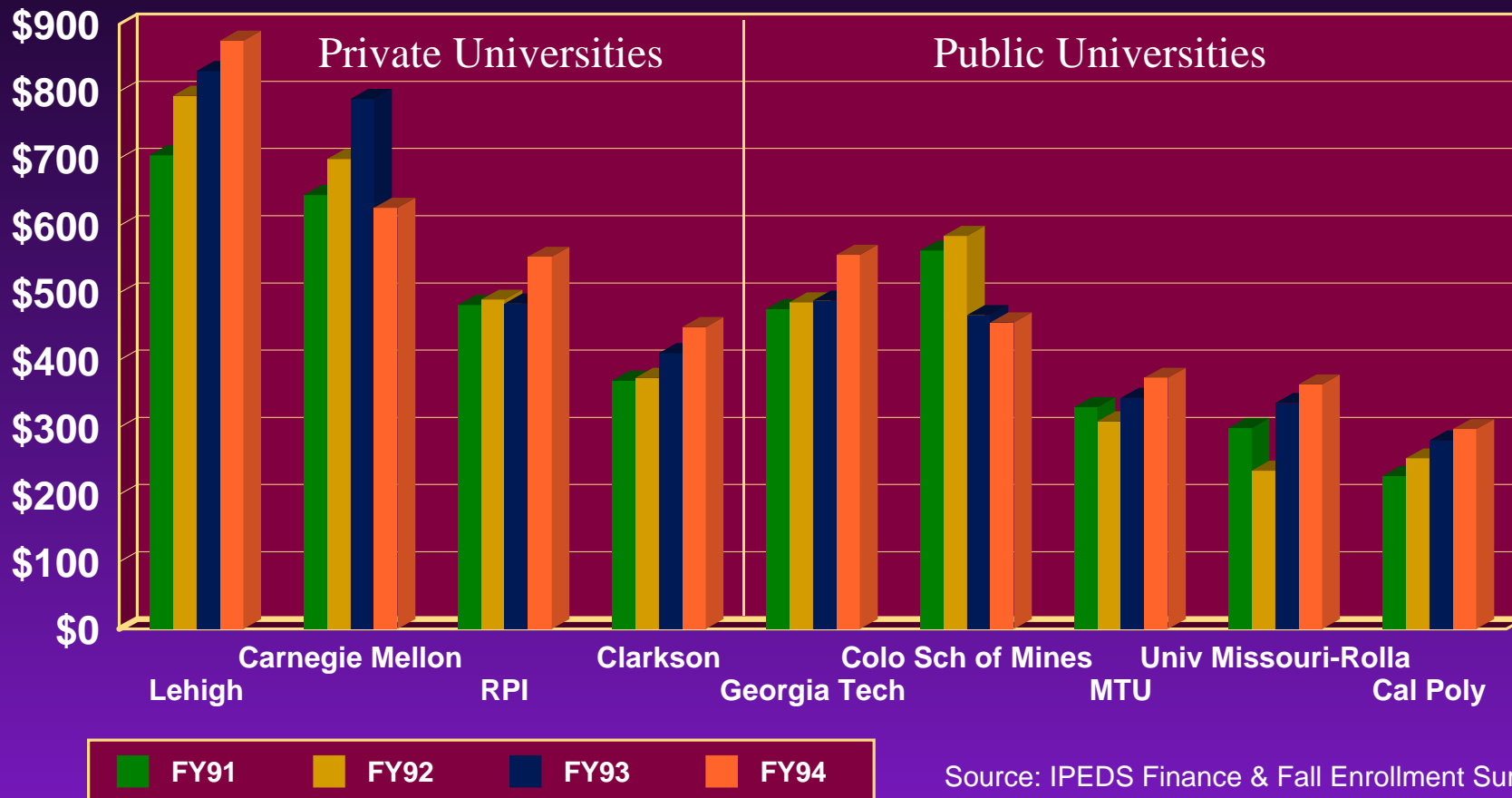
Source: IPEDS Finance Surveys

- ◆ Library Automation Project
- ◆ Electronic Database Access
- ◆ Banner
- ◆ Faculty/Staff Computing Support
- ◆ Dorm Net Project
- ◆ Banner Web Site

Benchmark Measures

Goal 6: Provide Comprehensive Information Technology Services which Support Academic Programs

