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Turnabout Time: Public Higher Education in the Commonwealth

Richard A. Hogarty
University of Massachusetts Boston

Aundrea E. Kelley
University of Massachusetts Boston

Robert C. Wood

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John W. McCormack Institute of Public Affairs
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Foreword

This study was initiated in December 1993 by Richard A. Manley, senior fellow and then director of the Center for State and Local Policy at the McCormack Institute. It was originally designed to focus on the University of Massachusetts alone, and it was to be a "post-Saxon report," taking as given that report's recommendations for structure and process, as well as the reorganizations of the state's university system which followed in 1991. Subsequently, the inquiry was expanded to include all components of the public higher education sector—the university, and the state and community colleges—and to focus explicitly on the contributions these institutions make to the state's economic well-being. More than the institutional well-being of students, faculty, and administrators is at stake. It is the preparation of our young people to be productive contributors to this state's economy which is critical.

Serving as a sounding board throughout the inquiry was a distinguished panel of advisors —former senate president Kevin Harrington; former house speaker David Bartley; Commonwealth Professor Ernest Lynton; Adrian Tinsley, president of Bridgewater State College; Randolph Bromery, former UMass Amherst chancellor and now president of Springfield College; Joseph Cronin, former secretary of education of Massachusetts and now president of Bentley College; and Sylvia Simmons, a trustee of Boston College, Merrimack College, and North Shore Community College. These advisors, of course, are not responsible for our conclusions, but we value their individual contributions and collective wisdom.

A common denominator for the authors and advisory committee members is that, from different perspectives, they all know the territory. The idea for the study was endorsed in May 1994 by the Public College Presidents Council, as well as by UMass officials and the Higher Education Coordinating Council (HECC). As our bibliography will show, we have relied heavily on official reports, census data, various surveys, and scholarly journals. Given restricted resources, we were precluded from doing a campus-by campus analysis with regard to the state and community colleges.

In the collection of data, we owe a special debt of gratitude to our research assistant, Edward Besozzi, who painstakingly collected much of the data during the initial phase of the study. Similarly, Ken Maurer of HECC graciously provided us with a "motherlode" of data for the entire system. We appreciate the cooperation from the University President's Office of Daphne Layton, assistant vice president, and from the institutional research directors of each University campus, including Marilyn Blaustein at Amherst, Jennifer Wilton at Boston, Richard Panofsky at Dartmouth, and Millicent Kalaf at Lowell. We also greatly appreciate the public opinion poll conducted by Louis DiNatale, senior fellow at the McCormack Institute, and John C. Blydenburgh, director of the Public Affairs Research Center at Clark University. Kathy Rowan did an outstanding job in deciphering our handwriting and

preparing the manuscript. We are indebted to Kathleen Foley, assistant director of the McCormack Institute; Ian Menzies, senior fellow of the McCormack Institute; and Paul Wright, editor at the University of Massachusetts Press, for their careful review and editing of the original draft; and to the UMass Boston Publications Office (in particular Jeffrey Mitchell, director, and Hisako Matsui, graphic designer) for editorial, design, and production work during the final stages of the project. We are also grateful to Jack Fowler and Carol Cosenza of the Center for Survey Research; Tom Chmura, chief of operations at the University of Massachusetts President's Office; and Anne Gormley, ACE Fellow at the Bridgewater State College President's Office, for their participation in some of our deliberations.

Finally, this report is in the McCormack Institute's tradition of independent and autonomous research. Like other Institute reports, it is policy- and action-oriented and concludes with specific strategic options and choices for change. Its aim is to help set the stage for a public policy debate on higher education comparable to those which occurred thirty years ago around the legislative initiatives of that era. We very much hope that its findings and recommendations will receive the public and political attention they warrant.

Richard A. Hogarty

Aundrea E. Kelley

Robert C. Wood

The Authors

Richard A. Hogarty is currently director of the John W. McCormack Institute of Public Affairs. A specialist in state and local policy, he also directs the graduate program in public affairs at UMass Boston. His career has combined teaching, research, and professional practice, and university program development and administration. Linking university resources to larger community needs has been a particular focus of Professor Hogarty's work. In the area of program development, he designed the University Year for Action Program and was a member of the planning faculty whose efforts led to the creation of the College of Public and Community Service in the early 1970s.

Aundrea E. Kelley is currently a doctoral candidate in public policy at UMass Boston. She earned her BA degree at Swarthmore College and her MBA at the College of Management at UMass Boston. She served on the Chancellor's Long Range Planning Committee in 1993 and as a member of the Task Force on Organization and Governance for the UMass Boston Accreditation Self-Study in 1994.

Robert C. Wood accepted an appointment as visiting fellow at the John W. McCormack Institute of Public Affairs in 1994, after a varied and distinguished career as educator, author, and specialist in government and urban affairs. A former president of the University of Massachusetts, Professor Wood has served as under secretary, and later as secretary, of the US Department of Housing and Urban Development, and as chairman of the Massachusetts Bay Transportation Authority. He has also served as superintendent of public schools in Boston.

Executive Summary

"Stay the course?"

"Steady as she goes" is the wrong prescription for charting the future of public higher education in the Commonwealth. A major course correction is in order if the coalition vital to the system's well-being is to hang together and be strengthened. With sharply divergent views being held by the public at large, political and business leaders, faculties and students—all groups essential to continuing educational progress—mutual accommodations and adjustments are the order of the day. Major changes in finance, institutional missions, curricula, and academic standards for faculty and students alike are imperatives.

The classic academic model that has shaped the structure, content, and direction of American higher education for a century and a half—the research university—is no longer sufficient to meet today's economic and social needs in Massachusetts. In some respects it may no longer be necessary. Discovering, defining, and putting in place a new model that commands the support of the key coalition and fits the character of the times should be our overriding aim. Aspiring to a dated model—to be a world-class university—may lift spirits but the ambition lacks content.

Specifically, the new priorities for most of the public colleges and universities are to put teaching first, to take service to community and economic development seriously, to focus research investments programmatically, and to be prepared to move increasingly to a technologically-intensive rather than a labor-intensive enterprise.

Making this course correction—this turnabout—will require changes in the way the state finances education, in the organization and structure of the programs and the curricula offered, in the technology developed, in the criteria applied to evaluate and reward faculty, in the standards used to judge student progress, and in the patterns of collaboration among the public campuses and between the public campuses and those in the private sector. In this context, several recommendations follow:

1. Change the mission, especially of the university campuses, away from the sole emphasis on the research university model. Prepare for new challenges emerging from changing student demographics.

If we are to accommodate new economic and demographic forces, then this academic establishment has to be responsive to the agenda of new expectations current in these times. Specifically, these include a readiness to ensure access to people of color, immigrants and native born, adult learners, part-timers, and place-bound students who seek education beyond high school, even if not all are prepared in the traditional sense as measured by SATs and secondary school record.

So the path to community colleges, and from these colleges to state colleges and universities, should be structured on a *regional* basis, and curricula and support systems designed accordingly. Further, the curricula provided should focus on the job *needs* of the economy and the job *opportunities* it offers. Good prospects for employment, promotion, and achievement become the priorities in designing academic programs. The trustees of HECC and the University need to take the lead in developing, encouraging, and ultimately mandating theses guidelines for access.

2. Streamline and restructure the public higher education system by avoiding duplication, employing the lead campus concept, and revising professional personnel practices.

If program offerings adjust accordingly, then the 29-campus system must move decisively to eliminate program duplication, most prominently in nursing education and engineering. Core undergraduate curricula need as well to emphasize the learning and skills especially required today: economics, organizational behavior, language, science, and applied technology. With these major adjustments in program and curricula under way throughout the system, each campus should determine, in HECC terms,a focus, or focuses. In each area of study or research, there should be a *"lead campus."* (This concept, more precise than the concept of "focus," is taken from the "lead agency" concept long established in public administration doctrine.)

Inevitably, the reforms in clientele, curricula, and campus specialization will require substantial changes in professional personnel practices, especially as they affect the faculty. Criteria for appointment, promotion, and tenure should be redirected so that teaching and service are weighted most highly in at least 26 of the 29 public institutions. The revised criteria should be applied statewide as major policy requirements by the trustees of HECC and the University. Appropriate adjustments in doctoral program training to prepare new faculty for expanded teaching and service responsibilities should be put in place. Clear measures of evaluation of teaching and service should be established for all faculty regardless of tenure status, and including the work of those in senior status.

Rejuvenate the faculty by enactment of a comprehensive retirement plan, offering discretion to campus administrators in providing such options. This step is crucial to bring vigorous and well-trained young people into the profession. Recent executive vetoes of such legislation are a mistake and should be reconsidered.

The present collective bargaining processes in the public higher education need reform. At present, the University of Massachusetts and HECC are "employers of record," but the economic parameters of the bargaining process are controlled by the governor and the actual allocation of dollars is controlled by the legislature, while the colleges and universities themselves bargain the contracts. This fragmentation of responsibility has led to less than satisfactory results.

The current bargaining process is directed towards compensation, terms of employment, and work practices, including the process established on each campus for academic decision-making. When processes for academic decision-making (e.g. development and validation of new courses and curricula) are fixed through collective bargaining processes, flexibility to align academic programs with current needs can be compromised. The entire collective bargaining process for public higher education in Massachusetts needs review and reform, and the scope of public negotiations needs to be sharply limited.

3. Pursue avenues of public and private collaboration.

Collaboration among the 29 institutions in public higher education should be required and the capacity and mission of each systematically defined. We note with approval the emerging partnerships in "articulating" transfer policies from community colleges to state colleges and the universities. We believe these should now be formalized in the regional tier system proposed by then-Chancellor Randolph Bromery in 1991. A necessary next step, brought about by the rapid changes in demography, program specialization, and new communication technology that can compensate for geographical isolation, is the creation of a *Commission on Campus Closings* patterned after prototypes adopted in defense, schools, and hospitals with established records of success. As discussed in a later section, the structure of the Commission will be so designed to provide objective professional recommendations that can only be voted "up or down" in their entirety.

Private institutions of higher education have long received public benefits, in terms of both tax exemptions and scholarships. The authority to review these programs and establish boundary conditions with public counterparts has been on the books but is rarely exercised. We believe that as HECC proceeds in its coordination and collaborative function, even-handed attention should be paid to duplication and redundancy in the private sector. We also endorse the same process of articulation for community colleges to four-year private colleges.

A New England regional component should be expanded, with the New England Board of Higher Education building collaborative efforts now exemplified in the Regional Student Program.

4. Gain fairer and more stable state support.

The commitment to a publicly supported rather than a publicly assisted public higher education system must be renewed. This does not say that the system simply asks for "more" and continues on the well-trodden paths of the research university model. Nor should an active search for outside funds be in any way discouraged as a way to enhance educational quality; nor should students be excused from paying their fair share. But the focus should be on *fairness* and the objective should be *stability*, so that rational, consistent, prudent planning and management can take place. The 1994 report of the Massachusetts Task Force on Fair Share Funding for Higher Education provides a sound departure point for assessing the relative contribution of the state, the students, and external sources of private and federal foundation contributions. While the report sets the student contributions at too high a level (because the so-called Carnegie calculations it applied are severely flawed) the five-year formula-based projections are a good start. Questions of equity encompass the absence of state funding for graduate work at state colleges.

In short, the course corrections recommended here focus on building an alternative model to the research university of old, retaining some components, but moving in genuinely new directions. In exchange for financial stability underwritten by the state, the other key members of the essential coalition undertake major commitments as well. Curricular and program changes more directly associated with community and economic development are put in motion when major new professional priorities in teaching, service, and research are established, and new patterns of collaboration and consolidation come into play.

Introduction: The System Today

The central historical fact about the 29 campuses that make up the public higher education system in Massachusetts is that they are young—in contemporary form scarcely thirty years old. It is true that Horace Mann's oratory sparked the creation of the teaching "academies" before the Civil War and the Morrill Act of 1862 made possible "Mass Aggie," which shared the United States land grant with the new Massachusetts Institute of Technology. But Harvard was ancient even then, and the clusters of denominational colleges around Boston and in the Lower Pioneer Valley preceded Aggie by a generation. The institutions of public higher education are comparatively new, hemmed in by older, more numerous, often richer, more assertive, sometimes more illustrious private counterparts.

The central economic and social fact about the public university and colleges is that they are essential to the well-being of the Commonwealth. After the GI Bill underwrote the opportunity for education beyond high school for the veterans of World War II, higher education enrollment in Massachusetts, swollen first by veterans and then by baby boomers, multiplied by a factor of four. For the most part, the private sector in higher education could not accept that many newcomers. Despite its predominance in institutional numbers, 86 private to 29 public in 1993, the independent sector enrolls just about one-half of the state's undergraduate students.

The land grant universities and the public colleges have accepted, educated, and graduated a giant share of the last two generations of students. Public universities and public colleges have fashioned the critical base for a prosperous state economy and an informed polity. These institutions have ensured that not just the children of the well-to-do and the very poor would have access to quality education but that middle class offspring would benefit as well. Unless these students are forced to mortgage their future by carrying an unrealistically high proportion of the cost of post-secondary education, the public sector will be the principal vehicle for assuring that our state's human resources are sufficiently skilled, discerning, ambitious, articulate, and informed to meet future economic and social needs.

The central policy fact about public higher education is that it is uniquely accountable to the citizenry and its elected representatives. Unlike private boards of trustees, public boards are not self-perpetuating, unspecified in composition (except for a proportion of alumni/ae), requiring only the concurrence of the institution's chairman for appointment. In public boards, members come from specified walks of life, representing specific constituencies. They are appointed by governors on the recommendation of civic advisory boards. The budgets and programs of public institutions must not only be approved by the lay boards of trustees but by the governor and the General Court as well. Only the public sector is directly responsible to the public for its performance, assuring that its campuses serve the

public good. What Jack Beatty, a product of the public system and senior editor of *The Atlantic Monthly*, said so eloquently about UMass Boston can be said as well about the system as a whole: "It has, through [its] teachers, brought the best in contemporary cultural and intellectual life to the children of firemen and postal workers and bus drivers and janitors, to the newest Americans and to the children of the oldest Americans. Many and various have been the eternities touched by its distinguished faculty. To bring the best, the first quality and rigor, to people who are too often asked to settle for second-best—such has been the sustaining impulse of this place."[1]

1. Excerpt from a 1994 address at UMass Boston.

These younger, essential, and accountable public institutions of higher learning have for thirty years been subject to successive expansions and contractions of public and political support—cycles of boom and bust. In the Sixties, after the public and the legislature first discovered that fewer high school graduates in Massachusetts went on to college than in any other state save Maine and Mississippi, our public universities and colleges were systematically organized and generously supported. That support turned sour in the mean-spirited, anti-public economic crisis of the Seventies, and the threat to abort the billion-dollar investment in programs across the state was real. The public sector warded off some of the damage then threatened, and in the first years of the Eighties, the good times returned. But when national and state economies collapsed between 1988 and 1992, Massachusetts public universities and colleges faced the most severe financial crisis they had ever experienced. In those five years, appropriations fell from $575 million to $348 million, and the Saxon Commission signaled the need for new organization.[2]

2. Data in Massachusetts Taxpayers Foundation Report, "Special Topics: Higher Education Financing and Policy Trends," May 1992.

