

# Data on Higher Education in the United States

## Are the Existing Resources Adequate?

STEVEN BRINT

*University of California, Riverside*

*Higher education is a mixed sector. It includes many public institutions as well as many independent colleges and universities. It also includes some for-profit enterprises. Data resources for the study of higher education are generally very good. This is particularly true for studies of students, faculty, institutional quality, and financial resources. This article provides a catalog of existing data resources, including comments about limitations in the quality of some data sources. The article also discusses data resources needs for the future. These needs will focus on key changes in higher education: the rise of for-profit enterprises and private resources, new markets for postsecondary education, new instructional technologies, and changing social partnership activities. The article concludes by describing a number of studies that could be conducted using data on higher education to address issues high on the agenda of students of the nonprofit sector.*

**Higher education institutions play** an exceptionally important role among institutions usually considered largely or wholly part of the nonprofit sector. "Knowledge workers" and "knowledge-based industries" have become important elements in the economic life of the nation; empirical studies confirm the greater dynamism of industries employing large numbers of highly educated workers (Brint, 2001; Sassen, 1994). Higher education has become a decisive mechanism for allocating labor within the white-collar ranks of the stratification structure. It is critical in social reproduction, and it is virtually unchallenged as a means of upward mobility; higher level degrees have replaced shop-floor promotion and up-from-the-bootstraps entrepreneurship in virtually every field. Places in selective colleges and universities are highly coveted and bring substantial rewards for those who are fortunate enough to gain admissions (Bowen

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**Author's Note:** *I would like to thank Dennis Carroll, Roger L. Geiger, Fran Heuls, Jacqueline King, Ellen Condliffe Lagemann, Larry L. Leslie, Richard Sutch, Diane Vinokur-Kaplan, Janet H. Weiss, and Gordon C. Winston for comments and suggestions that helped to improve the quality of this article.*

& Bok, 1998). Universities are also expected to generate research and policy ideas that help to solve many of the problems in the larger society. Famously labeled the "service stations of society" by Clark Kerr (1964), universities reach out to influence almost every other important institution in society. Moreover, many of the important cultural conflicts and status tensions in society—from conflicts over multiculturalism and gay rights to the ethics of cloning and the human implications of new computer technologies—are expressed first and debated most intensively on college and university campuses.

This is a volume concerned with institutions of the nonprofit sector. Yet, there are clearly certain difficulties in treating higher education as part of the nonprofit sector. It is true that independent, nonprofit colleges and universities are far more numerous than public colleges and universities among 4-year institutions (71% of the total). Yet, these nonprofits enroll only about one third of students. When 2-year colleges are included, public domination becomes still more apparent. Nearly half of all higher education institutions (2- and 4-year) are public and more than 70% of student enrollment is public.

Some conceptual ambiguities in treating higher education as part of the nonprofit sector must also be addressed. Most notably, independent colleges and universities are not entirely supported by private sources of funding; federal and state financial aid are important sources of funds for low-income students, and leading private universities are also major beneficiaries of public research grants. Nor are public institutions supported entirely (or even primarily) by public monies. Indeed, the share of the budget from state general funds declined sharply in the 1980s. In a number of states, the public share of the budget declined from approximately 40% in the 1960s and early 1970s to 25% or less by the early 1990s (Geiger, 1993). Charges for tuition and fees constitute a large part of the revenue stream for all public institutions, as are revenues from private gifts and proceeds from auxiliary enterprises and sales of educational services.<sup>1</sup>

The orientation of college and university administrators and faculty is equally complicated. Although development interests and curricula are both clearly influenced by state priorities and market pressures (Slaughter, 1997), professors have considerable formal autonomy in the conduct of their teaching, research, and service activities. Most professors (at least those who are publishing) are oriented to developments in academic publishing and their academic disciplinary associations. Academic publishers are, for the most part, nonprofit, and professional associations are entirely nonprofit.

Thus, higher education must be considered a mixed institutional sphere rather than part of the nonprofit sector. It combines public, nonprofit, and for-profit organizations (although only a small number of the latter); multiple and mixed sources of revenues; and significant (but also significantly limited) autonomy from the state and the private economy. This combination of influences is, indeed, one of its great strengths.

The primary purpose of this article is to assess the data resources currently available for the study of higher education institutions and to provide an outline

of the new data resources that will be necessary to investigate recent developments and emerging topics related to these institutions.