Library Expenditures per FYES

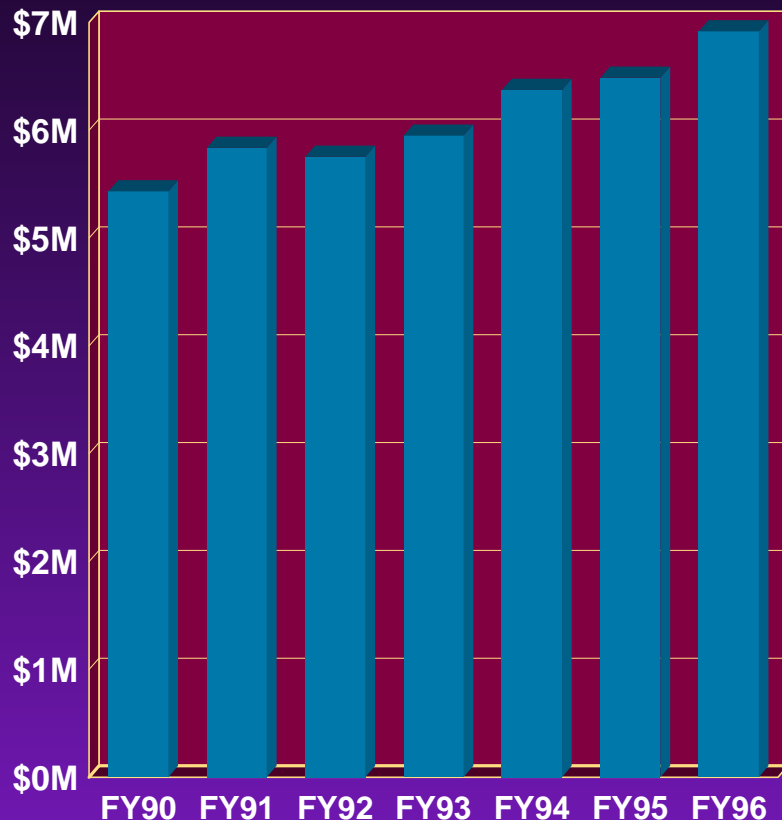


Source: IPEDS Finance & Fall Enrollment Surveys

Benchmark Measures

Goal 7: Develop the MTU Campus and Continuously Maintain the Physical Plant

MTU Plant Operation Expenditures



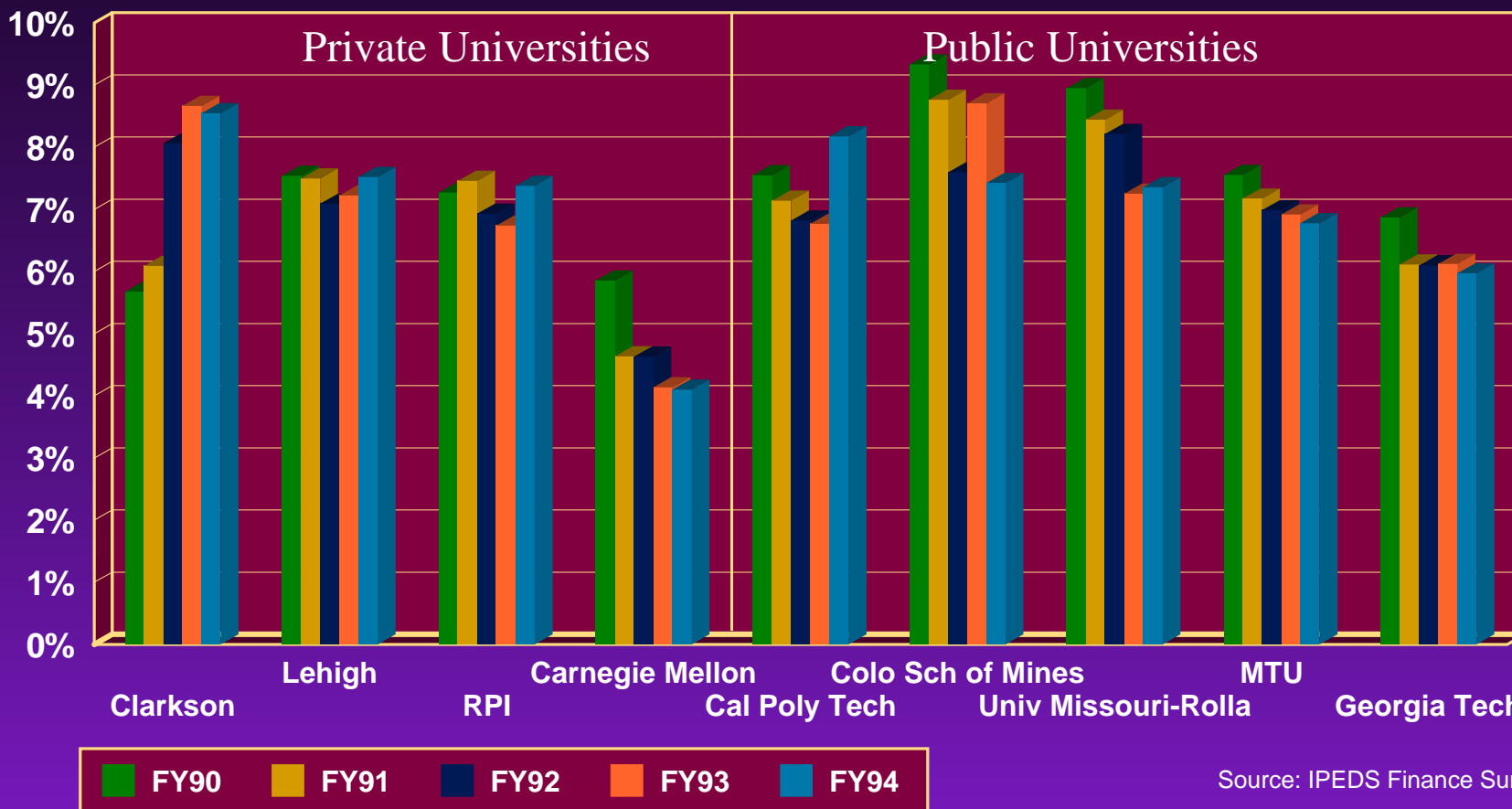
Source: IPEDS Finance Surveys

- ◆ Preventive Maintenance Program
- ◆ Capital Projects
 - Forestry Addition
 - PAC
 - ESE
 - Meese Center

Benchmark Measures

Goal 7: Develop the MTU Campus and Continuously Maintain the Physical Plant

Plant Operation & Maintenance Expenditures (Percentage)