The search for effective governance of public higher education in Massachusetts has also been a difficult quest. In truth, the problem of governance has never been adequately resolved. Over the years, politics, personalities, and instability have characterized the governance structures. The Commonwealth has passed through the successive stages of a Board of Higher Education, a Board of Regents, and a Higher Education Coordinating Council—all within the span of thirty years. It has been an uncertain and unsteady course with its ups and downs, and its cycles of centralization and decentralization. Suffice it to say that stability and accountability in governance are as much needed as stability in funding. For the long haul, the system needs a real reform in governance that "depoliticizes" the management of higher education and provides independent leadership that is knowledgeable about academic quality and devoted to its advocacy.

Currently, with a recovering economy, public higher education has some breathing room, so far as operating expenditures are concerned. But it has since 1988 experienced costs and losses that must be calculated. It also faces new skepticism from public- and private-sector leaders alike as to whether or not its traditional missions fit contemporary circumstances and—more important—anticipate the next century.

This is an appropriate time for reappraisal and reexamination of every facet of public higher education. It is serious business, evaluating the continuing well-being of a public enterprise that involves a substantial investment vital to the prosperity and quality of life in the state. The enterprise has come too far, struggled against too many odds, provided too many vital public services, engaged too many bright and creative minds, and shaped decisively the futures of too many students to hunker down now in a siege mentality. Neither can it be

content with doing more of the same, in a business-as-usual style while the economic life and the social structure of Massachusetts are significantly changing.

Accordingly, if the public educational sector is to adjust appropriately, redirect its energies, renew and reform, it must engage constructively at least four critical constituencies:

- the public at large
- executive and legislative leaders
- faculties
- students

These are the essential components of a coalition necessary to move the public sector in higher education forward in the right direction. How present academic leaders build this coalition and persuade their constituencies to work together will be the measure of their executive success.

This study is built on an empirical examination of the present attributes of the system. First, we have collected data to provide profiles of finances, faculty, and students, together with the evaluations of regional accreditation bodies. Second, we have explored the perceptions and opinions of the key constituencies. In this instance, we have conducted polls exploring current public opinion and the views of the legislature, as well as the first systemwide survey of faculty opinion and attitudes since 1971. We have also re-examined the student surveys. We have for the first time both profile data on the key characteristics of all public educational institutions in the Commonwealth and an understanding of the perceptions, objectives, aspirations, dispositions, and prejudices of the key constituencies.

The sections which follow:

- detail the costs suffered and the prices paid by the public institutions in the "wilderness years" of 1988-1992;
- summarize where public higher education stands with whom today, as our polls of the prime constituencies indicate;
- identify the properties and attributes of the "new times" which educational leaders, and scholars here and across the country today believe we are in and "the new ways" we should go in organizing, leading, and directing the campuses;
- suggest the first steps, external and internal, to be taken to accommodate the "new times" and the "new ways."

These first steps include:

- reform of campus missions and curricula consistent with new economic and social requirements. In implementing the new model, more emphasis on economics, communications, science and technology, organization, and languages;
- the introduction of new professional criteria and practices at every campus. This review needs to encompass new priorities in faculty workloads and criteria for advancement;

- intensifying patterns of collaboration among public sector institutions and with private sector institutions according to their respective capabilities, so that all can be more effective;
- quick relief from the excessive tuition and fee charges imposed during the wilderness years and a clear specification of the amounts required for sustained, stable state support.

These proposed changes must of course be gauged as to their feasibility—that is, the probability of their acceptance by the key constituencies. Given what we now know of their present attitudes and dispositions, the disjunctions here are considerable and are analyzed in terms of the opinion surveys we have just completed.

The conclusion of the study speaks to the elements of a strategy appropriate for forming a genuine, effective coalition for all concerned.

The Wilderness Years

The late 1980's to early 1990's were dismal times for the Commonwealth's institutions of higher learning. The baby boom bulge had moved through the system and the pool of potential applicants was declining sharply. The nation was slipping into a deep recession as well, with the Commonwealth leading the way. As jobs in Massachusetts declined almost overnight in the manufacturing sector, a steady decline in population growth rates was exacerbated by residents moving out of the state in search of employment. At the local level, the demand grew that property tax rates be capped. The fall in state revenues was equally precipitous.

Financial Shortfall

Between 1987 and 1992 the Commonwealth's appropriations to higher education as a percent of state and local tax revenues fell by an unprecedented 46%. Nationally, appropriations to higher education measured by the same state revenue sources declined only 13%. The impact of the funding decrease was magnified in the Commonwealth because the percentage of funding had *increased 22% from 1980 to 1987*.[3]

3. In "State Profiles: Financing Higher Education, 1978 to 1993," Research Associates of Washington.

Table 1
Higher Education Appropriations as a Percentage of State and Local Tax Revenues

				PERCENT CHANGE	
	1980-1981	1987-1988	1992-1993	1980-1987	1987-1992
Massachusetts	**4.6%**	**5.6%**	**3.0%**	**22%**	**(46%)**
National Average	**8.2%**	**7.2%**	**6.3%**	**(12%)**	**(13%)**

Note: Appropriations exclude amounts earmarked for research and medical schools.
Source: State Profiles: Financing Higher Education 1978 to 1993, Research Associates of Washington, Massachusetts Task Force on Fair Share Funding for Higher Education, June, 1994.

Higher education institutions attempted to compensate for sharp cuts in state funding by increasing the levy on students. From 1980 to 1987, the student share had been cut by 18%. But from 1987 to 1992 student share of costs doubled from 20.6% to 40.2%. The dollar amount an average student had to pay in tuition and fees increased by 95%.[4] By contrast, during the same period nationally, the amount students paid increased only 29%.

4. For details of student cost increases from 1988 through 1994, see Appendix C, "Tuition and Mandatory Fees by Campus."

Table 2
Student Share of Costs

	1980-1981	1987-1988	1992-1993	PERCENT CHANGE 1980-1987	PERCENT CHANGE 1987-1992
Massachusetts	**25.1%**	**20.6%**	**40.2%**	**(18%)**	**95%**
National Average	**21.5%**	**23.9%**	**30.8%**	**11%**	**29%**

Note: Student share of costs = $\frac{\text{tuition and fee revenues}}{\text{(tuition and fee revenues + state appropriations)}}$

Source: State Profiles: Financing Higher Education 1978 to 1993, Research Associates of Washington, Massachusetts Task Force on Fair Share Funding for Higher Education, June, 1994

Traditionally, Massachusetts has always devoted a smaller percentage of state revenues to higher education spending than the national average. State appropriations were 5.6% of tax revenues in 1987; they fell to 3% of revenues in 1992. The Massachusetts 1992 share was less than half the national average of 6.3%.

While the Commonwealth's appropriations per full-time equivalent student (FTE) more than doubled from 1980 to 1987, up from $2,535 per FTE student in the 1980-81 school year to $5,482 per student in 1987, by the fall of '92 appropriations had dropped to $3,817. This 30% decline compared to an average increase of 4% nationally during the same period.

Table 3
Higher Education Appropriations per Full-Time Equivalent Student (FTE)

	1980-1981	1987-1988	1992-1993	PERCENT CHANGE 1980-1987	PERCENT CHANGE 1987-1992
Massachusetts	**$2,535**	**$5,482**	**$3,817**	**116%**	**(30%)**
National Average	**$2,448**	**$3,987**	**$4,164**	**63%**	**4%**

Note: All amounts are in constant 1992-1993 dollars, deflated by the Higher Education Price Index.
Source: State Profiles: Financing Higher Education 1978 to 1993, Research Associates of Washington, Massachusetts Task Force on Fair Share Funding for Higher Education, June, 1994.

Income from other sources increased somewhat during these years, as institutions scrambled to counteract their revenue shortfalls. Spending for research and auxiliary enterprises increased during 1990-92 by over 12%, while spending for academic instruction declined by almost 5%.

Legislative pressure also helped spur public colleges and universities to begin to think more systematically about private fund-raising. Still young in contemporary terms, Massachusetts public colleges and universities have not yet produced the critical mass of alumni necessary to promote substantial growth in endowments. Accordingly, that focus fell on scholarship support, exemplified by Bridgewater State College securing private and alumni endowment income for fifty scholarships.[5]

Finally, the Commonwealth's tax projections make state coffers a doubtful source to look toward for a boost to public higher education finances. Rising interest rates will result in slowed economic growth, and, consequently, the rates of increase in tax collections are expected to diminish in the foreseeable future. Publicly supported institutions should forget about a return to the Massachusetts Miracle era, when double-digit revenue increases were common. Planners are now beginning to accept that, rather than setting a new long-term standard, the "Mass Miracle" was an anomaly that is likely to be seen never again.

5. Report of the Senate Committee on Post Audit and Oversight, "Endowment Development in Massachusetts Public Higher Education," October 1990.

Falling Enrollment

As the baby boom leveled off and birth rates dropped in the 1960's, the number of high school graduates declined during the eighties. Nationally the number of eighteen-year-olds fell by nearly thirty percent—and in Massachusetts by forty five percent—between 1979 and 1993, contributing to the biggest decrease in college enrollments since the depression.

Enrollments in Massachusetts institutions of higher education suffered a triple blow: rising costs to students, a shrinking pool of applicants, and a severe downturn in the economy. Of the three sectors within the public higher education system, only community colleges recorded higher enrollments—many of them older adults.

The profile of the typical college student also altered significantly between 1988 and 1992. Some campuses, as enrollments dropped, compensated by increasing the number of continuing education students. Others allowed greater flexibility in class scheduling, with a shift to more part-time students.

With sharp losses in state appropriations and falling enrollments, public colleges and universities became more market driven. The capabilities of campuses to diversify their customer base (students), differentiate their product, and adjust delivery of services to meet the needs of their customers, became significant. How well schools succeeded in promoting themselves directly mirrored the decline in the traditional student pool. For example, the relative stability of enrollments at the University of Massachusetts Boston may be accounted for by its success in attracting non-traditional students.

Faculty-Student Mismatch

To trim expenses in the hard times, academic programs were cut. The axe fell particularly hard on the ranks of young faculty who were tenure track but not yet tenured. One major consequence of budget cutbacks was an apparent disjuncture between faculty disciplines or specialties and the major degree choices of students. More precisely an oversupply of faculty in disciplines less chosen as majors appeared, together with an undersupply of faculty among disciplines that were rising in popularity. This trend was exacerbated by changing demographics—more female and more minority students, for example, along with changing demands for some majors as the economy shifted from a manufacturing to a service/knowledge base.

Examples of a possible disjuncture between department tenure rates and student decisions may be seen in engineering at UMass Amherst, where the percentage of tenured faculty increased by 23.2% during the wilderness years, while the number of students receiving engineering degrees dropped by 26.3%.

In the College of Management at UMass Amherst, tenured faculty as a percentage of departmental faculty increased by 34.4% from 1988 to 1992—fueled in part by a drastic recision in the number of non-tenured tenure-track faculty—but students received 37.8% fewer management degrees. Of the core faculty who remained in the Marketing department, none had received doctoral degrees at selective institutions. This trend suggests another potentially troubling issue: the persistence of an aging faculty with no replacements in the pipeline,

not even room for would-be faculty trained at the most selective institutions. The fit between the core faculty and the needs of the student body comes into question. An apparent oversupply in some faculty disciplines emerged during the wilderness years while budgetary constraints prevented strengthening staffing in disciplines experiencing growing student demand.

At UMass Lowell, the percentage of core engineering faculty declined by 6% during this period, while student enrollment in engineering dropped by 27%. During the same period, student enrollment in health professions rose by 21%, while health professions core faculty dropped 15%. These shifts without countershifts are subject to varying interpretation. For instance, do we conclude that Lowell's Health Professions' handling 21% more students with 15% less faculty means that the department is more efficient in scheduling or use of technology? Or ought we infer that students' educational experience has declined in quality because of faculty members' teaching overload? Or is there yet another unrelated explanation?

Table 4
Changes in Faculty Disciplines and Student Majors at UMass Lowell

	# FULL-TIME FACULTY			# STUDENTS ENROLLED		
	'88	'92	% Change	'88	92	% Change
Arts & Sciences	242	223	-8%	3,743	3,646	-3%
Education	17	19	+12%	543	504	-7%
Engineering	119	112	-6%	3,477	2,554	-27%
Fine Arts	22	23	+9%	534	474	-11%
Health Professions	46	39	-15%	779	940	+21%
Management	515	459	-11%	2,157	1,485	-31%

Demographic changes also increased pressure on administrators to diversify faculty. Yet, given the budget constraints there was little growth in the percentages of female faculty[6] —tenured or non-tenured—in science and engineering programs. Disjuncture became evident between faculty discipline, student demand, *and* diversity.

In addition to a downsizing of the ranks of full-time tenure track faculty, administrators faced with inadequate resources increasingly deferred maintenance of physical plants during the wilderness years. The recent air quality problems at the University of Massachusetts Boston reveal how inattention to physical plant can backfire. Deferred maintenance and the shutdown of air circulation systems there contributed to a sudden eruption of serious health problems, expensive emergency air quality testing, and a costly weeklong shutdown of the entire facility.

6. According to a January 1993 internal memorandum from the President' Office on university tenure rates, "There are almost no women in either tenured or non-tenured ranks in the system's science and engineering programs; a further shift in hiring priority towards science and engineering could jeopardize progress towards a higher proportion of female faculty."

A Different Future

Demographic projections clearly show that the proportion of minority students in the Commonwealth is increasing dramatically. If current fertility and migration patterns continue, the minority share of population will stand at almost 33% by the year 2012 —almost triple the 11.6% share in 1985.[7] Three factors are feeding this trend:

- a minority population that is younger, on average, than the white, non-Hispanic population;
- higher minority fertility rates coupled with a larger number of minorities of child-bearing age; and
- higher migration of minorities into the Commonwealth.

7. See"Beyond 2000: Demographic Change, Education and the Work Force," a report of Nellie Mae and UMass Amherst MISER. HECC has reported that, by the fall of 1992, 12.6% of all students in Massachusetts public higher education were minority, 56.2% were female, and 45.5% were part-time, and that, as of fall 1991, 41% of all students were 25 or older. ("Enrollment Trends In Massachusetts Public Higher Education," Fall 1992)

A number of contemporary issues are likely to accompany this increasing number of minority groups into the higher education institutions, as microcosms of the larger society intergroup tensions that exist at the macro level can filter—and have—onto individual campuses.