For most questions of interest, higher education researchers suffer no shortage of data resources. In particular, data resources for studies of educational and socioeconomic attainment are excellent. Data resources for studies of faculty careers are good. Data resources for studies of faculty and student attitudes are also good. Institutional data are adequate to address most research questions. Data on student experiences on campus, course-taking patterns, and degrees awarded are good. Data on expenditures for research and financial aid are good for governmental sources of funds. Any future data-collection efforts should be mindful of the already severe reporting demands on colleges and universities.<sup>2</sup>

In the first section of the article, I will provide a catalog of the data resources currently available for researchers studying American higher education. I include in this catalog only data (and/or constructed variables) that have been measured for all institutions, or a representative sample of institutions, or, at a minimum, for an important segment of higher education. I will discuss issues of data quality selectively, where these issues are particularly pertinent. I will not include discussion of case study data because I consider this data less likely to be used in secondary analyses by researchers and policy makers. In this section, I will also discuss causes for trends in data collection, focusing on the interests of the major data-collecting agencies and organizations. In the second section of this article, I will discuss types of new data that will be necessary to answer key research questions for the future. Although data resources for the study of higher education are abundant, existing resources do not address some questions that will be important for higher education researchers in the future.

## EXISTING DATA RESOURCES

In the following catalog of existing data resources, I will group data sets in one of five major categories related to the primary focus of the data. The categories are as follows: (a) institutional characteristics and institutional activities, (b) students and recent graduates, (c) faculty, (d) administrators and (e) data archives. I will not include data sets so compromised with respect to reliability or validity that I consider their use inappropriate, even for historical purposes.<sup>3</sup>

### INSTITUTIONAL CHARACTERISTICS AND INSTITUTIONAL ACTIVITIES

This category includes a large number of data sets, and I will therefore further divide it into subsections. These subsections are as follows: (a) institutional characteristics (general), (b) college guides, (c) segmentation measures, (d) quality and reputation measures, (e) scholarly and teaching resources, (f) finances, and (g) relations with industry. In each category, data resources are listed alphabetically.



## Institutional Characteristics

*Carnegie Classifications.* The Carnegie Foundation for the Advancement of Teaching publishes a now-standard classification of colleges and universities in 10 categories developed in 1973 by Clark Kerr, with relatively small changes through 1994. The Carnegie Classifications have been recently revised in a way that will make comparisons with earlier classifications impossible. New divisions of research universities focus on “intensive” versus “extensive” coverage rather than, as before, on the production of Ph.D.s and levels of external research funding.

*Colleges and Universities 2000 (C & U 2000).* Surveys were conducted in 2000 and 2001 of administrators at approximately 375 colleges and universities by Steven Brint of the University of California, Riverside. Institutions were chosen to represent four major tiers in American higher education (not including community colleges, proprietary institutions, or specialized institutions). Separate surveys were sent to presidents and provosts. Surveys include questions concerning reference institutions, curricular development philosophies, decision-making structures, and expectations about the future. Factual data on organizational and curricular change is being coded for the same institutions from college catalogs over a 25-year period. This includes data on the development of colleges (i.e., administrative units with their own deans), departments in the arts and sciences and professional schools, interdisciplinary programs, and general education requirements.

*The Common Data Set.* This is a project of the publishers of the major college guides (see below) and the institutional research offices of American colleges and universities to provide standard information to prospective students. The common data set includes general information on the institution, information on enrollment and persistence, admissions requirements for freshmen, transfer admission, academic offerings and policies, annual expenses, and financial aid. Many participating institutions provide data from the common data set on their home pages. One limitation is that the data set began in 1998 and is consequently not helpful for historical analysis.

*Higher Education Directory.* These data include information on institutional control, date of establishment, enrollment, program emphasis, accreditation, Carnegie class, tuition and fees, and student body type (women, men, or coed). The data, which are published annually by higher education publications, include information on all 2-year and 4-year institutions. The data are available in electronic form for a substantial licensing fee, including higher fees for data files that include the names and offices of top administrators.