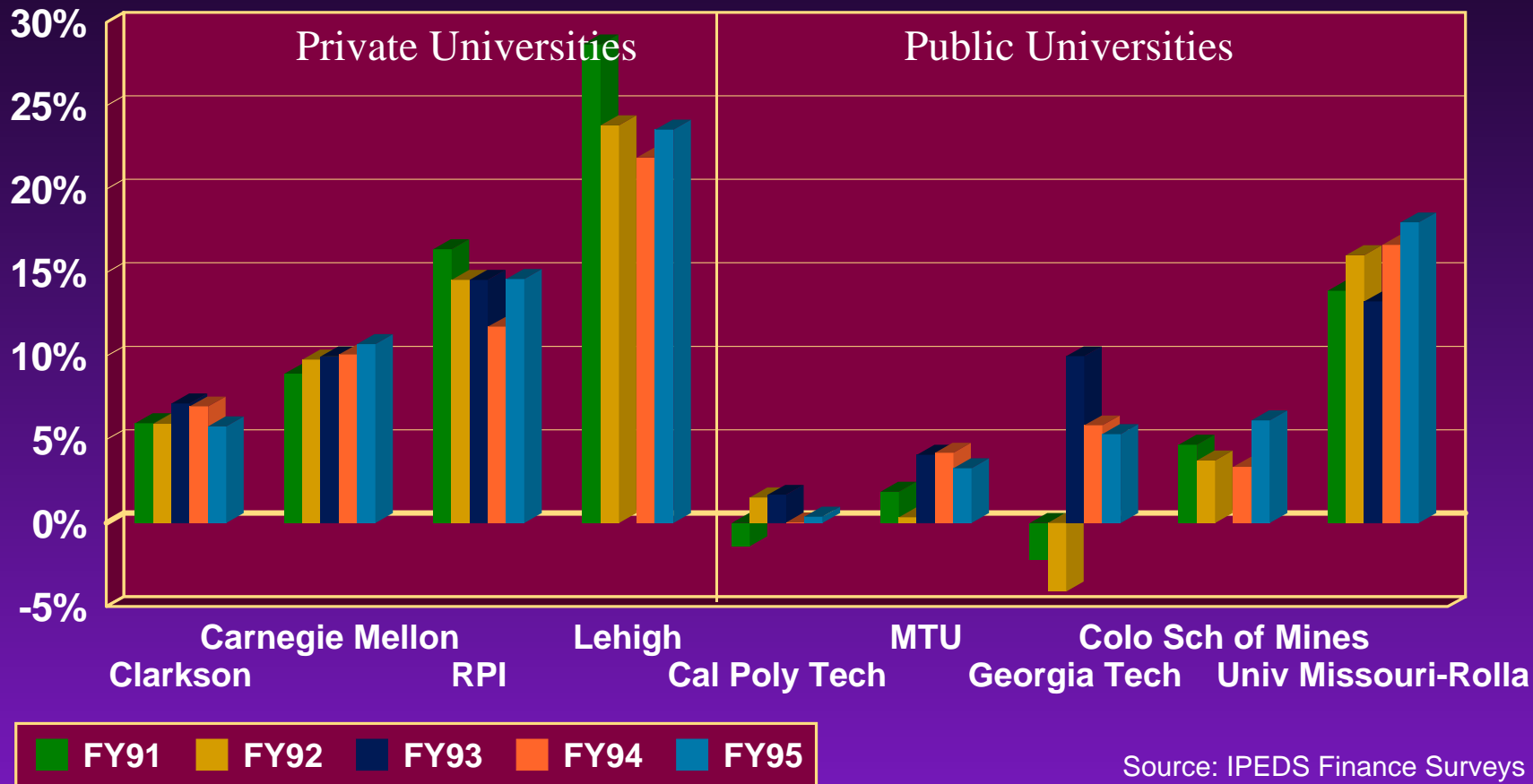


Source: IPEDS Finance Surveys

Benchmark Measures

Goal 8: Provide a Stable Financial Environment and Enhance Resource Acquisition

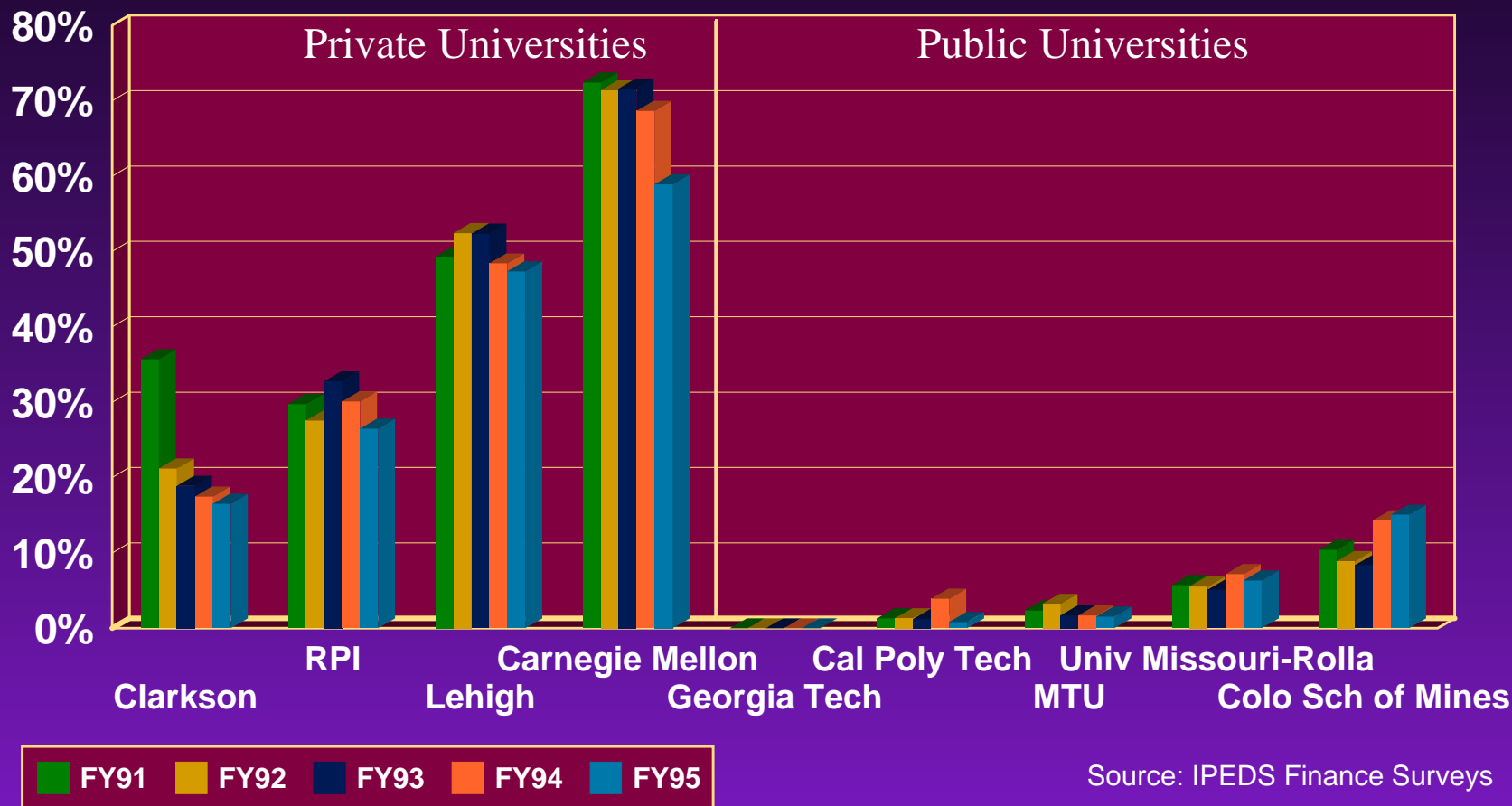
Current Funds Balance as % of Total Expenditures



Benchmark Measures

Goal 8: Provide a Stable Financial Environment and Enhance Resource Acquisition

Indebtedness as % of Plant Fund Assets



AGB Priorities

Monitoring Institutional Performance

“Boards can contribute to improved institutional quality through the decisions they make with their chief executives about what to monitor. A narrow focus by the board on institutional rankings or operational benchmarks will almost ensure that the focus of administrators will be similarly narrow and short-sighted.

Conversely, if the board insists on working with institutional leaders to set long-term, strategic goals and then keeps its attention focused on the indicators and other measures that reflect progress toward goal achievement, trustees will have placed these devices in their proper perspective--as tools and not as ends in themselves.”