A growing proportion of minority students also presents new emphases for administrators facing budget choices. More resources have to be directed toward student support services in order to enhance retention and completion rates. Student support has already extended far beyond course and career advising to address the needs of students who are also young parents, especially single mothers. Addressing transportation, child care, coping skills, and other life skills, such as management of personal finances, has become far more important. Colleges and universities must also address teaching/learning techniques for students who are coming into the system with limited English language capabilities. As minority group proportions rise, institutions may be faced with a continually accelerating need—and even demand—for minority faculty and staff.

Overall, the public higher education system emerges from the hard times with slightly better prospects in terms of projected size of the applicant pool. The college-age population will also grow in absolute numbers. The 1993-94 elementary population in Massachusetts is 22% greater than the 1983-84 school population, with the highest number (about 76,000) being enrolled in 1993 in kindergarten.[8]

8. The Condition of Education, 1994, HECC.

The fact that more students plan to attend college in the state will also put upward pressure on the applicant pool. In 1983, 37% of high school graduates planned to attend a four-year college and 16% planned to attend a two-year college. In 1993, 51% of high school graduates said they planned to go to a four-year college, and 19% said they would choose a two-year college. Manufacturing is going the way of agriculture, with fewer laborers needed to operate plants. This trend is offset by a sharp increase in the service sector, as it is elsewhere in the nation. Health and financial services, for example, are way up to serve the needs of an aging population. Clearly, students are shifting away from going directly into the work force as they realize—in view of the decline of the manufacturing sector—the necessity of having a college degree in order to earn a wage that is high enough to support a family.

Where We Stand Now and With Whom

If public higher education emerged somewhat battered from the hard times of 1988-92, sustaining genuine damage, with faculty and staff compensation frozen or suspended, tuition and fees spiralling upward, curricula innovations postponed, how is it regarded today by its key constituencies?

The Public and Its Opinions

To gauge public opinion, the McCormack Institute, in conjunction with the Public Affairs Research Center at Clark University (Worcester, MA), conducted a statewide poll in May 1994 sampling 475 registered voters in Massachusetts as to their attitudes toward public higher education. Two very important trends emerge. First, there is broad public support for public higher education. Second, in seeking educational services, the public is mainly interested in lower costs, proximity of location, and the quality of education.

The survey found that 56 percent of all households in the state contain at least one person who has taken courses at a public college or university. Thirty-six percent of those polled indicated that they or members of their immediate family had obtained a degree from a public institution, and 20 percent said they or a family member had once attended classes at a public school of higher learning. When asked their reasons for attending a public institution, 48 percent cited low cost, 26 percent mentioned convenient location, and 20 percent said high quality. Eighty-five percent of those polled believe that our public universities and colleges are as good as, if not better than, comparable institutions in other states. These figures suggest that there is a potentially strong constituency for public higher education, even in a state where private colleges have long been dominant.

The survey also shows that there is support for adequate, consistent funding of public higher education. On this issue, over 60 percent of those polled favored a dedicated tax for public higher education, and almost 70 percent favor additional state funds to maintain the public campuses at their present level. These figures are consistent with those of a prior poll that was conducted by the McCormack Institute in November 1989, and suggest that the trend of support is long term.

As to individual campuses, 66 percent of those polled rated UMass Amherst as excellent or good, while less than 10 percent considered it not so good or poor. The Boston, Dartmouth, and Lowell campuses all drew a similar four to one positive ratio—35 percent excellent or good as opposed to 8 percent not so good or poor. These intra-university rankings give the flagship campus at Amherst a substantial overall qualitative advantage, while the other three campuses are statistically indistinguishable from one another. Lowell and Dartmouth have

very low visibility; in both cases more than 55 percent of the voters were unable to rate these institutions. Of the three components (the public university system, the state colleges, and the community colleges), the state colleges registered the highest rating with 62 percent viewing them as excellent or good and only 8 percent viewing them as not so good or poor. The community colleges maintained almost a two to one positive ratio—37 percent rating them as excellent or good while 21 percent considered them as not so good or poor.

The Legislature and Its Views

In November 1993, ninety-one legislators and policy-makers responded to a survey administered by the firm of Coopers and Lybrand on their views concerning the University of Massachusetts. When asked the question "what do you think the top three priorities of the university system should be," the respondents replied in order:

1. **access and affordability**—more than three quarters of those surveyed said accessibility/affordability should be one of the system's top priorities, more than any other item in the survey.

2. **quality of teaching**—all but three respondents said quality of teaching is extremely important, and 69 per cent said it should be a top priority for the system. Related goals rated as extremely important by at least two-thirds of the legislative respondents were the educational experience of students, post-graduate success, and success in retaining and graduating students.

3. **efficient use of resources**—a quarter of those surveyed said efficient use of resources should be one of the top three priorities, and 84 percent indicated that it is extremely important.

4. **quality of research resulting in economic development**—a majority indicated that quality of research and economic development are extremely important. A quarter said economic development should be one of the top three priorities.

Continuing the ranking of priorities, only a handful of respondents placed importance on the level of fiscal support, diversity of students and faculty, faculty workload and productivity, levels of external funding, or winning sports teams. Whereas 68 percent of respondents said quality of teaching should be a priority, only 15 percent said the same about quality of research and scholarship or public service. Also, only 6 percent indicated that faculty workload and productivity should be a top priority for the system.

The written responses to open-ended questions conveyed substantial interest and pride in the academic reputation of the public university. Also apparent was frustration with high administrative salaries, the management of racial conflict, and the "Minuteman" symbol controversy at Amherst.

The Faculties and Their Perceptions

A third vital constituency is the faculties, the heart of the colleges and the university system—in their perception at least—and the overall determinants of both their institution's reputations and of the status of their graduates. The energy, commitment, and intelligence of the faculties, combined with years of teaching experience, make them in fact "the keepers of the flame."

At the time of our survey, the faculties were just emerging from the wilderness years of budget cuts and salary rollbacks. They endured for more than a decade a constant drumbeat of criticism. Their critics contend that professors are overpaid and underworked, are not productive, lack institutional loyalty, and suffer from a loss of a sense of mission.

Against this background of harsh experiences and critical review, faculty viewpoints were obtained on a wide variety of issues. The purpose of the survey was to gather faculty perceptions in three key areas: (1) what are the professional goals of faculty members, and how do they find their institutions as places in which to achieve their professional goals?; (2) what are faculty perceptions of institutional priorities, and how well do they think their institutions are doing at achieving institutional goals?; and (3) what are the main perceptions of institutional problems and in what areas are increased effort or resources most needed?

The faculty questionnaire was designed and administered by the Center for Survey Research, which is housed at UMass Boston. It was mailed to faculty throughout the entire system in June 1994. After several follow-up reminders by mail and telephone, responses were received from over 1000 faculty members. Its return rate was 73 percent, a very strong response.

The institutions in the state system vary markedly in the goals that faculty members see for themselves and for their institutions and in how faculty rate the institutions. In addition, there are some problems that are consistently cited throughout the system, but the problems needing attention tend to vary by institution.

For example, to the extent that the quality of students' educational experience is impacted by the quality of institution attended by the instructor, we find that campuses showed widely varying proportions of faculty terminal degrees earned at highly selective public and private institutions, ranging from less than ten percent at some of the public colleges to nearly 40 percent at UMass Amherst and Boston. Furthermore, departments—based on source of terminal degrees—vary widely in strength and reputation, even on the same campus. At Amherst, for example, 71 percent of the economics faculty received doctoral degrees from selective universities, compared to only 16 percent of faculty in the chemical engineering department.

UMass Amherst

Of the approximately 5,000 full-time faculty in the Massachusetts system, just over 1,000 work at UMass Amherst. Faculty members there report their main professional goals to be undergraduate teaching, graduate teaching, and research/scholarship at approximately equal levels. However, while faculty give UMass Amherst the highest ratings in the system as a place to teach graduate students and carry out scholarly work, it is rated less highly by its faculties than other institutions as a place to teach undergraduate students. Even more

striking, when faculty report their perceptions of institutional priorities and criteria for promotion, teaching excellence and undergraduate teaching are perceived as having a comparatively low priority, and the ratings of how well the institution does in promoting excellence in undergraduate teaching are the lowest in the system (Appendix A-Table 3). The faculty members also give UMass Amherst the lowest rating in the system for how well it does in providing assistance to students with weak academic backgrounds, promoting intellectual development of the students, and producing well-educated graduates (Appendix A-Table 9). On the other hand, Amherst faculty give the institution the highest ratings in the system as a place to train graduate students and conduct basic and applied research, as well as for having faculty who publish and produce scholarly and creative products (Appendix A-Table 3).

Finally, distinctive problems for attention cited by the UMass Amherst faculty include the repair and maintenance of physical facilities, more books and journals for the library, and less uncertainty about state funding levels (which is shared by all UMass respondents).

UMass Boston

UMass Boston has just over 470 full-time faculty members. Their professional priorities look similar to those of the faculty at UMass Amherst, with a bit less emphasis on teaching graduate students. They give UMass Boston considerably higher ratings than the comparable ratings at UMass Amherst as a place to teach undergraduate students, while giving the institution lower ratings as a place to do research and produce scholarly publication (Appendix A-Table 2). A central tension that appears in the responses of faculty members from UMass Boston is the balance between teaching and research. They perceive publication and research to be the primary criteria for promotion, but the ratings of basic and applied research at the institution are much lower than at Amherst or Lowell—similar to those at UMass Dartmouth. In contrast, faculty give UMass Boston considerably higher ratings than UMass Amherst in the area of promoting excellence of undergraduate teaching (Appendix A-Table 3). Moreover, in specific areas, UMass Boston faculty rate their school as high as or higher than, anywhere in the system as a place for promoting intellectual development of students and helping students examine and understand their personal values (Appendix A-Table 9). It is the institution in the UMass system that faculty perceive as best balancing liberal arts and career-oriented education (Appendix A-Table 10). It is also a place where faculty give the highest ratings to the diversity of faculty and students (Appendix A-Table 7).

In terms of problems, less frequently than UMass Amherst faculty, but still at a higher rate than average, Boston faculty mention repair of the physical plant and books and journals for the libraries. They also were the faculty most likely to mention reducing costs to students as a priority concern (Appendix A-Table 5).

UMass Dartmouth

UMass Dartmouth has a faculty just over 300. In contrast to UMass Boston, the priority for excellence in undergraduate teaching is quite clear at UMass Dartmouth—perhaps clearer than anywhere in the system. The faculty there consistently say that teaching is given the highest priority at UMass Dartmouth, and they say the institution promotes excellence in undergraduate teaching (Appendix A-Table 3). The education at UMass Dartmouth is rated less a liberal arts education (more career-oriented) than at UMass Boston (Appendix A-Table 10), but faculty rate most aspects of undergraduate education positively compared to other institutions (Appendix A-Table 9).

The perceived institutional priority on research and publication is fairly similar at UMass Dartmouth to that at UMass Boston. However, the personal goals of the faculty rate research and publication as less of a priority, and the perception is that such activities are given much less priority in promotion decisions than teaching. Hence, the ratings of the institution as a place to do research and teach graduate students, which are very similar to UMass Boston, are less at variance with the perceived priorities (Appendix A-Table 2). Overall, UMass Dartmouth stands out for being an institution with a clear priority for undergraduate teaching; the faculty generally think the school is doing the job of achieving the goals which that implies.

UMass Lowell

UMass Lowell offers a dramatic contrast to UMass Dartmouth. In many ways, UMass Lowell, with its faculty of almost 400, looks like UMass Amherst in terms of the priorities and the orientation of its faculty. The most striking aspect of faculty perceptions is the extent to which they see UMass Lowell as a place to train graduate students and conduct basic and applied research. The ratings of institutional priorities and achievements in this area are very similar to the ratings given at UMass Amherst. Moreover, the perception is that teaching excellence is perceived to be given less weight in promotion decisions at UMass Lowell than is the case at UMass Amherst (Appendix A-Table 3). However, when faculty were asked to rate UMass Lowell as a place in which to do their own research and publication, only 33 percent rated it as "excellent" or "good," a figure that is not much higher than UMass Boston and UMass Dartmouth, and much lower than the ratings given to UMass Amherst in this respect (Appendix A-Table 2). Hence, it is a research and graduate student oriented institution, with those as clear priorities, but the faculty find it to be only a moderately good place in which to do their own research.

UMass Lowell is a technical institution with traditional strength in science and engineering. One sign of this is that faculty members give high ratings to the level of competence of the undergraduates (in contrast to UMass Amherst faculty). The faculty also thinks some good things go on educationally at UMass Lowell. Along with UMass Dartmouth, faculty at UMass Lowell give the highest ratings to the job the institution does in preparing students for graduate or professional education. They also think the institution does a good job of preparing students for jobs after college and for producing well-educated graduates (Appendix A-Table 9).

Turning to institutional problems, the faculty at UMass Lowell cite repair of existing physical facilities and more books and journals for the library as their two highest priorities for additional funding. More support staff for faculty also made the list of priorities at a higher-than-average rate at UMass Lowell (Appendix A-Table 5). In addition, some of the ratings of the climate on the campus stand out from all the rest of the data. Perhaps the most striking rating is that only 34 percent said the institution did a "good or excellent" job of maintaining a positive campus climate where differences of opinions can be aired openly; the next lowest such rating was 53 percent (Appendix A-Table 7).

In conclusion, the key issue at UMass Lowell seems to be the role of undergraduate education. The faculty clearly perceive the priority of, and the fact that the school is doing a good job in, the areas of graduate education and conducting research. While there are some aspects of undergraduate education that are viewed positively by the faculty, the overall ratings of support for undergraduate education are almost as low as those for UMass Amherst. Given the priority of research, the responses also raise questions about why faculty do not perceive UMass Lowell to be a better place in which to do their research.

The State Colleges

The seven state colleges, plus Massachusetts College of Art and the Mass Maritime Academy, have a total full-time faculty of over 1,500. In contrast to the UMass campuses, priorities at the state colleges are quite clear to faculty: teaching undergraduate students is the highest priority (Appendix A-Table 3). While there are some graduate programs at state colleges, and nearly half the faculty (42 percent) say they are good places to teach graduate students, only one faculty member in five at the state colleges cites research and publication as a high personal professional priority. Not only is the priority of teaching clear, but faculty members at state colleges also have a generally positive view of the undergraduate education at their institutions (Appendix A-Tables 3 and 9).