*Higher Education General Information System (HEGIS)/Integrated Postsecondary Education Data System (IPEDS).* By any measure, these are the most comprehensive data on institutional characteristics and institutional activities collected by the National Center for Education Statistics and available for online use in the Computer-Aided Science Policy Analysis and Research (CASPAR) database system managed by Quantum Research Corporation. With respect to institutional characteristics and institutional activities, HEGIS/IPEDS includes four files: institutional characteristics (from academic year [AY] 1966), earned degrees (from AY 1966), financial statistics (from fiscal year [FY] 1966), and tuition (from fall 1969). Institutional characteristics include a variety of standard measures of institutional type and location. Earned degrees include numbers of degrees by degree level, gender, and all academic disciplines. Data by race and ethnicity are available for selected years. This file includes information on new and continuing programs at all institutions, which makes it a valuable resource for studies of program development and curricular change. However, careful institution-based studies indicate that these data, though good for the majority of institutions, are not completely valid. Financial statistics include data for some 151 variables concerning revenue, expenditure, scholarship, utilities, hospitals, physical plant, indebtedness, and endowment. Data are also collected on year-to-year changes in fund balances. Tuition includes annual tuition charges and fees for graduate/undergraduate students and in-state/out-of-state students. Data are also available for room, board, and book costs.

*U.S. Census Bureau.* The Census Bureau provides relevant background data for studies of higher education, including average income, education, ethnic composition, and housing stock of communities surrounding colleges and universities, state population, state population ages 18 to 24, percentage of state population with college degrees, and other data. With the help of geographical information systems software, data on surrounding neighborhoods and their change over time can be extracted.

## College Guides

*Barron's.* A popular guide for prospective college students, *Barron's* has published data on institutional characteristics of American colleges and universities since 1964, including size and composition of student body, SAT scores, curricula offered, and some information of extracurricular activities. Includes a widely used selectivity measure. The guide is published irregularly. In 1984, *Profiles of American Colleges* series split into two publications: *Descriptions of the Colleges* and *Index of Majors*.

*Cass & Birnbaum.* Another popular guide for prospective college students, *Cass & Birnbaum* has published a range of institutional data on American colleges



and universities since 1964. Early editions include comparatively good data on extracurricular activities, such as percentage of members of fraternities and sororities. The 18th edition was published in 1997.

*College Blue Book.* The most comprehensive guide for prospective college students, *The College Blue Book* has published a range of institutional data on American colleges and universities since 1932. Current editions are published in five volumes, which include separate volumes on campus narrative descriptions, tabular data, degrees by college and subject, occupational and professional training, and scholarships, fellowships, grants, and loans. For those interested in historical data, this source is more likely to be available in libraries than *Barron's*, *Cass & Birnbaum*, or *Peterson's* guides. Research librarians have tended to consider this guide, published by Macmillan, most worthy of maintaining as a series.

*College Board.* The College Board collects information through a particularly comprehensive *Annual Survey of Colleges*. This survey forms the basis for its popular college guide. The *Annual Survey* collects information on institutional characteristics, institutional accreditation, learning resources, student demographics, majors offered, 6-year graduation rates, percentage of part-time students, special programs and activities for students, student services and housing, admissions criteria, annual expenses, and financial aid. Data from the College Board's *Annual Survey* is available to researchers going back to the 1960s, though at a steep licensing fee.

*Peterson's.* Another popular guide for prospective college students, *Peterson's* has published a range of institutional data on American colleges and universities since 1970. It was published as *Peterson's Annual Guide to Undergraduate Study* in 1970 to 1982. Since 1983, it has been published as *Peterson's Guide to Four-Year Colleges*. *Peterson's* also publishes data on honors programs as *Peterson's Guide to Honors Programs*.

### Segmentation Measures

*Association of American Universities.* Membership among this group of research universities is often considered a sign of elite research university status. Many universities lobby very hard to gain membership. However, for historical reasons, members include a handful of universities most scholars would not consider to be among the top-ranked institutions.

*Astin Selectivity Index.* This is a selectivity index developed by Alexander Astin based on mean scores for composite SAT or ACT. See Astin and Henson (1977). Selectivity scores were developed for 1973, 1977, 1987, and 2000. The

2000 scores reflect SAT recentering. Efforts were made to resolve discrepancies in published averages in 2000 only. Data for each of the 4 years by institution are available from the Higher Education Research Institute (HERI) at the University of California, Los Angeles (UCLA). Selectivity cutoffs are reported in HERI's annual reports, *The American College Freshman*.

