Here at Penn State, we have just broken ground for the Paterno Library in honor of Joseph V. and Suzanne P. Paterno. Joe Paterno is Professor and Head Football Coach and Sue is a noted volunteer for a variety of good causes. Because the Paternos are such active supporters of the Libraries, I have many opportunities to learn from their ideas about higher education. Recently, Coach Paterno was recounting his days as a student at Brown University and remembering a particular professor who believed in a divine discontent with the status quo. Paterno concluded that "A great university is in the forefront of change." The challenges for higher education come from the impact of technology, the idea of the university as an instrument of social change, and the economics of education.

TECHNOLOGY

Forbes magazine recently interviewed Peter Drucker for an article entitled "Seeing Things as They Really Are." Drucker comments that higher education is doomed—big university campuses will be relics because computer technology is as big a change to the educational organization as the printed book was. Costs of education have risen as steeply as those of medicine and are as essential to a middle class family. Drucker predicts that our residential institutions will be replaced by alternative methodologies—distance education initiatives. University of Michigan's recent President, James Duderstadt, also predicts that 80% of education will be delivered with alternative methods in the near future.

These predictions derive from significant changes in the nature of work in an Information Age. Computer technology changes so rapidly that small companies see 16 months as a long-range planning horizon. The 20-year long-range plans that were created and executed in the Industrial Age no longer serve. Flexibility, agility, and adaptability are key characteristics for success in this environment. Workers who must update their skills quickly and repeatedly will use new technologies to accomplish these updates. The quantity of education will shift from a four-year idyll between high school and employment to a continuing enterprise, often occurring through technology in the workplace. Many types of education enterprises from the relics doomed by Drucker to for-profit companies will compete to provide appropriate programs. Large, traditional universities have many barriers to success in this environment. Issues of time and place, such as the academic calendar and residency, must be resolved.

Some of the for-profit universities that arise to meet these workplace needs will have no libraries. They will rely on commercial vendors such as Infoquest to meet student information needs. Yet, information finding and evaluation are critical skills for succeeding in the Information Age. Academic libraries can offer their university's distance education students a superior learning experience. The digital libraries that we believe are the future for libraries will serve this new vision of education and will have to design new methods for teaching students to find and evaluate information. This role is one that I discussed in the March 1997 issue of JAL. Further, in the mixed print and digital environment of the next decade, partnering with teaching faculty to design appropriate digital collection support will be a key activity.

SOCIAL CHANGE

Both institutions of higher education and libraries (academic, public, and school) conceive of themselves as instruments of social change. Penn State President Graham Spanier spoke in his inaugural State-of-the-University Address about the university experience meaning far more than "turning students into alumni or ideas into publications." Instead, he states that "education is society's mechanism for turning despair into hope, for raising the social consciousness of the community, for altering the course of families, for turning poverty into wealth, and for improving the quality of life." The American Library Association has produced many popular slogans, such as "Libraries change lives" and "Read, Succeed," that reflect this idea. Librarians of all kinds have dedicated their lives to the proposition that more and better information can produce a better quality of life.
In a sense, technology has outdone our aspirations for providing more information. Internet searches easily produce thousands of responses to loosely-constructed searches. Students tell us that they look at the first 20 and then move on. Librarians complain that imprecise searching is driving out more precise work and that students prefer digital mediocrity and even inaccurate information to quality print information that is discipline certified and librarian selected. Does "Read, Succeed" apply to commercials on the Internet? How can we preserve our most cherished librarian values and propagate them through the digital library?

**ECONOMICS**

The economic issues facing higher education and libraries are significant ones. The higher education index has almost rivaled the medical index in the severity of the increases.

<table>
<thead>
<tr>
<th>Index</th>
<th>1980</th>
<th>1995</th>
<th>% Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consumer Price Index General</td>
<td>82.4</td>
<td>152.4</td>
<td>85</td>
</tr>
<tr>
<td>Consumer Price Index Medical</td>
<td>74.9</td>
<td>220.5</td>
<td>194</td>
</tr>
<tr>
<td>Higher Education Price Index</td>
<td>77.5</td>
<td>167.9</td>
<td>117</td>
</tr>
<tr>
<td>Academic Library Price Index</td>
<td>78.5</td>
<td>184.4</td>
<td>135</td>
</tr>
</tbody>
</table>

An article in this issue attributes much of the rise in the higher education index to increases in faculty salaries, but the nature of rising university costs is complex. Tuitions in public institutions have risen because of shrinking aid programs and decreasing state aid. Library costs, which have risen significantly because of the introduction of technology and because of uncontrolled costs for scholarly communications, are a factor in rising higher education costs.

In a recent article "The Unsustainability of Traditional Libraries," Brian Hawkins predicts that knowledge, which has been thought to be doubling every 10 years, is now doubling every two to three years. No librarian believes that our budgets will be doubling appropriately. Hawkins notes that the proportion of knowledge published in book or serial format that will be collected by academic libraries will shrink from about 6% to 1/10th of a single percent. Selectivity and drawing student and faculty attention to quality resources in their disciplines will become even more important librarian responsibilities.

Coach Paterno challenged Penn State philanthropists to be "the G.I. Bill of the next generation." Public Law 346, the Servicemen's Readjustment Act of 1944, expended $5.5 billion to turn out 450,000 engineers, 240,000 accountants, 238,000 teachers, 91,000 scientists, 67,000 doctors, 22,000 dentists, 17,000 writers and editors, and thousands of other professionals. With their enhanced incomes, these individuals paid back the $5.5 billion investment several times over and had a profound effect on the economy. Not since the land grant college act of 100 years before had the college shaped events outside its own walls. Paterno called upon the philanthropic community to create one more revolution on campus to provide a new cadre of individuals with an enhanced ability to express discontent by improving society.

This dramatic expansion of universities also occasioned expansion of the libraries. Just as the institutional growth of the 1940s and 1950s is unlikely to be replicated, so too is concomitant growth in libraries equally unlikely. Information will be expanding exponentially and less and less of it will be collected in the print environment. If we assume that librarians will direct attention to electronic resources in many global venues, then we need to study how this sophisticated new task can be accomplished. The digital library will be expensive and will be built with non-traditional sources of funding, such as private philanthropy, vendor relationships, and value-added fees.

Coach Paterno often leaves events remarking about winning a few games as an essential contribution to changes in higher education. Librarians need to win some games, too. We need to use our discontent to meet the challenges of new techniques for providing information to support ongoing instruction, to incorporate our values about libraries changing lives into the digital environment, and to raise the funds necessary to create the digital libraries. According to the Coach, "Without a great library, you can't have a great university." To serve higher education well, librarians and libraries must change. —Gst.C.

**NOTES AND REFERENCES**