The sample of faculty responses was not large enough to do individual analyses by institution. However, the analyses we were able to do show that there are differences by institution in relative emphases (career versus liberal arts education; sciences versus humanities). Nonetheless, looking at the data overall, on average, the faculty members at the state colleges give high ratings to what they do, including in particular their almost unanimous thinking that the colleges are good places to teach undergraduates (Appendix A-Table 2). On average across all institutions, the ratings of success in promoting excellence in undergraduate teaching are as high in state colleges as those given anywhere in the UMass system, except UMass Dartmouth. Also, while there is variation, another aspect of the state colleges of interest is that faculty see them as providing a better balance between liberal arts and career- oriented education than do faculty anywhere on the UMass campuses, except UMass Boston (Appendix A-Table 10).

One of the striking aspects of the data from the state colleges is that the faculty members generally seemed to like working there (Appendix A-Table 8). They give higher than average ratings to their relationships with their administrations (Appendix A-Table 6).

When asked about areas that need to be strengthened, faculty members at state colleges are particularly likely to cite a need for upgrading equipment and facilities and more support staff. Higher faculty salaries are also a concern at state colleges. However, there is much less concern about physical maintenance than tends to be found at the UMass campuses (Appendix A-Table 5).

The Community Colleges

In many ways, the data from faculty of community colleges mirror those of the state colleges, only the importance of the undergraduate teaching mission is even clearer (Appendix A-Table 3). As a group, faculty at community colleges are exceptionally positive about their work and about what is going on in their institutions. For obvious reasons, the perception that community colleges are about undergraduate education is universal. As is the case with the state colleges, there is heterogeneity among the community colleges in how faculty rate them; some colleges are rated better than others by their faculty members. Nonetheless, 92 percent of faculty respondents at community colleges rate their institutions to be "good" or "excellent" places in which to teach undergraduates (Appendix A-Table 2). When faculty were asked about specific aspects of what they are doing, 81 percent said that community colleges do a "good" or "excellent" job of providing assistance to students with weak academic background; over 80 percent also say they do a good job of preparing students for jobs after college (Appendix A-Table 9). These are the highest numbers of the system, despite the fact that they are averages of over 15 institutions. When faculty rated how well they performed at eight functions of undergraduate education, the ratings from the community college faculties were highest on seven (Appendix A-Table 9).

Community colleges also resemble state colleges in that these are places that people seem to like to work (Appendix A-Table 8). They generate the highest ratings of the overall work situation and the relationships with colleagues. When asked about areas for additional attention and resources, higher faculty salaries top the list. The faculty at community colleges, state colleges, and UMass Dartmouth all stood out in the extent to which salary levels were a concern. However, the highest single priority for faculty members at community colleges was more full-time faculty. The extent to which the colleges have had to rely on part-time faculty and have been unable to hire full-time faculty was cited as a "major problem" by 43 percent of all respondents, but by 67 percent of the faculty members at community colleges; 60 percent of community college faculty said it was the highest priority for how to spend additional funding. Because the community colleges were generally built more recently, the physical plant needs are seen as much less than in most other institutions in the state (Appendix A-Table 5).

The Students and Their Concerns

Although a comprehensive national survey of student opinions by the *Chronicle of Higher Education* is available, we have chosen instead to use a survey of undergraduate students conducted by UMass Amherst (which surveys its undergraduates each spring).

The latest student survey was conducted by Project PULSE in April 1993. This survey was designed to test student attitudes toward class size, learning environment, and instruction. From a random sample of 416 students, some 373 agreed to be interviewed. The response rate was 44 percent. Comparable data for the other campuses was not available.

Students were asked how many courses they have had with 30 or fewer students. The average number reported was 2.5 out of 12 courses. They reported having had an average of six classes with 75 or more students, and an average of 3.5 classes with 200 or more students. When asked to indicate their preferred class size, 47.8 percent said "30 or fewer," while 33.1 percent said "30 to 75."

More than one-half (57.8 percent) of the respondents agreed that "the impersonal teaching style characteristic of large lecture classes interferes with students' ability to learn." More than two-fifths (46.9 percent) agreed strongly that "in general, students learn better when they are required to participate actively in class."

Over half the students surveyed said they think that instructors cannot teach large classes as effectively as they can teach small classes. However, nearly two-thirds felt that "the self-reliance required of students taking large classes assists their learning." When questioned about specific aspects of their last large lecture class, over four-fifths of the students indicated that they had "hardly any" or no personal contact with the instructor. At least 70 percent reported satisfaction with their ability to understand the lectures, take good notes, keep up with the course readings, attend class regularly, and prepare for the quizzes and tests. Nearly three-fifths reported that they attend their large lecture classes less regularly than they attend their smaller courses. Less than one-third of them expressed overall dissatisfaction with the large lecture courses.[9]

9. Contemporary research as reported by the *Chronicle of Higher Education* shows no clear relationship between class size and overall performance.

In addition to the data obtained from the UMass Amherst undergraduate survey, we met with a student focus group on that campus on November 30, 1994. For the most part, these students seemed quite satisfied with their overall educational experience. However, they expressed dissatisfaction with certain aspects of student life. The hot button issue that would not go away was the increase in tuition and fees and the corresponding decrease in financial aid. This controversial issue in fact sparked their involvement in student advocacy. For them, the question was one of "financial survival." They were also concerned about what they perceived as the excessive use of teaching assistants, the high rate of student attrition, and the lack of an effective student retention program. Academic advising in their opinion leaves a lot to be desired, often resulting in a mismatch between faculty advisor and student advisee. Both the quality and delivery of student services is another area that they felt could be improved. Their other concerns had to do with inadequate state funding, failure to keep the library open after 5 P.M. on weekends, payment of a $20 fee for E-mail, and the lag time involved in obtaining state-of- the-art technology for computer users.

Summary of Surveys

By way of contrast and comparison, we learn from these various surveys that the major stakeholders hold sharply divergent viewpoints. The public at large wants quality public higher education at low cost and close to where they reside. The legislature wants access and affordability, quality teaching, and more efficient use of resources. The faculty are divided, with some wanting to place the highest priority on undergraduate teaching and others wanting to concentrate on research, publication and graduate education. Finally, the students seem most concerned about access, retention, and the high financial costs of their college education.

New Times and New Ways

Although public higher education in Massachusetts endured extraordinarily hard times from 1988 to 1992, each campus somehow survived. Faculty compensation was frozen or suspended during those years. Direct student charges more than doubled. Important curricular innovations were postponed; new professional degrees were never offered; critical student services were eliminated. Yet the institutions persevered.

Perhaps more importantly, key constituencies—the public and public officials, the faculty—now view our current situation from very separate perspectives. Sharp differences in opinion appear in the priorities assigned to research, graduate programs, undergraduate teaching, access and outreach, and adequacy of financing. Finally, recovery from these losses will take time, at least years, even if effective damage control was exercised.

Nonetheless, it would be a cardinal mistake to conclude that our institutions of public higher education can or should emerge from the wilderness years with the same goals, the same responsibilities, the same practices and standards for performance as before. Especially given the survey findings, to replicate the past three decades when these institutions came of age is a prescription for disaster, educationally, politically, and financially. Needs have changed dramatically, and so must public higher education.

Fortunately, there are strong signs at every level of institutional leadership that the new times are recognized, and that new ways in the enterprise must be put in place. Especially impressive is the work of the intercampus task forces now underway at the university and the articulation of partnership arrangements developing among state and community colleges.[10] But whether or not the pace and scope of changes taking place are adequate remains open to question.

10. See Briefing Book for the Joint Task Force on University of Massachusetts and Community College Relations.

New Times

Whatever the variance in opinions and perceptions of the key constituencies, overall today public higher education in Massachusetts and across America exists in a far more hostile environment than when the hard times began. Last spring the *Pew Education Roundtable*,[11] an objective commentator on higher education today, declared: "The changes most important to higher education are those external to it. What is new is the use of societal demands, in the American context, market forces, to reshape the academy." The Pew Report continues: "The real anger at higher education comes principally from the makers and shapers of public policy—governors, legislators, regulators, heads of public agencies, and surprisingly, an increasing number from the world of private philanthropy."

11. Pew is a charitable foundation named after the Pew family.

The indictments the Pew Report makes explicit are two: first, the failure to provide adequate access to underrepresented populations and to provide graduates sufficiently skilled to be both efficient workers and informed citizens; and second, the stance of sheer elitism of our institutions, widely perceived as "a self-perpetuating oligarchy openly disdainful of the opinions of others."

The more specific criticism of Pew is that higher education, public and private, has failed to understand the saliency of education which results in good jobs. It has also to date largely failed to use in its own work the communication technology that its very own research has generated. Teaching and learning too often tend to continue by classroom rote in 50-minute-hours or once-a-week seminars. Third, it has failed to acknowledge the very real threat of private non-educational sector takeover in which the shadow educational corporations and companies can provide more instruction at cheaper rates.

The Pew appraisal is representative of an informed body of criticism from a host of sources: media, opinion-makers, commentators, parents, and students. About the time of the Pew report, for example, the Wingspread Group on Higher Education—by tradition and composition disposed to support the Academy—issued an "open letter." Backstopped by positions and essays of its members, it identified three central issues:

- *taking values seriously*—the nation's colleges and universities should reaffirm their conviction that the moral purpose of knowledge is at least as important as its utility;
- *putting student learning first*—we must focus overwhelmingly on what our students learn and achieve;
- *creating a nation of learners*—we must redesign all of our learning systems to align our entire education enterprise with the personal, civic, and workplace needs of the 21st century.[12]

12. The Wingspread Group on Higher Education received major funding from the Johnson Foundation for a study on Higher Education in America. The study was published in 1993.

The difficulty is not so much the almost universal criticism now directed toward academic institutions as it is the apparently instinctive, stubborn, and persistent resistance with which the academy responds to the charges. According to California State University Chancellor Barry Munitz, "There is anger out there from our traditional supporters.... They're saying we want to see change, we want to see things done differently and we're not sure we believe that you're capable of making that change." Although university presidents and chancellors have been forthright in their views that radical reform is a necessity, these concerns have not as yet been accepted by the key constituency of the faculty. Here the instinctive academic response appears too often to be "stonewalling." Given the tradition of its substantial autonomy in appointment and curriculum authority, serious institutional change may come hard.

So William Honan, in the January 9, 1994 *New York Times Magazine*, writes of the "entrenched professoriate" and cites a half-dozen institutional examples where faculty communities proved "unwilling to accept change" and showed themselves "deeply conservative." They lead Gerhard Casper, president of Stanford, to comment upon the absence of power at the top and a plethora of power at the bottom. He characterized himself as "the man with the pail and the broom."

Confirming the continuing faculty conservatism in the same month of Homan's analysis—and sharply disputing him—the American Association of University Professors concluded in a study titled "The Work of Faculty" that external mandates of workload and productivity are not "effective or desirable means for enhancing the quality or cost- effectiveness of higher education." The study expressed doubt as to the desirability of special rewards for superior teaching and explicitly affirmed support for research. "Eliminating research from the bulk of our campuses and relegating it to an elite few would cost our country dearly," it professed.

The sharp national disjuncture between the call for change on the part of the policy makers, informed observers, and media commentators and the internal resistance to change is replicated with some precision in Massachusetts. It not only appears in the opinion survey summarized in the last section, but also is starkly evident in recent self-studies and accreditation reports from the university and college campuses. With only few exceptions, the overwhelming disposition of the faculties and their often sympathetic accreditation reviewers is to continue in the triumvirate tradition of research, teaching, and service in that order, and defined primarily in provincial institutional terms. They assign special attention to graduate work and still assume that the future student cohort will come largely from the recent high school graduates pool as it did decades ago.

Thus, the accreditation steering committee and task force chairs of the draft self- study of UMass Boston in October 1994 reported to the university community that four major areas—assessment, planning, the physical plant, and governance—required strengthening. But it pointed with pride to the expectation that by Commencement 2000, its baccalaureate degree recipients might replicate a 19th century version of a liberal education: "write and speak English competently, reason scientifically and quantitatively, analyze critically, think logically, and continue learning; [be] knowledgeable about scientific, historical, and social phenomena; and have an informed appreciation of aesthetic and ethical issues."

Two years earlier, the final report of the Boston Faculty Workload Committee came to similar conclusions—recommending the delegation of workload standards to the academic departments and a reduction of teaching load "for their most productive scholars" and an even further teaching reduction "for scholars who also regularly obtain significant extramural funding for their research." The Amherst campus, in its most recent self-evaluation (1993) took such concepts and standards as self-evident. Making explicit its objective to obtain membership in the American Association of Universities (the 58 top research universities), its mission statement clearly asserted "that the Amherst campus is the flagship for Massachusetts public higher education. Given this role,... graduate education and research would be increased in quantity and quality...[and] undergraduate education and research would each be informed and improved by that increase." The Lowell self-evaluation is similarly inclined, speaking of "an ambitious view of the university as a comprehensive university encompassing (a) a research university (b) professional schools and (c) colleges providing a Liberal Arts education to undergraduates who are primarily technology oriented."[13]

13. See Accreditation and Self Study Reports for the four University campuses.

In short, the contemporary perspective of at least the university campuses and, according to the survey, several of the state colleges, remains a highly traditional commitment to liberal arts as classically defined a century ago by Cardinal Newman and reaffirmed in importance in World War II America by the influential volume *General Education in a Free Society*.

Indeed, what the faculty survey makes clear is the preference for Western civilization, traditional teaching measures, and a balanced science and humanities offering. So this almost universal acceptance of the research university as the ideal to be emulated—and the absence of a persuasive alternative—appears to be the root difficulty in changing higher education. The prototype enshrines the longtime cliché "knowledge for knowledge's sake" and disparages efforts to have the universities and colleges focus on problem-solving which might serve the larger communities.

At rock bottom, the faculty constituencies persist in their allegiance to the 19th century model of the research university, because they see no other model. They continue to embrace an uneasy union of the colonial college traditions, the German research model which Johns Hopkins pioneered, and the land grant universities which the Morrill Act provided. Although there are significant variations between land grant contributions to the rapid application of knowledge to practical needs (initially in agriculture) and in terms of mission statements, curriculum content and professional habits, the traditional model blending German and colonial traditions prevails. Research comes first, then teaching, and finally service, mostly internal in character. The consequences of these standards need to be explored.

The Unholy Trinity

The criteria which establish this trinity of higher education values (research, teaching, service) are of course not always valid. Certainly they are not always measurable in genuinely objective ways. "Publish or perish" implies some clear way of discerning reputable publishers. Yet the explosion of knowledge primarily in the natural sciences has spilled over to the humanities and social sciences, so that there are now about 180,000 journals worldwide. Critics may well question the utility of such a profusion of publication, dividing disciplines and fields to such an extent that comparatively few write for and comparatively few read each. So long as publication is a prerequisite for advancement, verified by referees unknown outside the academic specialty, the sheer number of journals makes infeasible any universal standard of scholarship. It becomes the province of the discipline. In organizational terms, the initiative for providing the grand prize of the academy—tenure—lies with its lowest organizational unit, the department.