The University Vision Statement

(Continued)

The vision as described by the University Direction and Planning Committee in concert with the Executive Vice President and the President:

- ◆ **Michigan Technological University will be a nationally and internationally recognized leader in meeting challenges of the future through excellence in undergraduate and graduate education and research in sciences and engineering.**
- ◆ **At the undergraduate level, we will have comprehensive, diverse, and relevant curricula that educate technically competent, intellectually vital graduates who are creative, effective leaders and communicators who are aware of the changing social, economic, and cultural values of the world.**

The University Vision Statement

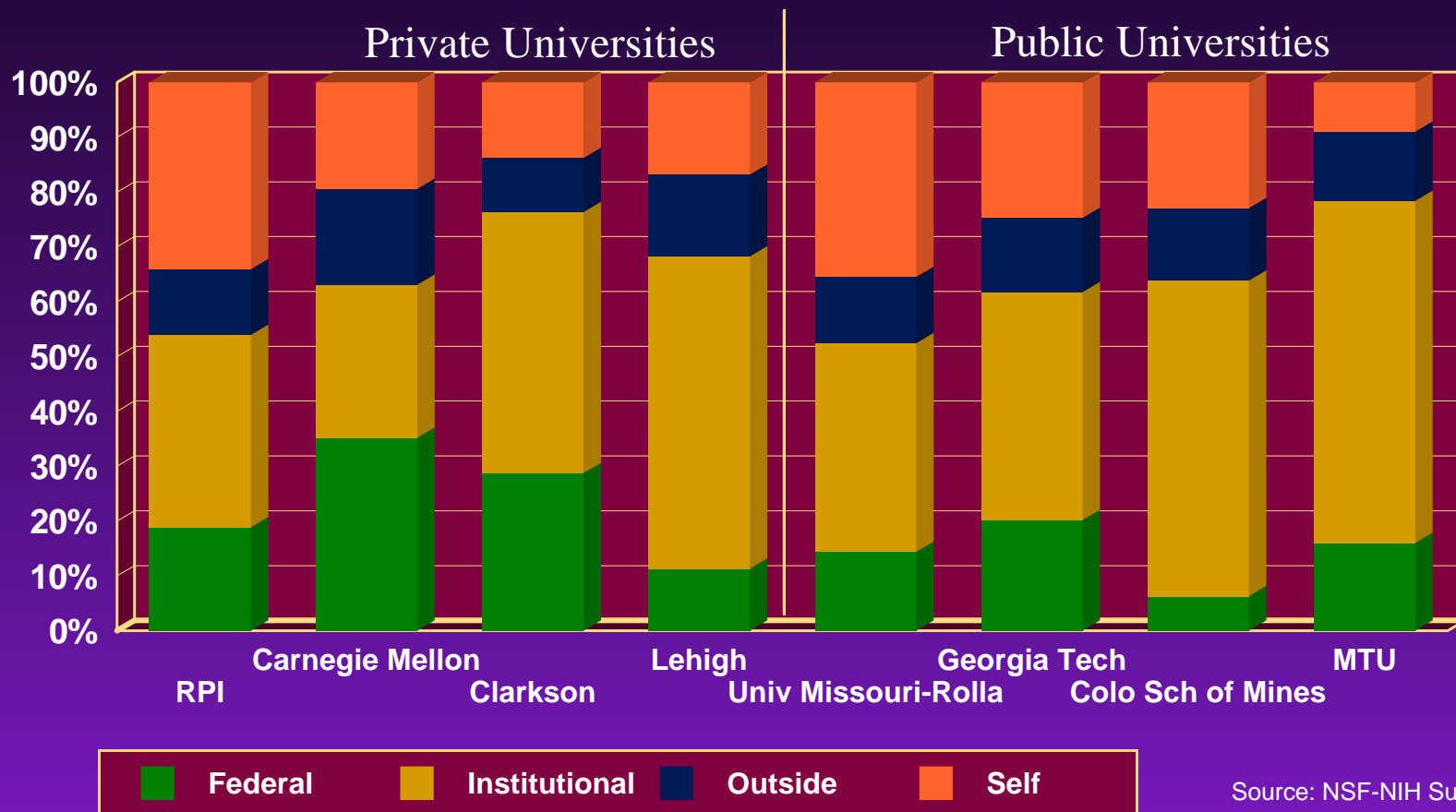
(Continued)

- ◆ **At the graduate level and in research we will focus especially on growth in interdisciplinary approaches in areas of established strength and future need. Consistent with the increasing complexity of science and technology, we will substantially increase the proportion of graduate students.**
- ◆ **At each educational level and within each segment of the University community, we will increase the proportion of individuals from under-represented racial and gender groups.**