*Consortium for Financing Higher Education (COFHE).* This organization is a consortium of private, highly selective colleges and universities. Membership is one indicator of elite status among private colleges and universities. COFHE also collects fine-grained data on finance and admissions in member institutions, but it does not at this time provide data for analysis by independent researchers.

*Morgan.* University of Chicago dissertation by Harriet P. Morgan includes a cluster analysis of colleges and universities with similar programmatic profiles. This analysis and the institutional clusters that emerge from it are based on HEGIS/IPEDS earned degree data. See Morgan (1998).

*Zemsky.* Robert Zemsky and his associates have categorized colleges and universities into five market segments. The segments form a continuum running from "medallion" to "user-friendly" institutions. The market segments are now based on 6-year graduation rates and percentage of part-time students.

### Faculty Quality/Reputation Measures

*Blau-Margulies.* This is a reputational study of rankings of leading professional schools in 17 separate professional fields as of the early 1970s conducted by Peter Blau and Rebecca Margulies. Rankings are based on assessments of deans of all professional schools in each of the areas. Response rates vary by profession from 53% to 76%. See Blau and Margulies (1974-1975).

*Cartter.* Allan Cartter of the American Council on Education rated American graduate and professional programs in 1964. Cartter asked a sample of faculty members in graduate programs to rate the quality of graduate faculty on a 6-point scale; these ratings were then averaged over all respondents to determine a rating for each program. See Cartter (1966).

*Graham-Diamond.* This is a study conducted by Hugh D. Graham and Judy Diamond in which research universities are ranked for quality of faculty (based on publication measures) in and across major disciplinary fields. Unlike most others, this study controls for the size of departmental faculty. Summary of rankings is published in Graham and Diamond (1997), together with justification for the methodology used.



*Hughes.* R. M. Hughes published the first American rankings of graduate programs based on a study conducted in 1923. The top departments in 15 fields were ranked in order of excellence. From these departmental rankings, a general rating was developed for each of the major divisions in the arts and sciences by adding together the ranks of the departments in the respective divisions. See Hughes (1928).

*Keniston.* H. Keniston published a ranking of graduate departments in the arts and sciences in 1957. Departments were ranked 1 through 15. Composite scores for institutions and divisions can be calculated by summing the scores for departments in each division. See Keniston (1959).

*National Academy of Sciences 1982 (NAS 1982).* Ranking of graduate programs, it is organized by department and major division based on a large number of “objective measures” of quality and a reputational survey conducted in 1981. There are separate volumes of biological sciences, engineering, humanities, mathematics and natural sciences, and social and behavioral sciences. See Jones, Lindzey and Coggeshall (1982), vols. 1-5.

*National Research Council 1995 (NRC 1995).* Ranking of the quality of graduate programs, it is based primarily on the reputation for scholarly quality of program faculty and measures of the program’s effectiveness in educating research scholars and scientists. See Goldberger, Maher, and Flattau (1995).

*Roose-Anderson.* This is a replication of the 1966 Cartter ratings by Kenneth Roose and Charles Anderson, also conducted under the auspices of the American Council on Education. Roose and Anderson differed from Cartter by including several new areas of study and 25 additional universities; respondents were selected from lists produced by graduate deans at 130 institutions. As in the Cartter study, respondents rated departments on a 6-point scale, and ratings were averaged to determine each department’s quality scores. See Roose and Anderson (1970).

*U.S. News and World Report.* The magazine has published an influential ranking of undergraduate colleges and universities since 1983. Early lists were based on perceptions of university presidents. Since 1988, the magazine has made an effort to develop a more objective set of criteria, but the rankings have been repeatedly criticized on methodological and substantive grounds—notably, for a dubious weighting scheme and lack of concern for the teaching and learning environment on campus (see, e.g., Thompson, 2000). *U.S. News* has published an annual ranking of graduate law, medicine, business, engineering, and education programs since 1989. Graduate divisions and departments in arts and sciences have been ranked irregularly beginning in 1989. Professional

school rankings are often criticized for relying too much on perceptions of placements rather than faculty productivity.

### Scholarly and Teaching Resources

*Association of Research Libraries (ARL).* The ARL has provided a ranking of research libraries in the United States since 1961 to 1962, continuing a series that began in 1908. Rankings are based on several indicators, including number of volumes, current serials, volume of interlibrary loans, and qualifications of professional staff.