If the judgment about true scholarship is relative, discipline-focused, conducive to advocacy and intrigue, then the standards for effective teaching are similarly opaque. Since the upheavals of students during the late Sixties, and acting principally at their insistence, class evaluation questionnaires have become almost universal practice. Confidence in their conclusions varies widely by academic department and campus, and their weight in promotion and tenure decisions is uneven. On occasion, classroom presentations may be videotaped, or departmental chairpersons may observe junior faculty. Most campuses will coach faculty members with poor teaching records, but typically on a voluntary basis. Nonetheless, the major focus of graduate study is on research and scholarship. So neither professional preparation for teaching or the evaluation of teacher performance is systematically undertaken.

The appraisal of "service" contributions remains even more subjective. Service is typically defined as on-campus work in committees and governing bodies, and the judgments rendered are necessarily and mostly personal. Is a colleague "cooperative" or "abrasive?" Does she or he "pull her or his weight?" Is she or he "constructive" or "confrontational," "sensitive" or "unaware?"

Since "service" is rarely given high priority, the more serious issue is its extremely limited definition. Lip service is paid to "community advising" or public-spirited consulting, in short a range of off-campus instruction and applied research activities of benefit to all parties —academy, public agency, private corporation. But in reality, such activity is usually confined to a day a week, written off as consulting, and often judged to be in competition with and inferior to campus service. The fact that off-campus activity, both in teaching or research, can enhance the quality of academic life, can be made complementary to campus activity, and is part and parcel of the land grant tradition, is rarely acknowledged.[14]

14. See University accreditation reports and the 1992 Commission on the Future of State College and Community College Systems' "Responding to Change."

To review the subjective, fragmented and uneven priorities now in place in the American research university is to establish the increasing tension between the university and the expectations and demands placed on it by the outside world. The contemporary controversy between classicism and cultural relativism turns out to be largely a sideshow, a diversion from trying to figure out what public higher education should do next. Neither a wistful return to the yesteryear of the ancients, nor the contemporary potpourri of deconstructionists, post-modernists, and post-structuralists, provide us with reliable clues as to appropriate new directions. The genuine issues are how to accelerate and manage responsibly the process of technological change without leaving it exclusively in the market place, and how to cope with the explosion of new immigrants and new ethnic cultures and still maintain cultural and political consensus sufficient to preserve the Commonwealth.

A Third Force

If the archetype of the research university no longer suffices, what model can we put in its place? Here the leaders in public higher education in Massachusetts are offering timely new strategies. Michael Hooker's "Interactive University" and David Scott's concept of the "Connected University" are intriguing alternatives. Scott argues that the next step is not a return to the traditional university, but rather a new transformation of scholarship well beyond Clark Kerr's "multiversity."[15] It involves a shift from knowledge orientation to wisdom orientation—or an emphasis on problem-solving instead of preoccupation with technique and methodology. With these models in mind and with the task forces now at work in the University, changes in criteria for academic behavior emerge. A renewed attention to teaching and development of professional standards for its evaluation is one. A more stringent and less parochial threshold for establishing truly distinguished scholarship is another. A third is a drastic revision in the concept of service or academic outreach, putting it more and more off campus, professionalizing it and making it responsive to outside needs and consistent with outside obligations.

15 Clark Kerr explains in his 1963 work, *The Uses of the University*: "The 'Idea of a University' was a village with its priests. The 'Idea of a Modern University' was a town—a one-industry town —with its intellectual oligarchy. 'The Idea of a Multiversity" is a city of infinite variety. Some get lost in the city; some rise to the top within it; most fashion their lives within one of its many subcultures. There is less sense of community than in the village but also less sense of confinement. There is less sense of purpose than within the town but there are more ways to excel. There are also more refuges of anonymity—both for the creative person and the drifter. As against the village and the town, the 'city' is more like the totality of civilization as it has evolved and more an integral part of it; and movement to and from the surrounding society has been greatly accelerated. As in a city, there are many separate endeavors under a single rule of law."

There are also other urgencies: one is a more careful distinction between graduate work in the traditional fields leading to the PhD and professional doctoral programs. A new emphasis is also in order on the essential element of undergraduate education, in which subjects more or less discipline-free take precedence over either classical or multicultural offerings. Third is a disposition to search out ways for collaboration among campuses at all levels of public higher education and with appropriate private sector counterparts as well. These are fundamental shifts in conventional definitions of mission, in development of resources, financial and human, and in the physical siting of our endeavors. They are difficult initiatives in difficult times. So we need to be specific in our recommendations and very clear as to their feasibility.

Five Steps Forward

Step One: Mission Redefinition and Curricular Reform

If the principal objective is to move the system forward—to achieve a new model of university and college, a redefinition of mission in each segment, an implementation of the key themes that the university and college task forces and strategic planning groups are now exploring—then new faculty perspectives are necessities. Some initiatives in curriculum reform and structure are in order.

The focus must be as well on the evolving nature of the Academy itself. "Very simply," as Harold Enarson, president emeritus of Ohio State University, puts it, "Land Grant universities cannot address the giant challenges of American society if they slavishly follow the research university model."[16] But the difficulties in this transition to an "integrated university," as Ernest Boyer puts it, or to a "transversity," to use David Scott's felicitous phrase, are not to be underestimated. So institutional renewal and redirection requires leadership now underway.

16. "Revitalizing the Land Grant Missions," address at Virginia Polytechnic and State University, August 1989

Building an alternative model, such as that of metropolitan and urban universities, requires reform of both substance and structure.[17] On substance, if we seek economic revitalization and demographic pluralism, more than the traditional menu offered in the conventional arts and sciences is required.

17. Ernest Lynton notes that metropolitan universities must be both "metropolitan—that is, institutions responsive to the needs of their region—and universities—that is, institutions with a faculty of scholars whose applied research and professional outreach is based on the latest knowledge." (*Metropolitan Universities*, Spring 1992)

Curriculum is part of the new style. The new curriculum clearly must include a focus on economics. Whatever the discipline's limitations, economics offers the rigor and quantitative skills students need to begin to understand our political and social institutions. There also should be a new emphasis on communications, not only an emphasis on writing but also on oral communication and visual skills. An understanding of the natural sciences and technologies continues to be an imperative—more often paid lip service than practiced in laboratory or classroom. We need to pay special attention to human behavior in large organizations which drive our economy, direct our government, and shape our social and cultural lives. Experiential learning, internships, and fully developed field research "outside the classroom" are also requisites.

An interesting experiment in urban higher education was launched at UMass Boston in the early 1970s when the College of Public and Community Service was created. This college, popularly known as CPCS, pioneered in the educational innovations that are now its trademark. Among other objectives, it sought:

- to combine pre-professional training with liberal arts education, and to do so in fully integrated fashion;
- to serve an older and relatively low-income clientele marked by a high degree of racial and ethnic diversity;
- to accommodate the special needs of non-traditional students with full-time employment;
- to implement a "competency-based learning" approach to undergraduate education, in which progress is measured by the demonstration of defined "competencies" rather than by the acquisition of course credits;
- to use field-based education, experiential learning, and community service work as part of its curriculum;
- to eliminate faculty and organizational distinctions based on the conventional academic disciplines;
- to recruit faculty members from practitioner as well as conventional academic backgrounds.

As a new institution back in 1973, CPCS was able to escape being restrained by traditional forces, although the college went through a difficult shakedown cruise. It had to establish a public image from scratch, to forge an internal community, and to lay a foundation of precedents even while seeking to perform its many missions. CPCS has had more than twenty years of experience in which to find its most effective mode of operation. And the time seems ripe to evaluate what was learned from this bold experiment and to share that information with the larger academic community.

There are other vital substantive issues that need to be examined. Curriculum planning on a comprehensive basis has not moved above the campus level. A key problem facing the public university and college is the absence of central curriculum governance. As a result, there is much duplication of effort which results in programmatic redundancy. Again, HECC has signaled the need for each campus to engage in selective development, supporting the 1992 Commission call for specific focus areas for each college.

There is no better illustration of existing redundancy than in the several fields of nursing, engineering, and management. Nursing is scattered over all five UMass campuses and many state college campuses. Each has its own emphasis within the profession, its own cooperative agreements with local hospitals, and its own constituents who depend on their local program for continuing education in the profession. State and community colleges offer health care programs, sometimes complementary to the University, sometimes not.

Similar duplication is evident in engineering and management. Graduate engineering programs already exist at Amherst and Lowell, yet Dartmouth recently proposed a new masters program in mechanical engineering. Currently, the UMass system has four separate programs in management on four separate campuses, but only two of them are accredited by the American Assembly of Collegiate Schools of Business. (A third has entered into candidacy.) Other examples are prominent especially in state colleges, although their regional orientations often appear to justify redundancy.

Accordingly, a most urgent need is to establish a structure of priorities. Here we recommend the idea of the "lead campus," a term somewhat more specific than "focus" as proposed by HECC and the Board. This concept, which denotes a particular priority or particular interest, is taken from the "lead agency" idea used in the field of public administration and suggests a priority appropriate to each institution. In much the same fashion, one campus can take the lead for developing a particular academic program or specialty. We believe that the lead campus model is an appropriate mechanism for sorting out priorities. How particular campuses decide that their faculties meet the capacity for "lead campus" designation is a question requiring detailed inquiry and review. But the issue of program focus and the capacity to provide curricula of high quality is central to each campus' future.

Another central concern is the compelling need to restore teaching to the highest priority. This reform not only involves putting student learners first as the Wingspread Group on Higher Education suggests, but requires that every departmental or professional faculty be also a teaching faculty. Those campuses that excel at undergraduate instruction, like Dartmouth and Boston, should be encouraged to continue to do so. Crowded introductory courses and academic advising must also be priority concerns. For the faculty who may be unable to adapt to the new model, we recommend the establishment of an "honors college" similar to the one at the University of Michigan.

As far as graduate work is concerned, the edge goes to UMass Amherst, especially in the traditional fields. It has been recently acknowledged in two Nobel prizes whose recipients made their discoveries while at the University. But the PhD of the traditional sort is not sufficient in the Interactive or Integrated University. The explicit aim in future years should be to produce competent professional practitioners as well as the conventional PhDs. This is not just a question of content, but also of format: use of practice in the curriculum, use of practitioners, and the nature of the dissertation. The aim here is to ensure competent professional performance, and to provide increased emphasis on the development of apprenticeship opportunities and the explicit evaluation of skills in real occupational settings. These doctoral programs should be designed on a selective basis. They should be separately plotted and there ought to be a critical mass of faculty to sustain such programs. Again, the concept of the lead campus is central to strategic planning and execution.

On the structural front, two major adjustments are in order. First, the governing processes internally should be strengthened at the departmental, school, campus, and system level. Although this reform runs against the grain of the traditional research university, where the preference has long been that authority, decisions and policies flow from the bottom up, the testimony of observers and practitioners alike—most recently in *Daedalus*[18]—is to the contrary. Department chairs need to have greater oversight of sanctions and rewards of their colleagues, deans need authority to reallocate funds among programs, provosts and chancellors more capacity to review faculty performance and priorities, and the president more ability to introduce uniform standards and to propose and specify campus missions.

18. See *Daedalus* issue devoted to "The American Research University," Fall 1993.

Second, as beset as public higher education has been and as uncertain its revival to date, an urgent priority is to strengthen its links with K-12 education. The September 1994 HECC report concerning coordination and collaboration to address change "emphasizes the urgency in improving the links between post-secondary and K-12 education."[19] Whatever the last twenty years' problems may have been in post-secondary education, they pale when one considers the loads placed on plain education, especially urban schools. Ever since court-ordered pairings by Judge Arthur Garrity joined together Boston-area colleges and universities with the desegregated Boston high schools, the potential for joint ventures has existed and has, in some cases, effectively been realized. Currently, the Chancellor of UMass Boston chairs the Higher Education Partnership of 26 public and private universities and colleges, one of the oldest collaborative programs in the nation and designed to support the Boston Public Schools.

19. See "Using Coordination and Collaboration to Address Change," HECC, September 1994.

Nonetheless, these efforts have primarily represented the hard work of schools of education, and have left the faculties of arts and sciences for the most part unengaged. Unless the faculty of arts and sciences—the powerhouse of any campus—joins in this venture, and comes to appreciate the missions, tasks, and pedagogies of the other components in the process, the end result is bound to be disappointing. Especially in Massachusetts, where new K-12 reform is underway, the opportunity of our campuses to extend and deepen their collaborative efforts is timely, appropriate, and, particularly on a regional basis, essential.

Bridgewater State College, through its Moakley Center for Technology—which utilizes a fiber-optic network and up and downlink satellites—is poised to dramatically impact the use of cyberspace technology in K-12 learning environments in southeastern Massachusetts and beyond.

Step Two: New Professional Criteria and An Effective Retirement Plan

The evaluation of faculty performance is arguably the most contentious issue in higher education. School officials must deal with it directly every time a faculty member stands for appointment, promotion, or tenure. Uncertainty as to the standards that should be applied vastly complicates decision-making and usually impedes the maintenance of high faculty morale. At worst it generates intense feelings of trepidation, frustration, and inequity.

The contentiousness of this issue arises from the fact that faculty personnel decisions strike the nerve center of academic life. They bring out in the sharpest relief both the best and worst of that life—the profound commitment to professionalism and the deep well springs

of conservative rigidity and inflexibility. Since the faculty are the permanent members of the academic community, more than any other group or constituency, they collectively shape its character and earn its prestige.

The problem of evaluating faculty performance is complex—it is a series of interrelated problems, not a single one. As we have seen, among the three standards that are commonly used for determining tenure and promotion, academics place the highest premium on research and publication. Not surprisingly, faculty resist strongly any suggestion that the criteria for faculty personnel decisions should be changed to accommodate new societal demands upon higher education. Accordingly, progress in recruitment and retention of women and minority faculty has been painfully slow, although the goals of affirmative action have been in place for 25 years.

Yet if one trade-off for financial stability and assured access of middle-income students is the redefinition of mission via the lead campus or focus concept and the elimination of program redundancy, another logically follows—a fresh look at faculty roles and rewards. Fundamentally, this involves a redefinition of the traditional triad of scholarship, teaching, and service, criteria whose limitations we examined earlier. The university-wide task force in its draft recommendations has already called for a new terminology, pointing out it might be productive to speak of the scholarship of teaching and learning, the scholarship of discovery of knowledge, and the scholarship of public service or academic outreach.[20]

20. Five University task forces address the following central themes: Teaching and Learning, Research and Graduate Education, Public Service, Economic Development, and Diversity and Multiculturalism.

These recommendations and their elaboration specific to the University of Massachusetts can be applied with varying weights to all the Commonwealth's public colleges. More important, they fall squarely within the mainstream of national evaluation and commentary.