Benchmark Measures

Goal 3: Strengthen and Develop Graduate Programs

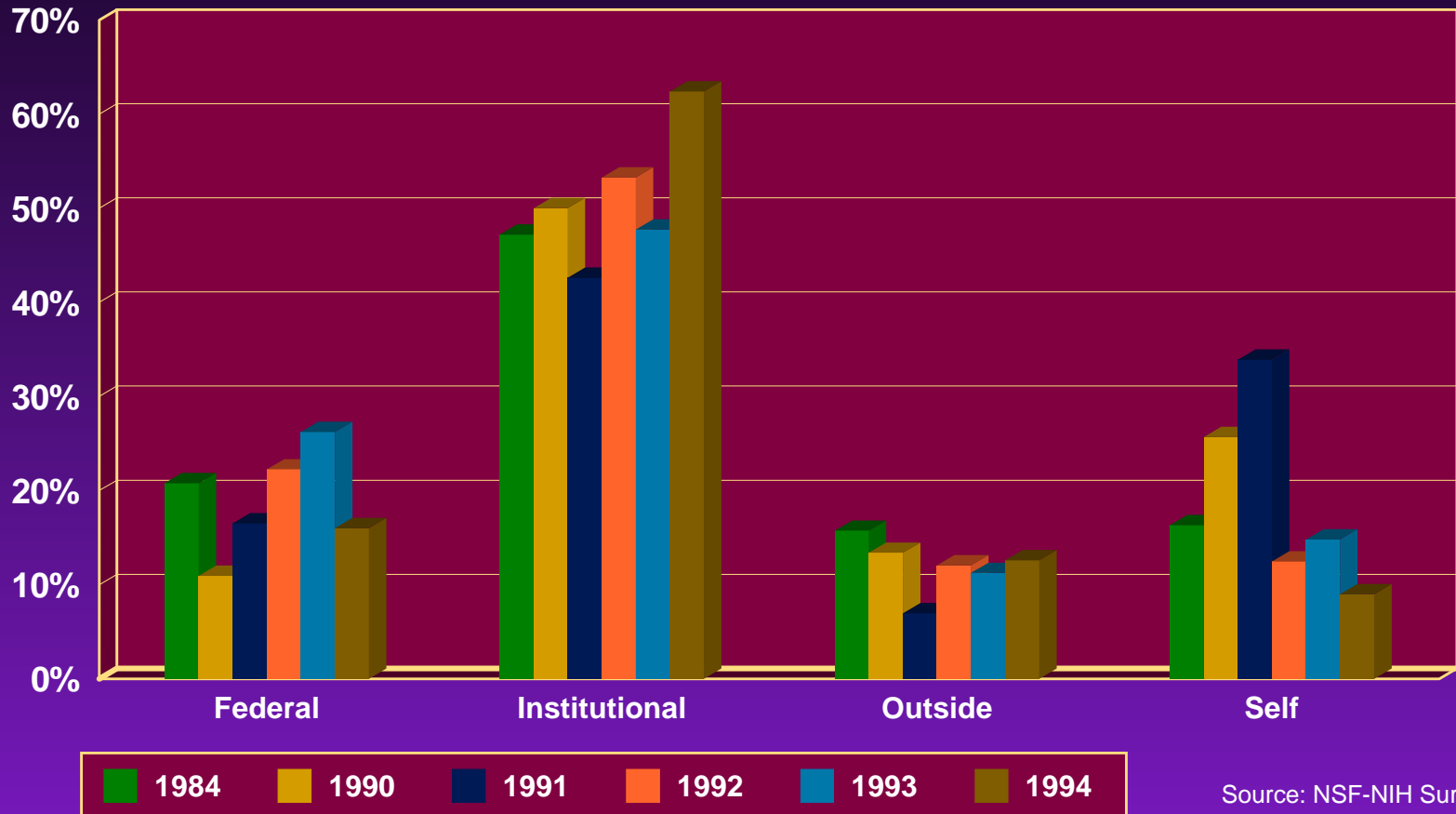
Graduate Student Source of Support - 1994