*Campus Computing Survey.* This is an annual survey of colleges and universities on computing expenditures and usages beginning in 1990. Recent surveys include data from more than 500 two- and four-year institutions. The study is conducted by Kenneth C. Green under the title “Campus Computing Survey.” Breakdowns by individual institutions are not available. Annual data are summarized by Carnegie class and are available for a moderate fee. See, for example, Green (2000).

*IPEDS Academic Library Survey.* This survey has been conducted on a biennial basis since 1996. The primary emphasis is on library holdings, functions, and activity levels across a range of library services. The response rates are high and data quality is excellent.

*Odyssey.* With support from the Mellon Foundation, the research firm Odyssey, located in San Francisco, is currently conducting a survey of current faculty practices and attitudes concerning online research and library resources.

### Financial Data

*Council for Aid to Education (CAE).* CAE publishes an annual report on gifts to higher education institutions, *Voluntary Support of Education*. This report gives institutional totals broken down by source and use.

*Hines.* Edward R. Hines of Illinois State University collects data on state appropriations for higher education operating expenses. Data include state tax funds appropriated for colleges and universities, for student aid, and for governing and coordinating boards. They do not include funds for capital outlays and money from sources other than state taxes, such as student fees or appropriations from local governments.

*HEGIS/IPEDS.* See above under Institutional Characteristics.



*National Association of College and University Business Officers (NACUBO).* This organization has collected financial data directly from colleges and universities for purposes of defining the costs of education in a comparable way, without agreement so far on a formula. Nevertheless, researchers at NACUBO are leaders in fine-grained budget analysis.

*National Association of State Student Grant and Aid Programs (NASSGAP).* Association collects data annually on “need-based” and “non-need-based” financial aid by states.

*National Science Foundation R & D (NSF R & D).* Since FY 1972, NSF has published an annual *Survey of Scientific and Engineering Expenditures* at universities and colleges. Data include R & D expenditures by source of funds and by disciplines. Data also include capital expenditures by major science and engineering disciplines.

*National Science Foundation Federal Obligations (NSF Fed).* Since FY 1971, NSF has published an annual survey of federal obligations to universities, colleges, and selected nonprofit institutions. Data are furnished by federal agencies and are reported by institution. Data are available by obligation type, by agency, and by science and engineering disciplines.

*Williams.* The Williams Project on the Economics of Higher Education, sponsored by the Mellon Foundation, and directed by Gordon C. Winston, has developed a database that corrects errors in IPEDS financial statistics and estimates key financial variables that are missing from the IPEDS database, such as the “rental rate” for existing physical capital, a variable that is important for studies of the costs of higher education. The corrected and expanded financial statistics developed in the Williams Project cover some 2,100 institutions of higher education. They have formed the basis for a number of influential studies and are available to higher education researchers.

## Relations With Industry

*Association of University Technology Managers (AUTM).* The AUTM has published since 1996 an annual survey of royalties on inventions, filings for patents, and start-up companies spun off from faculty and graduate student discoveries. Survey includes results from more than 100 leading research universities. Because not all institutions respond every year, comparisons are inexact. Costs for obtaining data vary by participation status. Data are available to researchers at participating institutions for a comparatively small charge; charges for nonparticipants are substantial.

*Carnegie-Mellon Survey of Industry-University Research Centers (Carnegie-Mellon).* Data were collected in 1994 on university-industry R & D relationships, including survey data on the composition and activities of university-industry research and development centers. The data are limited only by a low response rate (under 50 percent) and potential sample biases. See Cohen, Florida, Randazzese, and Walsh (1998).

## STUDENTS AND RECENT GRADUATES

Studies of college and university students and graduates are also sufficiently numerous to require subdivisions. The subdivisions I will use are as follows: (a) entering college students, (b) student experiences at college, (c) surveys of graduates, and (d) longitudinal studies. I have not included data collected on student proficiencies and learning outcomes because of doubts about the validity of these data.<sup>4</sup> In each subsection, studies are listed alphabetically.

### Entering College Students

*The American College Freshman.* UCLA’s Higher Education Research Institute, under the direction of Alexander Astin, has been conducting annual studies of freshmen attitudes since 1966. These are very large studies, including responses from some 250,000 freshmen in recent years from more than 450 institutions. Questions include political and social attitudes, reasons for attending college, attitudes about course work, and career aspirations. The studies are not based on probability sampling, and efforts to determine standard errors using unorthodox methods have been faulted by researchers. See Jones (2002).