In his authoritative book *Scholarship Reconsidered*, Ernest Boyer calls for a broader conception of scholarship so as to include not only traditional research but also teaching and service as valued dimensions of faculty work. He identifies four elements of scholarship: creation, integration, teaching, and application. He perceives scholarship as an activity which includes all four. In Boyer's view, the criteria for scholarship should lead to guidelines for documentation and evaluation of the whole range of faculty activities. Speaking with many years of academic administrative experience in the Northeast, Ernest Lynton bolsters Boyer in calling for a broader concept of the process of scholarship.

The evaluation of teaching is a major campus problem, particularly at the university level where research dominates most other faculty activity. Here, the UMass Task Force on Teaching and Learning is especially relevant. It calls for more "hands on" experience, expanded use of advanced technology, and more emphasis on multi-disciplinary approaches. Aside from student course evaluations, there are no clear procedures in place to carry out the evaluative function of assessing teaching and learning. Here again the university task force emphasizes the effectiveness of faculty development centers and outside evaluation.

Competence in teaching can be evaluated. This means that our institutions need to pay substantially more attention to their teaching function. Indeed, teaching non-conventional students and newly arrived immigrants can be a much harder and more demanding task than teaching the younger, more homogeneous, better-prepared student body of an earlier age. Hence, both new measures of evaluation and new faculty rewards should be put in place.

Also, much greater use of modern communication technology in teaching is possible. Internet, television, video tapes, multi-media presentations, interactive computers, and assisted learning can be used not only to teach a larger number of students who are spread over distant locations, but also to evaluate faculty teaching.

In Massachusetts public higher education, encouraging progress seems underway. For example, Chancellor Sherry Penney launched a Core Technology Working Group at UMass Boston. Charged to develop a five-year plan, it states its mission this way: "We must move forward collectively in enhancing our technological capacity so that we can offer our students the best education and the best services, provide support for our faculty and staff in key research, community service and support functions, and make effective use of the broad range of rich information resources soon to be at our fingertips."

So far as the service component is concerned, until recently it was a distant third in the rank order of the standards used in faculty evaluation. In contemporary times, service usually means committee work on campus, participation in civic organizations, or work done for professional associations. This is a significant departure from the land grant tradition, where the faculty member's professional expertise was to be applied to agricultural or industrial problems and tasks outside the campus.

There are a number of ways to enhance the criteria of service and to advance the UMass task force's concept of "academic outreach." One way is to define the term more precisely. Sandra Elman and Sue Smock, in their report entitled *Professional Service and Faculty Rewards*, define service as "work based on the faculty member's professional expertise that contributes to the mission of the institution." This definition distinguishes service from institutional good citizenship or civic participation, or philanthropic or pro bono activity. To quote the task force again: Academic outreach is "not an activity apart from scholarship, but rather the distribution of our basic commodity, knowledge, to a different clientele or a different location."[21]

21. See the recommendations of the Task Force on Public Service. Also, we need to pay heed to the AAU/Land Grant objection Chancellor David Scott has identified.

Probably the highest priority in academic outreach is in the area of state economic development. Here HECC, the Commission, and the University task force define the task as applying university and college resources "to the task of strengthening the local, regional and state economies."[22] We would add that such resources should be applied to social as well as economic issues. This policy position parallels that of Lynton's. He emphasizes the "fit" between knowledge and problems articulated by the outside world.

22. See the central themes of the Task Force on Economic Development.

So the criteria of professional service and academic outreach are essentially the same as those for documenting scholarly research—originality, quality, and adequacy of the knowledge base. More fundamentally, the radical revision of standards for the recruitment and retention of faculty is a second "trade-off" in return for stable financial support. A better focus on mission and better planning, and better standards for rewards, are key elements. Another is new personnel strategies.

The Retirement Conundrum

The aging of our faculty is an increasingly complex issue both financially and in terms of academic quality. Tenure rates for the entire system stand at 67 percent, about the national average (66 percent) for four-year public universities. For both Commonwealth and nation, this is a major concern. As state support for public higher education declined here between 1988 and 1992, institutions responded by downsizing their faculties. This was accomplished primarily by a reduction in the ranks of non-tenure, tenure-track faculty as earlier statistical analyses have shown.[23] So tenure rates by department tended to go up during the wilderness years. The campuses protected their senior faculty, and their junior faculty became more vulnerable. In effect, the pipeline dried up as far as replacements were concerned.

23. According to the 1993 internal memorandum on University Tenure Rules, "the past decade has seen the increased use of non-tenure track and part-time appointments, rolling contracts, extended probation and suspension of 'up or out' rules, stricter standards for tenure, review of tenured faculty, incentives for early retirement, and tenure caps or quotas."

Early retirement is essential in striking a contract of adequate support and institutional accountability. For many years, colleges and universities have ensured the timely retirement of their faculty by establishing a mandatory retirement age, typically age 65. The exemption from federal age-discrimination legislation that allowed mandatory retirement rules expired on January 1, 1994. This issue now clearly requires the close attention of presidents, trustees, and faculty. The stakes are high, touching on tenure policy, personnel costs, and the institution's ability to hire younger faculty, women, and members of minority groups. The immediate costs may be substantial but the long run savings and the increase in academic performance may be even more important.

The lack of an effective early retirement program is a major roadblock to restructuring the public university and colleges in a humane way. Over the past few years, the state legislature has twice passed early retirement bills, but the governor twice vetoed them for reasons that are not altogether clear. Whatever the reasons for the demise of these bills, the public university and colleges need to have flexibility in order to make changes that will allow them to restructure and shift direction to accommodate to shifts in student demand. This kind of flexibility will enable them to do so on a selective basis and without decimating certain departments. Indeed, early retirement can be viewed as an issue of deregulation, where campuses need to have another degree of fiscal autonomy. Deans and presidents ought to have the discretion to offer retirement to up to ten percent of their faculty. The point is that it needs to be done surgically rather than by making blanket policy. Standing still on this issue is not an option.

Step Three: Patterns of Collaboration Among Public Institutions

The signal contribution of the Saxon Commission Report in 1989 was to establish the fact that the University of Massachusetts best functioned as an extended system. The five-campus structure then put in place both clarifies staff and line relations between the President's Office and the Chancellors, and makes possible a consensus articulation of the missions, priorities, and capabilities of each unit. That inquiry, with intensive exploration of opportunities for program collaboration between and among campuses, is well underway.

Relationships among the new university structure and the community and state college systems were not directly addressed in 1989. An articulation agreement between the university and the community colleges had been explicitly agreed to in the Seventies and affirmed by the Speaker of the House and the President of the University. Its subsequent implementation has had varied success among the respective campuses. The relationships with and among state colleges are even less codified, although the establishment of HECC continues oversight over all of higher education. As HECC's September 1994 report "Using Coordination and Collaboration to Address Change" points out, its present role as coordinator is in rather sharp distinction from the governing authority of the former Board of Regents. The two statewide boards of trustees for the state and community colleges, established in the expansive era of the Sixties and early Seventies, were abolished in 1980. Each of the 24 campuses now has its own board of trustees. Discrete program arrangements among university, state, and community colleges exist at the initiative of chancellors and presidents, but no coherent overall policy is yet evident. As the Council observes, "concern about the need for greater clarity of governing authority for state and community college trustees remains."[24]

24. The HECC Report just cited provides a clear background analysis of the major issues facing the system and outlines a planning process initiated in October 1993, and scheduled for development and implementation by December 1995.

Overall however, the mosaic of state college governance appears generally satisfactory. The separate boards of trustees that came into existence in 1980 with the abolishment of the segment boards have evolved in a generally healthy fashion. As one reviews the rosters of the state college trustees, one is generally impressed with their caliber. Since their inception, these boards have been for the most part helpful to the state colleges.

Aside from two specialized colleges (Mass College of Art and the Mass Maritime Academy), each state college serves a localized area. The seven locality-oriented colleges offer at the undergraduate level baccalaureate degrees to hard-pressed populations that cannot leave home to go to college. So the guiding principle for the colleges is the regional affiliation.

Labor relations arrangements do leave much to be desired—both as a process and as an impediment to campus governance. Statewide, HECC is the employer of record for both the state and community colleges. The faculty contract negotiated by the MTA applies to all nine state colleges. But collective bargaining agreements, divided as they are between the negotiations over compensation (by the Commission of Administration and Finance) and working conditions (by HECC), are no substitute for faculty senates or councils for reforming curricula, adjusting priorities, and formulating teaching arrangements. And effective representation of state and community colleges needs on an aggregate basis, in the judgement of most observers, to be strengthened.

There were efforts in the past for more general restructuring of community/state college paralleling. In 1991, when serving as acting chancellor to the Board of Regents, Randolph W. Bromery proposed grouping the state public institutions into five regions, with structured tiers building up from community colleges to state and university campuses. The region could act as a single unit in delivering academic services under the Bromery plan. For example, Quinsigamond Community College, Worcester State College, and the University Medical School could offer combined allied health service programs. Like the Boston proposal, however, the regional approach never was implemented.

Within these circumstances of structural fluidity, the major demographic and economic forces described in earlier sections of this report continue their pressures. The question arises: Do governing and coordinating systems essentially designed in the good times of the Sixties, and only partially revamped since then, suffice to deal with today's stringent economic times? Can the system handle the sharp shift in enrollment pressures, both for conventional high school graduates and non-conventional life-long learners? Additionally, is the system sufficiently responsive to opportunities presented by technological innovations present and now impending? Are some campuses overloaded while others are under-subscribed. Put directly, does the Commonwealth have an excess of higher education facilities, physical plants, and faculty and staff complements?[25]

25. In 1992 the State Commission considered the roles of community and state colleges in detail as to foci, curricula, and governance. It concluded that the present structure (with primary authority resting at the local level, faithful to grassroots ideology) was best, and therefore left it intact.

Is it time to downsize? If so, how?

Higher education in Massachusetts has had two runs at campus consolidation: the first at Lowell in 1973 and the second in the early 1980s when the then Board of Regents mandated the merger between the University of Massachusetts Boston and Boston State College. Initially, the possibility of an entirely new institution, combining UMass Boston, Boston State, Mass College of Art, and Bunker Hill and Roxbury Community colleges was considered. Personalities at campus, regent, and legislative levels intervened.

As principal participants reconstruct the UMass Boston-Boston State case, the involvement of university and college trustees was minimal. The major negotiations occurred at the campus level, among a conflicted union with bargaining units on both campuses, individual legislators (who were extensively involved), and campus administrators. Although UMass Boston successfully maintained the authority to choose which faculty members would be employed by the newly expanded institution, the key result was that no faculty member at either campus lost her or his job. "Full employment" as one participant recalls, was the order of the day.[26]

26. Letter from Robert A. Corrigan, former chancellor of UMass Boston, to Robert Wood, October 4, 1994. See also the case study of the merger by John E. Moon, "Boston State College: A Memory and a Meaning, 1882-1992."

The University accepted all program units not then present on its campus—nursing, education, and physical education, principally—and reserved the right to accept or reject faculty from traditional arts and sciences faculties. The limited merger proved psychologically damaging to faculty morale; and it realized no savings or real economies.

Its history is instructive in the way not to go.

Nonetheless, given the paucity of hard data on the conditions of facilities, space utilization, depreciation, and maintenance requirements, it is hard to say conclusively whether or not there is a systemic pattern of excess capacity or how the new demography and new technology play out in terms of facilities requirements.

There are reliable ways of deciding whether substantial change is in order as enrollments shift in character, faculties retire, and program priorities change. Fundamentally, they involve the construction of a comparative index that takes into account—and quantifies where possible—the key factors that establish our institutions' effectiveness, efficiency, and equity in conventional cost-benefit analysis terms. These are the well established criteria for priority choices among public programs. In separate versions, they have been and are currently used in such fields as civilian public works (where their use has been pioneered by the U.S. Corps of Engineers), military base closings at the national level, hospital consolidations and mergers at the state level, and school closings at the local level.

Taking a step beyond strategic planning, what is involved in index construction is the selection of the key variables which reliably show the enrollment trends and extent of utilization of a facility, its physical condition, (including its projected capital improvement budget), the attributes of its programs users and providers, ratios of productivity, measures of values added, and environmental and community impacts.

In national defense base closings, eight final selection criteria are now employed: four with respect to military value—mission, contingency requirements, cost requirements, and manpower requirements—return on investment, and three impact measures. In health facilities evaluations, occupancy rates, the delivery of various specialties, patient mix, and redundancy of equipment investment are major considerations.

School closings—sometimes mandated in the Seventies and Eighties by court desegregation orders—typically included as selection criteria enrollments as a percentage of classroom capacity, average class size, age and type of building construction, curricula content, and transfer options within the district, as well as the racial and ethnic proportions achieved. In 1979, in Boston, at the direction of the Federal Court, the School Department assisted by a professional planning team from M.I.T. developed and applied a single comparative index for all the public schools in the system. Subsequently modified by the Court, the school analysis provided guidelines for the next decade for large urban systems across the country faced with sweeping demographic change, enrollment shifts, budget ceilings, and curriculum reform.

A later comprehensive and statewide guide to school closings in Massachusetts was released by the late Gregory Anrig, then commissioner of education, in 1985. It established weighted criteria for school closings with 22 factors, grouped by three categories: student, staff and community, and physical and financial. The Boston Municipal Research Bureau studied both school closings (in St. Louis, Seattle, and Birmingham) and mental health facilities closings. With various degrees of sophistication, the prime factors it identified are excess capacity, annual net savings, reduction of empty seats or beds, and alternative reuses. In short, responsible and objective measures for considering excess capacity and redundancy in the public sector exist, and have been tested and implemented.

Developing the appropriate measures for the 29 campuses in the Massachusetts higher education complex would involve special factors unique to the enterprise: student characteristics (i.e. high school class rank, completion rates, per student costs and state appropriations, family income, perhaps SATs where applicable, yield ratios, and major concentrations) faculty attributes (age, tenure, status, terminal degrees, and disciplines) and overall institutional properties (space utilization, age, location and catch basin characteristics, maintenance requirements, mission priorities, and reuse potential). The key fact is that the utility of these reasonably objective measures has been widely established for such site-specific organizations as campuses, schools, hospitals, and prisons. Clearly they are superior to the hectic, confused, and politicized bargaining that characterized the UMass Boston-Boston State merger and clearly they hold more promise for genuine downsizing. Perhaps most importantly, they make possible objective comparisons among sites, carrying the Bromery plan for regionalism one step further. Accordingly, the recommendation here is for a Campus

Closing Commission, established to develop and apply a uniform set of indices that indicate the rank order of the specific campuses in the three sectors in terms of quality of instruction, appropriateness of mission, and budgetary savings.