Benchmark Measures

Goal 3: Strengthen and Develop Graduate Programs

MTU Graduate Student Source of Support

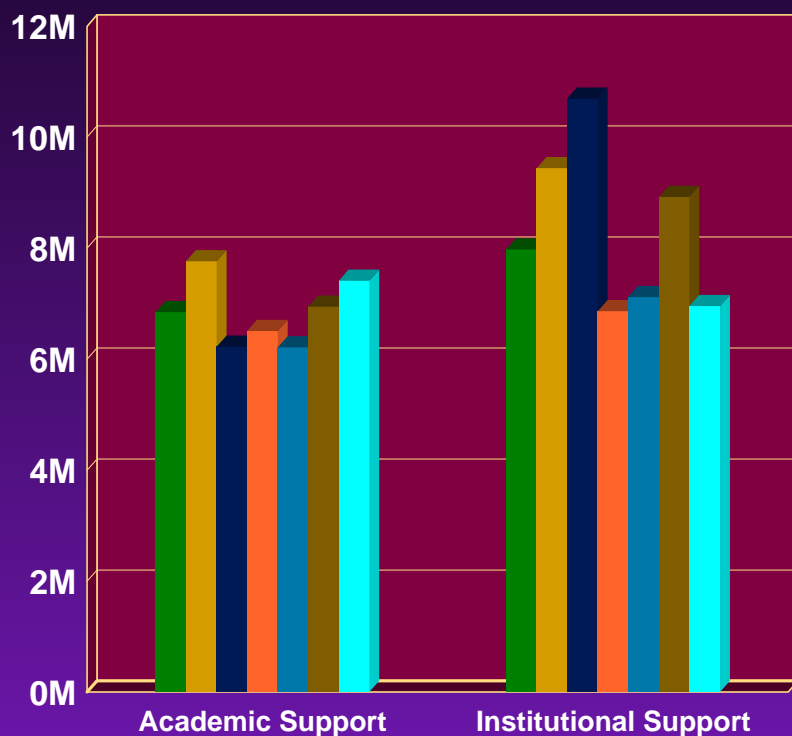


Source: NSF-NIH Survey

Benchmark Measures

Goal 5: Develop a Rewarding and Challenging Environment in which Staff Meet or Exceed Expectations

MTU Academic and Institutional Support Expenditures



FY90 FY91 FY92 FY93 FY94 FY95 FY96

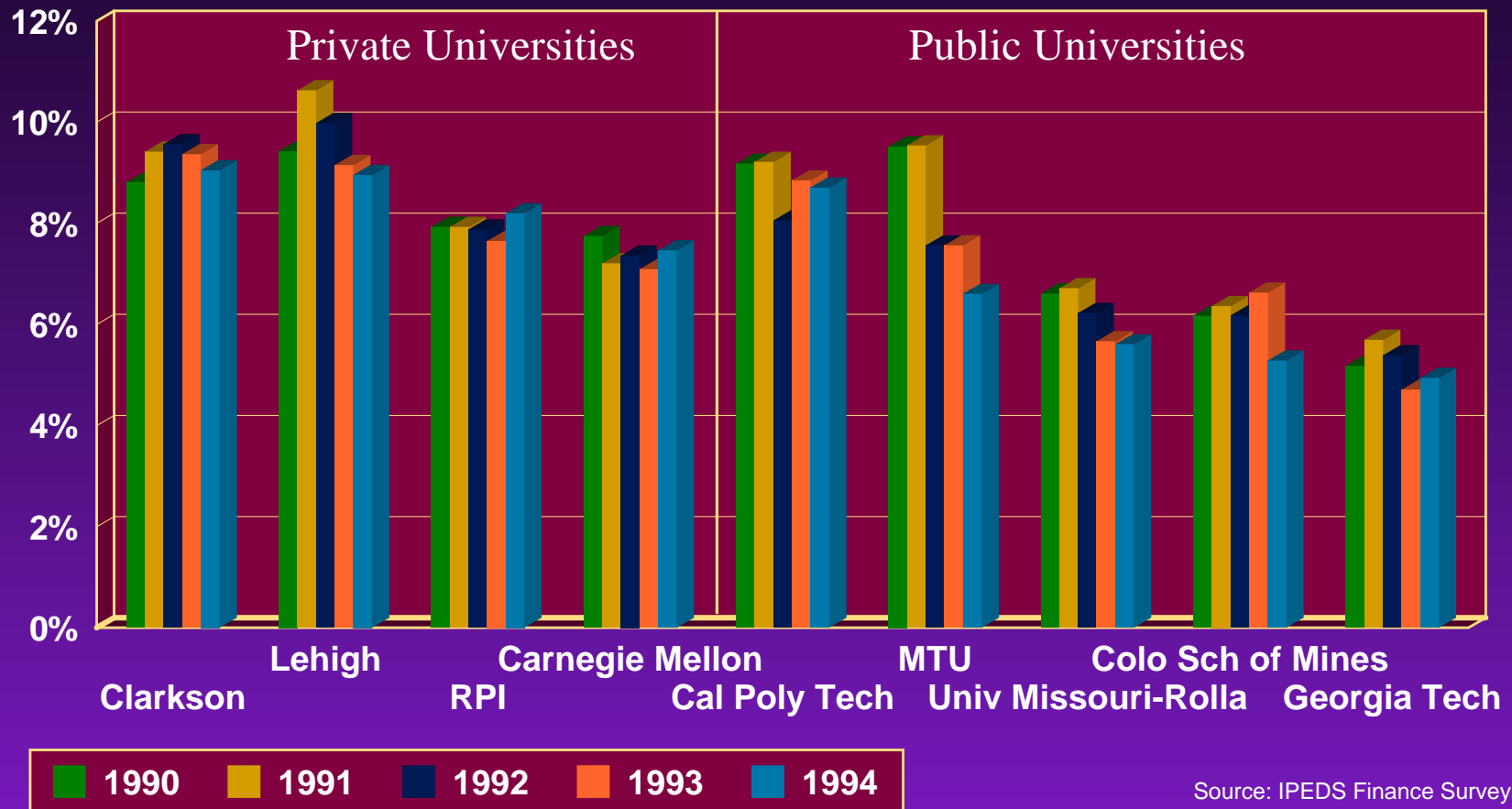
Source: IPEDS Finance Surveys

- ◆ Progress toward Salary Parity
 - 6.5% - 93/94
 - 3% - 94/95
 - 4% - 95/96 & 96/97
- ◆ Sick Leave Pool
- ◆ Wellness Program
- ◆ Staff Handbook
- ◆ University Senate Constituency Expansion