*American College Testing (ACT).* Like its better-known competitor, the Educational Testing Service (ETS), ACT provides participating institutions with profiles of students who take the ACT. This profile includes background information, high school characteristics, career interests, college plans, and achievement test scores. ACT also conducts validity studies, which, like those of ETS, are not generally available to outside researchers.

*Educational Testing Service (ETS).* ETS and its parent organization, The College Board, collect a variety of data about students, some of it available to outside researchers and some of it not. Data available to outside researchers include a basic profile of students who take the SAT each year, including their prior academic records, their high school course-taking patterns, and demographic and family background characteristics. A separate instrument, the Admitted Students Questionnaire, provides student assessments of programs, admissions procedures, institutional image, financial aid packages, common



acceptances, and comparative evaluations. In addition, ETS has been collecting data relating student demographics, test scores, and college grades and graduation since the 1940s. These data have been used primarily for validity studies of the various admissions tests developed and administered by ETS and the College Board. ETS has in recent years been open to sharing data with outside researchers.

### Student Experiences at College

*Adelman.* Files were compiled by Clifford Adelman on transcript data from NLS-72 for curricula in the years 1972 to 1984 and from High School and Beyond (HS & B) for curricula covering 1981 to 1993. Earlier file includes taxonomy of courses taken for nearly 12,600 students in the Postsecondary Education Transcript Sample of the NLS. The later file includes courses taken for 8,338 students in HS & B. Data includes course-taking, grading, and credit distributions. Common taxonomy allows for comparisons between 1972 to 1984 and 1982 to 1993. See Adelman (1995).

*College Student Survey (CSS).* These surveys, initiated in 1993, are relatively recent follow-ups to the better-known American College Freshman surveys, also conducted by HERI. The CSS focuses on students' level of satisfaction with various aspects of their college experience. Other questions investigate students' involvement in campus activities; their perceptions of cognitive and affective developments; changes in values, attitudes, and goals; career aspirations; and computer uses. They include the same institutions and students as those represented in the American College Freshman surveys. The HERI also conducts a separate study of student development during the first year of college, *Your First College Year*. This survey includes several items from the American College Freshman, plus additional items on academic, residential, and employment experiences; patterns of peer and faculty interaction; and items related to adjustment and persistence. As in other work by HERI, data are limited by nonprobability samples.

*College Student Experience Questionnaire (CSEQ).* Annual survey on college and university students was begun in the 1970s by C. Robert Pace and was directed by George Kuh between 1984 and 1999. During the period of its existence, CSEQ collected information about students' characteristics and college experiences from more than 250,000 students at several hundred colleges and universities. It includes data on the amount of time and effort students devote to core academic tasks as well as other activities; perceptions of their institution's climate (on eight dimensions); and gains made on 23 outcomes of college experience. See, for example, Kuh, Vesper, Connolly, and Pace (1997). The National Survey of Student Engagement (NSSE) replaced this survey in 2000.

*Community College Student Experiences Questionnaire (CCSEQ).* This instrument is similar to the CSEQ (see above) but targets the nontraditional, commuting students who typically attend community colleges. Questions address amount, breadth, and quality of effort in both in-class and out-of-class experiences; progress toward educational outcomes; satisfaction with community college environment; and background and demographic characteristics.

*Faces of the Future.* This annual study of community college students' experiences was piloted in 1999 by the American Association of Community Colleges and ACT and is now in its third year of administration. The study collects information on background, college experiences, level of satisfaction with community college experiences, and career aspirations for students at participating institutions.

*National Survey of Student Engagement (NSSE).* Under the direction of George Kuh at the University of Indiana, the survey includes items assessing how students spend their time in college, the amount of reading and writing they do, the nature of their course work, their programs of study, and the number of hours they spend per week devoted to studying, working for pay, participating in extracurricular activities, and providing care for children and other dependents. The study was inaugurated in spring 2000 and administered to approximately 200,000 students at 277 colleges and universities. The survey is intended to be a national annual survey. It replaces an earlier annual survey, also directed by Kuh, the College Student Experience Questionnaire.<sup>5</sup>

### Graduates

*Comprehensive Alumni Assessment Survey (CAAS).* This instrument tracks employment and continuing education of alumni of participating institutions. Other data collected include self-assessments of intellectual development, community participation, level of goal achievement, and background data. It is conducted by the National Center for Higher Education Management Systems (NCHEMS).