Our recommendation is that the Commission be established by the General Court using as a model the Willis-Harrington Commission that was the major force in restructuring and reviewing higher education in the 1960s. That Commission had equal numbers of legislative and lay participants, chaired by a legislator, Senator Kevin Harrington. For this Commission lay nominees might come from the respective boards of trustees, the Secretary of Education, and HECC. Perhaps the Commission would include a representative of AICUM. Additional representatives, as has proven effective at the federal level, might be legislators and other public officials of senior status who are held in high repute. However constituted, the Commission should function in a specific time period—no more than a year—and have professional staff on detached service from the educational components. Following the example of the federal Defense Base Closure and Realignment Commission, its recommendations should not be subject to amendments by the Governor or General Court. The only vote would be "up or down" for the entire list of recommendations. Only by such a provision can the objective determination of priorities in education and genuine downsizing with respect to costs and faculty deployment be obtained.

A parallel review of redundant programs and redundant campuses suggests another road to reform: the revision of existing structural and administrative practices which over the past dozen years have eroded the institutional autonomy so hard won a generation ago. A particularly important handicap is the trifurcation of collective bargaining between the public institutions of higher education, Governor, and Legislature. Only if the two branches approve labor settlements are direct state appropriations made available, yet the University and HECC remain the employers of record. Similarly, fringe benefit rates for non-state-funded employees are set by the State Budget Bureau. The inability to retain tuition revenue, the limitations imposed on the use of capital assets by the Division of Capital Planning and Operations, the unnecessary review of allocations and fund transfers by the Budget Bureau and at the state college level, and the inability to use state funds for graduate programs —all are further obstacles to effective and efficient management of the campuses.

Step Four: Patterns of Collaboration Between the Public and Private Sectors

Periodically over the last 25 years there have been genuine efforts to mesh the higher education programs and resources of the public and private sectors. These peaked in the so- called Spirit of Williamstown conference in the 1970s, but continued in the Alden Conferences led by Paul Ylvisaker of Harvard and Franklin Patterson of the University of Massachusetts, throughout the 1980s. For most of these years, however, except for sharing in state scholarship appropriations, the reality has been competition, sometimes open and often covert.

The sheer size of the private sector (10 two-year institutions and 80 four-year ones), the international reputation of several of its institutions, and the substantial resources available to many of the so-called independent colleges and universities have tended to overshadow

the public institutions. So collaboration has for all practical purposes been limited to the special consortia circumstances of the Five Colleges in the Lower Pioneer Valley and, less spectacularly, to the Worcester consortium. Success in Boston has consisted mostly of bilateral program collaboration and student exchanges. On occasion an open conflict has broken out, as in 1986 when Boston University opposed the authorization of a nursing program at UMass Boston before the then Board of Regents.

Yet genuine opportunity for collaboration exists. One recent encouraging proposal put forward by President John DiBiaggio and Dr. Robert Hollister at Tufts involves a new compact between public and private universities and colleges to underwrite and encourage volunteer services, stimulated by the federal public service program which links youth services with educational stipends. Writing in December, 1994, the Tufts authors estimated that 50,000 students provided more than 5 million hours of service in 1993 and called for a curriculum which integrates service work and classroom experience and fosters real partnerships between the academic institutions and the communities, emphasizing joint planning and responsibility. As a relatively new and attractive area for student initiative the DiBiaggio-Hollister proposal deserves special attention.

The Higher Education Partnership (HEP), one of the oldest collaborative programs in the nation, provides another model for cooperation. The group consists of 26 public and private Boston-area colleges and provides a forum in which presidents from both the public and private sectors can meet regularly. HEP is currently chaired by the chancellor of UMass Boston, Sherry Penney. Recently, the partnership has been one of the signers of the Boston COMPAC. The Boston Campus also participates with two community colleges, Roxbury and Bunker Hill, in another successful collaboration, the Urban Collaborative. The parties in this collaborative have designed joint admissions policies, articulation agreements, and joint faculty development efforts. The three institutions have worked together to facilitate students' transition from the two-year to the four-year college experience.

At the same time, however, the new spirit of collaboration lacks authoritative sanction other than in the form of consortia. The plain fact is that although the former Board of Regents had—and the HECC today has—authority to review and approve programs of the independents, in point of fact they have rarely if ever, exercised that power. An early effort for joint public-private planning foundered in a controversial gathering in Worcester in 1976 when the Private-Public Forum in effect dissolved. No other substantial oversight undertaking has occurred, and the focus remains on missions and special focus in the public sector.

Given the number and diversity of independent colleges and universities this lack of oversight is especially unfortunate. It is difficult to coordinate and direct the public institutions if there is little knowledge about what programs the private ones are offering and what their plans for the public may be. We urge that HECC give high priority to assembling data about, reviewing, and evaluating the private sector programs, especially with respect to the activities of their public counterparts.

In the interim there is one specific proposal on which early action could be taken. The articulation agreements now in place among the public community colleges and state colleges and the University could be extended to include private four-year colleges. Especially in a time in which the enrollment of traditional students is shifting rapidly, four-year private colleges of established quality have the capacity to accept an increasing number of transfers. Such a step would require another exercise in downsizing affecting especially the private junior colleges and the public state colleges. But the new articulation would rationalize both public and private institutions and, through comprehensive HECC planning, identify complementary rather than duplicatory missions.

This review needs to go forward with some speed, for the data it develops will be critical to deliberations of the Campus Closing Commission. It also promises to ensure that HECC provides the genuine coordination the Commonwealth has long sought and which predecessor boards and commissions have evaded.

Finally, much more attention should be given to extending and deepening collaboration patterns in New England. Since 1957, the New England Board of Higher Education has sponsored the *Apple Book* program, in which students from the six states can enroll in the Regional Student Program for majors not offered in their home states at reduced tuition. Over 7,000 students each year save more than $3,000 apiece by taking advantage of selective offerings. For a time in the 1970s the presidents of the New England land grant colleges met to explore ways of expanding the program and planning for a more concerted regional effort. That inquiry needs to be established again on a broader front to accelerate the potential savings and capitalize on special state capabilities.

Step Five: Renewed Commitment to Access and Financial Stability

When one reviews the heady years of public finance in the 1980s and the headaches which came at the end, the skills and determination with which the Massachusetts government dealt with the crisis deserve considerable respect. Given the crash in projected revenues, the collapse in the Commonwealth's bond ratings, and the sudden and very sizeable budgetary shortfalls which appeared circa 1988, the sharp cuts made in state appropriations for higher education—however painful—appear inevitable. However harsh then, the wilderness years arguably did not include special punishment for public colleges and universities (given the decline in the traditional applicant pool—although public higher education's share of the state budget decreased from 6.3% to 3% in those years).

Now, in 1995, with the national and state economy apparently on the way to recovery, but with new public demands burgeoning, what strategy should the Commonwealth adopt to ensure that public higher education both be sustained and changed?

The starting point for such a strategy begins with the June 15, 1994, report of the Massachusetts Task Force on Fair Share Funding for Higher Education, "Stabilizing the Commonwealth's Investment," which outlines a five-year financial plan. Identifying six principles, including access, stability, and accountability, the Task Force recommends an allocation of revenues among three major sources, state appropriations, tuitions and fees, and non-appropriated funds.

These recommendations have this year been the basis for an important legislative initiative. It accepts the twenty-year-old Carnegie proposal[27] that students bear one-third of tuition costs and introduces the concept of formula financing for determining the appropriate share of state support. It also calls for continuation or increases of other revenue, i.e., federal and foundation grants, gifts, and receipts from development and alumni/ae programs. This amounts to a "maintenance of effort" requirement including additional state appropriations and private donations.

For the five-year period, 1994-99 the Task Force estimates that $218 million for higher education would be required to close the "investment gap" between state support and total budget requirements while reducing the student tuition share from forty percent to one-third—the Carnegie fair share.

The Task Force Report and the legislation filed this year based on its analysis and recommendations are a major constructive step forward. The formula proposed is essentially a faculty-student enrollment full-time equivalent ratio for the instructional share of the budget. Support services and physical plant components are calculated separately. Nonetheless the quantification of each component, together with establishing the enrollment base as the point of departure for the model, moves the process toward contemporary program and performance budget practices.

The five-year $218 million estimate may be too conservative to meet the key objectiveness of *fairness* and *stability*. First, accepting the Carnegie formulation with respect to the appropriate student share is very questionable. That calculation was prepared 22 years ago by a commission whose members were drawn overwhelmingly from the private sector of higher education, and whose commitment was to preserve the "great research university" and to cherish "the small private college." The Commission made clear its commitment to elitism when it quoted its member Sir Eric Ashby's remark, "All civilized countries...depend upon a thin clear stream of excellence." Not surprisingly, it recommended that the one-third student share of tuition rule be applied *equally to both* public and private institutions without regard to the different family income levels. It compounded the inequity by understating the share the public- sector students then contributed by 10%—and had to issue a "supplemental statement" (it confessed to an arithmetic error).

The problem with using the Carnegie formulation a generation later is not only that it provides a weak rationale for establishing a base line as Massachusetts works to reduce its present excessive call on tuitions to provide 41% of total cost. It is also seriously out of date in its assumptions about the programs and pattern of financial aid. Over the intervening years, aid has become targeted to the most needy and loans have come to replace grants to middle-income students and their families. The real threat now is to students from middle-income families or, if "emancipated," those older students who work and receive income of their own. These are precisely the students, left out by the Carnegie foundation, who are often forced to borrow or to postpone their education. Thus, to assume a return by 1995 to a one-third tuition charge guarantees that the inequities to the middle class will continue.

27. See Carnegie Commission on Higher Education, Priorities for Action, Final Report, 1973.

Second, so far as the issue of *stability* is concerned, the task force notes that salary increases were more determined by negotiations between the secretary of administration and finance, the Labor Relations Board, and union representatives. Negotiations with respect to faculty practices, workloads, and participation in governance are conducted separately by the educational institutions. This separation of the two components, which is contrary to long-established practice in the private sector, encourages an inefficient trade-off between compensation awards and increased professional performance standards. Salary inequities continue to be a source of dissension. More seriously so far as financial stability is concerned, the bifurcated process leaves the critical extra cost and quality component to be shaped by offices lacking an educational perspective, and focused essentially on across-the-board financial consequences for the Commonwealth's general budget. With a formula plan now in place, authorizing the education sector to carry out both compensation and workplace packages will enhance the capacity to prevent surprise settlements and favor operating budgets while requiring adjustments in other sections. It promises more effective bargaining by upgrading managerial capabilities in negotiation and mediation.

Third, while encouraging outside revenue sources is sensible, the strategy is a very *uncertain* measure. One cannot make analogies to the fund-raising experiences in the private sector of the so-called independent institutions. These development efforts focus on a population of higher-income alumni/ae and corporate and foundation leaders already well-disposed to these appeals. Graduates of public institutions begin from more modest circumstances, and are less likely to have inherited money or positions of influence in corporate and foundation structures. Thus, while efforts to intensify voluntary giving are surely in order, these revenues should be used to *enhance* institutional missions and programs, and not to substitute for state support, even when alumni responsibility is acknowledged. Further, given the present bleak outlook for federal funding for university research and student support programs, a very conservative estimate of future federal contributions is in order. In sum, the $215 million projection for 1994-95 is essential and probably understated. The one-third allocation for student contribution is a *minimum* reduction from the excessive ratio currently prevailing in Massachusetts. Real stability will occur only after the structures for collective bargaining for public higher education have been improved.

Conclusions

We undertook this study to test three propositions:

- that public higher education, properly conceived and directed, is essential to the Commonwealth's well-being
- that support for public higher education depends on the conjunction of interests among key actors—the public at large, as well as leaders in the public and private sectors including academic executives, faculty members, and students.
- that the strength of this coalition, in turn, depends on mutual accommodations, and on acceptance of sharp changes in missions, structures, curricula, and the professional practices of faculties in response to the motivations and concerns of students, present and future, who have strong aspirations for successful careers and lives but find themselves in quite different circumstances from those of their predecessors.

In our exploration, we found a common theme: the need to replace—or modify substantially —the traditional model which has driven the American Academy for a century and a half, the "research university." In its place, we have suggested a model more directly attuned to the nation's and the Commonwealth's contemporary social, economic, and political needs —a model continually striving to define how a competent American is best educated. Borrowing from Ernest Boyer, Ernest Lynton, the president and chancellors of the University, and the presidents of the state and community colleges, we have called the new model "Interactive." The term suggests a continuous interplay between the knowledge generated and preserved on our campuses, the uses to which it can be put, and the needs to be fulfilled in our state and its communities. Problem-solving takes precedence over methodological precision.

To shift models substantially requires major adjustments for all parties. Perhaps the most radical change in behavior is required of faculties. Taught, trained, certified in the tradition of the research university, they now face a very different student body, a different society, and a far more demanding and skeptical polity.

But the other actors must change as well. Leaders in the private sector now need to acknowledge that our array of distinguished private universities and colleges cannot and should not try to go it alone in helping to assure prosperity and community health in Massachusetts. Our public representatives must know that our *state-assisted* public university and colleges do not have sufficient resources to carry out their responsibilities. They deserve to be *state-supported*. The public should be confirmed in their present conviction that public education is beneficial to every one of our 351 cities and towns, to all the regions across the state. Finally, the commitment of all our students, just out of high school, or more lately, just home from work, should be that learning is a life-long endeavor. It must be so if Massachusetts is to keep up with the world in productivity, in technological innovations, and in community civility.

Given these accommodations, compromises, and changes in behavior, it can and will be turnabout time.