Benchmark Measures

Goal 5: Develop a Rewarding and Challenging Environment in which Staff Meet or Exceed Expectations

Academic Support Expenditures (Percentage)

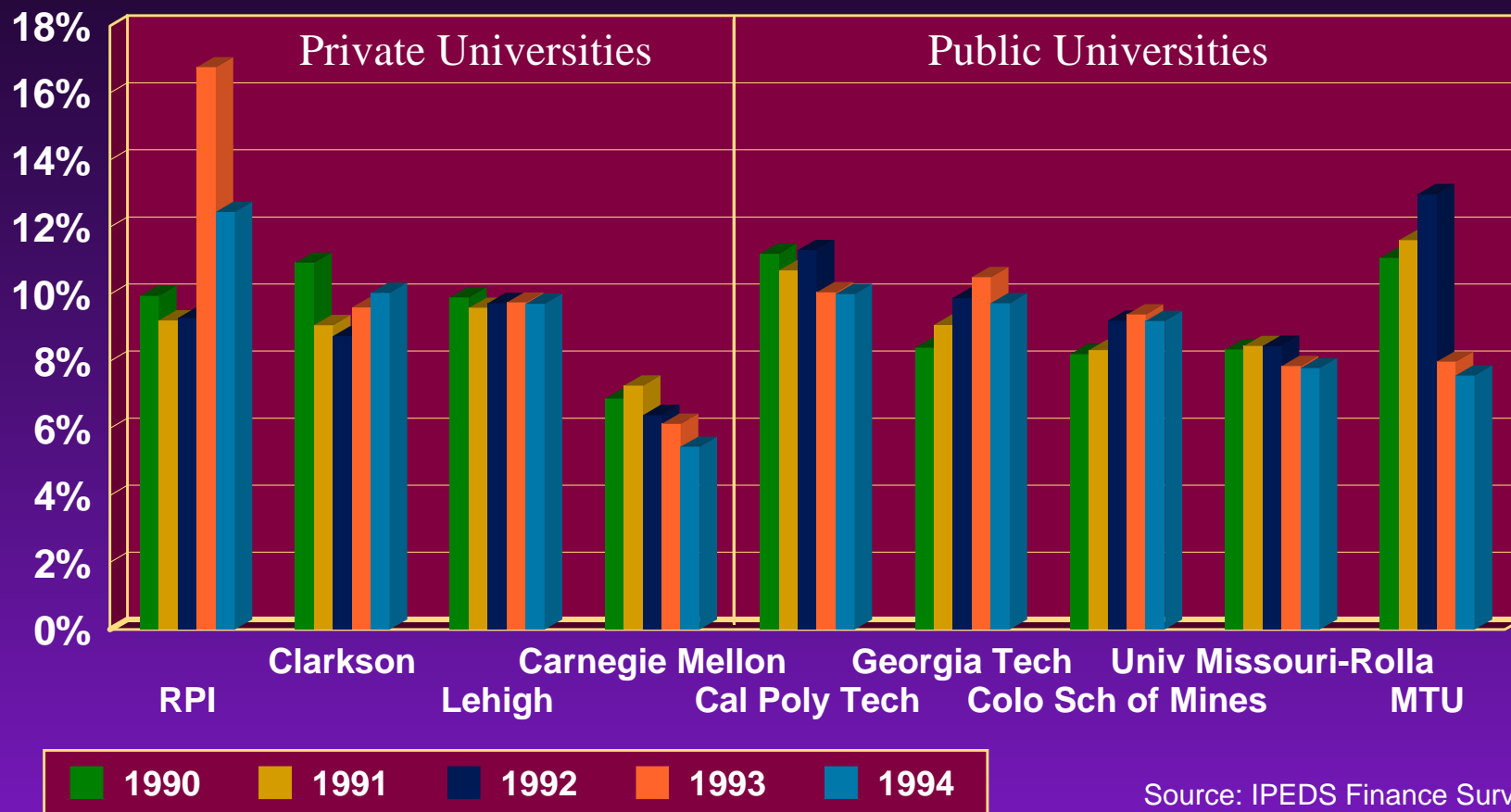


Source: IPEDS Finance Surveys

Benchmark Measures

Goal 5: Develop a Rewarding and Challenging Environment in which Staff Meet or Exceed Expectations

Institutional Support Expenditures (Percentage)



Source: IPEDS Finance Surveys