Appendix A
Faculty Survey Tables

Table 1 **Description of Sample**

Percent of faculty who ...	UMass Amherst (N = 221)	UMass Boston (N = 106)	UMass Dartmouth (N = 115)	UMass Lowell (N = 101)	State Colleges (N = 255)	Community Colleges (N = 253)
Have been at their institution 16+ years	49	38	48	55	52	45
Have a faculty rank of professor	50	31	63	50	43	70
Are younger than 40 years old	18	7	13	9	8	9
Are female	30	39	30	22	46	55
Are minority	8	14	12	11	7	9

Table 2 **Rating of Institutions as Places to Achieve Professional Goals (Percent Rated Good or Excellent)**

	UMass Amherst (N = 221)	UMass Boston (N = 106)	UMass Dartmouth (N = 115)	UMass Lowell (N = 101)	State Colleges (N = 255)	Community Colleges (N = 253)
Teaching undergraduate students	61	76	88	67	88	92
Teaching graduate students	68	56	49	56	42	—
Scholarly publication/research	64	27	24	33	22	28
Providing technical or professional assistance to business, government, or community groups	45	41	42	43	44	63

Table 3A **Institutional Priorities: Weight Given in Promotion Decisions (Percent Rated High)**

	UMass Amherst (N = 221)	UMass Boston (N = 106)	UMass Dartmouth (N = 115)	UMass Lowell (N = 101)	State Colleges (N = 255)	Community Colleges (N = 253)
Teaching excellence	46	63	93	28	71	58
Scholarly publication/research	90	83	55	77	19	1
Providing technical or professional assistance to business, government, or community groups	5	10	17	5	6	12
Getting external funding	52	32	37	58	8	14

Table 3B Institutional Priorities (Percent Rated High or Highest Priority)

	UMass Amherst (N = 221)	UMass Boston (N = 106)	UMass Dartmouth (N = 115)	UMass Lowell (N = 101)	State Colleges (N = 255)	Community Colleges (N = 253)
Promoting excellence in under graduate teaching	37	49	75	32	61	65
Training graduate students	55	39	36	52	18	—
Conducting basic and applied research	70	39	32	66	9	4
Having faculty who publish and produce scholarly and creative products	79	48	41	71	26	5

Table 3C Rating of Institution for Achieving the Following Goals (Percent Rating Good or Excellent)

	UMass Amherst (N = 221)	UMass Boston (N = 106)	UMass Dartmouth (N = 115)	UMass Lowell (N = 101)	State Colleges (N = 255)	Community Colleges (N = 253)
Promoting excellence in undergraduate teaching	40	50	76	44	61	62
Training graduate students	63	48	47	62	30	—
Conducting basic and applied research	74	38	39	64	18	10
Having faculty who publish and produce scholarly and creative products	77	49	50	54	31	22

Table 4 Graduate Teaching

	UMass Amherst (N = 221)	UMass Boston (N = 106)	UMass Dartmouth (N = 115)	UMass Lowell (N = 101)	State Colleges (N = 255)	Community Colleges (N = 253)
Percent of faculty who taught graduate students last year	68	44	42	53	24	—

Table 5 Budget Priorities: Personal Assessment of Priorities for Additional Funding (Percent Rated as Highest Priority)

	UMass Amherst (N = 221)	UMass Boston (N = 106)	UMass Dartmouth (N = 115)	UMass Lowell (N = 101)	State Colleges (N = 255)	Community Colleges (N = 253)	Total (N=1051)
Higher faculty salaries	38	38	54	20	49	55	45
Upgrading equipment and facilities needed for teaching	46	33	46	42	49	41	44
More full-time faculty	34	32	46	28	41	60	43
Repair and maintenance of existing physical facilities	59	46	35	62	34	23	41
More support for professional development for faculty	19	36	50	28	44	36	35
More books and journals for the library	51	42	29	44	34	13	34
Helping to reduce costs to students	37	43	27	39	31	32	34

Table 6

Faculty-Administration Relationships (Percent Rating of Good or Excellent)

	UMass Amherst (N = 221)	UMass Boston (N = 106)	UMass Dartmouth (N = 115)	UMass Lowell (N = 101)	State Colleges (N = 255)	Community Colleges (N = 253)
Overall faculty relationships with the administration	21	23	49	30	50	45
Own personal relationships with the administration	57	62	65	55	73	72

Table 7

Campus Atmosphere: Rating of Institution for Achieving the Following Goals (Percent Rating Good or Excellent)

	UMass Amherst (N = 221)	UMass Boston (N = 106)	UMass Dartmouth (N = 115)	UMass Lowell (N = 101)	State Colleges (N = 255)	Community Colleges (N = 253)
Recruiting and maintaining a culturally diverse faculty	52	66	55	37	49	50
Recruiting and maintaining a culturally diverse student body	44	84	45	35	53	74
Maintaining a campus climate where differences of opinion can be aired openly	53	60	67	34	55	60

Table 8

Overall Feeling about Work Situation

Percent of faculty who feel...	UMass Amherst (N = 221)	UMass Boston (N = 106)	UMass Dartmouth (N = 115)	UMass Lowell (N = 101)	State Colleges (N = 255)	Community Colleges (N = 253)
Delighted/pleased	21	17	23	19	29	33
Mostly satisfied	29	24	31	29	33	36
Mixed (about equally satisfied and dissatisfied)	31	41	33	32	29	25
Mostly dissatisfied/unhappy/terrible	20	18	13	20	9	7
Total	100	100	100	100	100	100

Table 9

Rating of Institution for Achieving the Following Goals for Undergraduate Education (Percent Rated as Good or Excellent)

	UMass Amherst (N = 221)	UMass Boston (N = 106)	UMass Dartmouth (N = 115)	UMass Lowell (N = 101)	State Colleges (N = 255)	Community Colleges (N = 253)
Providing assistance to students with weak academic backgrounds	33	62	62	50	60	81
Preparing students for graduate or professional education	58	55	62	62	54	54
Promoting the intellectual development of students	43	59	49	43	56	59
Helping students examine and understand their personal values	24	41	35	17	42	45
Enhancing the experience of students outside of the classrooms	26	14	29	24	35	36
Preparing students for jobs after college	45	42	58	66	67	81
Promoting faculty-student contacts out of class	10	12	26	11	24	27
Producing well-educated graduates	45	53	56	63	58	67

Table 10

Rating of Relative Emphasis on Campus

Percent rating emphasis...	UMass Amherst (N = 221)	UMass Boston (N = 106)	UMass Dartmouth (N = 115)	UMass Lowell (N = 101)	State Colleges (N = 255)	Community Colleges (N = 253)
More toward professional, business, and career training	55	30	47	85	41	54
Both about equal	31	37	42	12	36	31
More toward liberal arts	14	33	11	3	23	15
Total	100	100	100	100	100	100
Percent rating emphasis...						
More toward the arts and humanities	5	29	13	7	33	17
Both about equal	40	36	54	18	52	59
More toward the sciences	55	35	33	75	15	24
Total	100	100	100	100	100	100

Appendix B
Doctoral Degree Tables

Table 1

Terminal Doctoral Degrees Earned at Highly Selective Institutions

		Private	Public	Other	Total
Colleges	Bridgewater	12 (7%)	5 (2%)	150	167
	Fitchburg	13 (9%)	8 (5%)	119	140
	Framingham	24 (17%)	9 (6%)	106	139
	MA Col Art	23 (19%)	3 (2%)	91	117
	MA Maritime	0 (0%)	0 (0%)	23	23
	No Adams	7 (11%)	4 (6%)	50	61
	Salem	13 (6%)	13 (6%)	169	195
	Westfield	7 (5%)	6 (4%)	121	134
	Worcester	11 (10%)	9 (8%)	84	104
Universities	UMass Amherst	265 (23%)	158 (14%)	686	1109
	UMass Boston	144 (30%)	40 (8%)	285	473
	UMass Dartmouth	50 (19%)	27 (10%)	179	2561
	UMass Lowell	82 (21%)	28 (7%)	288	398

(Data compiled from core faculty listings in schools' catalogs, except UMass Boston data compiled from OIR General Report.)

Table 2

Terminal/Doctoral Degrees: Percent Earned at Highly Selective Universities. (Percentages have been rounded. Some faculty have more than one terminal degree.)

Colleges	Bridgewater	10	17 out of 167
	Fitchburg	15	21 out of 140
	Framingham	23	33 out of 139
	MA Col Art	22	26 out of 117
	MA Maritime	0	0 out of 23
	No Adams	18	11 out of 61
	Salem State	13	26 out of 195
	Westfield	9	13 out of 134
	Worcester	19	20 out of 104
Universities	UMass Amherst	38	423 out of 1109
	UMass Boston	38	118 out of 473
	UMass Dartmouth	30	77 out of 256
	UMass Lowell	28	110 out of 398

(Data compiled from core faculty listings in schools' catalogs, except UMass Boston data compiled from OIR generated report.)

Table 3

Doctoral Degrees Earned at Highly Selective Universities in Select Departments at UMass Amherst

Department	Selective/Total	Percentage
Economics	20 out of 28	71
Anthropology	10 out of 15	66
Chem Engineering	2 out of 12	16
Civil Engineering	6 out of 23	26
Physics	28 out of 56	50
Sociology	14 out of 27	51
Management	5 out of 14	35
Marketing	0 out of 8	0

(Data compiled from core faculty listings in school catalogs.)

Appendix C
Tuition and Mandatory Fees by Campus

Campus	1988/89	1992/93*	1993/94*	PERCENT CHANGE 1-year	PERCENT CHANGE 5-year
UMass Amherst▲	$2,322	$4,797	$5,126	6.9	120.7
UMass Boston	1,845	4,093	4,303	5.1	133.2
UMass Lowell●▲	2,364	4,463	4,552	2.0	92.6
UMass Dartmouth▲	1,500	3,193	3,611	13.1	140.7
Bridgewater St. C.	1,565	3,405	3,433	0.8	119.3
Fitchburg St. C.	1,432	3,219	3,247	0.9	126.7
Framingham St. C.	1,450	3,017	3,080	2.1	112.4
Mass. College of Art	1,563	3,718	3,867	4.0	147.4
Mass. Maritime Academy	1,313	2,907	3,043	4.7	131.8
North Adams St. C.	1,681	3,361	3,509	4.4	108.8
Salem St. C.	1,462	3,086	3,216	4.2	119.9
Westfield St. C.▲	1,548	2,956	2,999	1.5	93.7
Worcester St. C.	1,289	2,540	2,604	2.5	102.0
Berkshire C.C.	1,038	1,807	1,931	6.9	86.0
Bristol C.C.	958	1,941	2,079	7.1	117.0
Bunker Hill C.C.	912	1,894	2,025	6.9	122.0
Cape Cod C.C.	1,102	1,865	2,055	10.2	86.5
Greenfield C.C.	1,098	1,956	2,136	9.2	94.5
Holyoke C.C.▲	1,193	2,013	2,151	6.9	80.3
Massachusetts Bay C.C.	1,098	1,509	1,539	2.0	40.1
Massasoit C.C.●	1,062	1,887	2,241	18.8	111.0
Middlesex C.C.▲	978	2,155	2,293	6.4	134.5
Mount Wachusett C.C.■	1,167	2,565	2,541	0.9	117.7
North Shore C.C.▲	995	1,914	2,025	5.8	103.5
Northern Essex C.C.	1,156	1,873	1,970	5.2	70.4
Quinsigamond C.C.	1,030	2,008	2,146	6.9	108.4
Roxbury C.C.●	969	1,400	1,920	37.1	98.2
Springfield Technical C.C.●▲	1,026	1,866	2,314	24.0	125.5
UMass—All Campuses	$2,129	$4,376	$4,646	6.2	118.2
All State Colleges	1,484	3,116	3,191	2.4	115.0
All Community Colleges	1,049	1,918	2,093	9.1	99.4
All Institutions	1,601	3,212	3,398	5.8	112.2

Sector and all institutions totals are weighted by enrollment at each campus.

* Beginning in 1993/94, all tuition and fees for community colleges are reported on the basis of 27 credits per year. In 1993/94, HECC set tuition rates for community colleges on a per-credit basis with no maximum amount, resulting in lower tuition rates for students enrolled less than full time. In 1993/94, most community colleges raised per-credit fees by the same amount as tuition was reduced. Thus, for students enrolled less than full time, the combination of tuition and fees remained approximately the same; students enrolled for more than 24 credits paid a higher total amount.

■ Mount Wachusett lowered their fees for fall 1993 and raised them to their previous levels for spring 1994, resulting in a small overall decrease for the year.

● Data reflect course-specific fees incorporated into general mandatory fees: UMass/Lowell—1991/92; Massasoit, Roxbury, Springfield—1993/94.

▲ Excluding fees that are used exclusively for debt service on campus facilities.

Source: Massachusetts Task Force on Fair Share Funding for Higher Education, Stabilizing the Commonwealth's Investment, 1994.

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Bartley, David, President, Holyoke Community College

Boyd, Laslo, Vice President for External Affairs, University of Massachusetts

Cressy, Peter, Chancellor, University of Massachusetts Dartmouth

Elman, Sandra E., Staff Director to the Saxon Commission; Associate Director of the Commission on Institutions of Higher Education, New England Association of Schools and Colleges, Inc.

Fowler, Jr., Floyd Jackson, former director, Center for Survey Research, University of Massachusetts Boston

Gordon, Glenn, Provost, University of Massachusetts Amherst

Hogan, William, Chancellor, University of Massachusetts Lowell

Hooker, Michael, President, University of Massachusetts

Jobs for Massachusetts, Inc.

Knapp, David, former president of the University of Massachusetts

Koplick, Stanley Z., Chancellor, Massachusetts Higher Education Coordinating Council

Liem, Joan, Professor, Psychology Department, University of Massachusetts Boston

Maurer, Kenneth M., Assistant Director, Office of Research, Information Systems and Assessment, Massachusetts Higher Education Coordinating Council

Noetzel, Michael, Executive Assistant to the Chancellor, Massachusetts Higher Education Coordinating Council

Panofsky, Richard, Associate Vice Chancellor for Academic Affairs, University of Massachusetts Dartmouth

Paul, Diane, Professor, Political Science Department, University of Massachusetts Boston

Penney, Sherry, Chancellor, University of Massachusetts Boston

President's Public Council

Robertson, Piedad, Secretary of Education, Commonwealth of Massachusetts

Rosenberg, Stanley, State Senator, Commonwealth of Massachusetts

Russell, John, Chair of Academic Planning Task Force, University of Massachusetts Dartmouth

Scott, David, Chancellor, University of Massachusetts Amherst

Sperounis, Frederick, Vice Chancellor for University Relations and Development, University of Massachusetts Lowell

Story, Ellen, State Representative, Commonwealth of Massachusetts

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Tinsley, Adrian, President, Bridgewater State College

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Richard A. Hogarty, Director and MSPA Program Director
Kathleen J. Foley, Assistant Director

Senior Fellows

Joseph R. Barresi
Edmund Beard
Barry Bluestone
Albert P. Cardarelli
Louis C. DiNatale II
Murray W. Frank
Phyllis Freeman
Mary K. Grant
Hubert E. Jones
Richard A. Manley
Ian S. Menzies
Padraig O'Malley
Vivien Schmidt
Elizabeth A. Sherman
Raymond G. Torto
Elaine Werby

Visiting Fellows

Peter Ajemian
Randy Albelda
Lisa Chapnick
Richard Delaney
Daniel Egan
Sandra Elman
Daniel H. Fenn, Jr.
William Kilmartin
Judith Meredith
Robert Moran
Carl Senna
Betty Taymor
Robert C. Wood

John W. McCormack Institute of Public Affairs
University of Massachusetts Boston
100 Morrissey Boulevard
Boston, MA 02125-3393
Tel: 617-287-5550
Fax: 617-287-5544

John W. McCormack Institute of Public Affairs
University of Massachusetts Boston
100 Morrissey Boulevard
Boston, MA 02125-3393
Tel: 617-287-5550
Fax: 617-287-5544

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