*National Research Council Doctorate Records.* Summary data are derived from the continuing National Research Council Survey of Earned Doctorates (from AY 1966). File includes data on the number of Ph.D.s by institution, academic discipline, gender, race/ethnicity, source or support, mechanism of support, postdoctoral status, postdoctoral work type, and citizenship. Data on mean times to degree are also available.

*National Science Foundation Graduate Student Survey.* Data are obtained from the annual NSF-NIH Survey of Graduate Students and Post-doctorates in



Science and Engineering (from Fall 1972). Data include demographic information and sources of major support.<sup>6</sup>

*Student Outcomes Information Survey (SOIS)*. In use since 1978, this instrument collects information on the background, college experiences, educational plans and accomplishments, and career trajectory of alumni of participating institutions. The survey, conducted by NCHEMS, includes a longitudinal component.

### Longitudinal Studies

*Baccalaureate and Beyond (B & B)*. A study of college graduates was conducted in 1993 with a first follow-up in 1994 and a second follow-up in 1997. B & B contains data on approximately 11,000 students identified originally through the National Postsecondary Student Aid Study. The study includes interviews with 8,000 parents, student interview data, and postsecondary transcripts. Later transcript data has been collected on progress and persistence at the graduate level. A special emphasis is on those entering public service occupations, particularly teaching.<sup>7</sup>

*Beginning Postsecondary Students (BPS)*. This instrument follows first-time beginning students from the National Postsecondary Student Aid study (NPSAS) conducted in 1989 to 1990 (see below). BPS further describes the experiences of beginning students during and transitions through postsecondary education and into the labor force. Follow-ups were conducted in 1992 and 1994.<sup>8</sup>

*College and Beyond (C & B)*. This is an extensive survey of individual characteristics, college experiences, and postcollege attainments of sample of students from selective colleges and universities prepared under the direction of William G. Bowen of the Mellon Foundation. Separate samples were drawn for matriculating classes of 1951, 1976, and 1989. The survey includes records for more than 80,000 students who matriculated at 28 institutions. A comparison sample of individuals who were approximately 18 years of age in 1951 and 1976 was drawn by NORC for contrasts with individuals in the C & B database. The comparison sample includes a high rate of nonrespondents and sharp differences between respondents and nonrespondents.<sup>9</sup>

*High School and Beyond (HS & B)*. This is a longitudinal study of more than 14,000 students who were high school sophomores or seniors in 1980. Both cohorts were surveyed every 2 years through 1986, and the 1980 sophomore class was also surveyed again in 1992. A major report on the sophomore data is available, tracing educational experiences, employment outcomes, and family

formation of the 1980s sophomores as of 1992. The study includes exceptionally detailed data, including transcripts, student financial aid records, and interviews with students, parents, and teachers.<sup>10</sup>

*NELS: 88*. This study, which continues the longitudinal work of NLS-72 and High School and Beyond, is based on a large sample of eighth graders in 1988. The study provides trend data about critical transitions experienced by young people as they enter secondary school, move into postsecondary education, and begin careers. Data were collected from students and their parents, teachers, and high school principals. School transcript records are included, as are cognitive tests administered in 1988, 1990, and 1992. Third follow-up data were collected in 1994 and fourth follow-up data in 2000. Dropouts, who could be located, were retained in the study.<sup>11</sup>

*National Postsecondary Student Aid Study (NPSAS)*. This is a comprehensive study that examines how students and their families pay for postsecondary education. It includes nationally representative samples of undergraduate, graduate, and professional students; students attending public and private institutions; and those attending 2- and 4-year institutions. It includes students who do and do not receive financial aid. Student interviews and administrative records, with details on financial aid, are available for AY 1986 to 1987, 1989 to 1990, 1992 to 1993 and 1995 to 1996.<sup>12</sup>

*Recent College Graduates Survey (RCG)*. This study was replaced by Baccalaureate and Beyond (see above). It was conducted sporadically between 1976 and 1991. The studies focused on students qualified to teach at the elementary and secondary levels, though it includes samples of students from noneducation disciplines and those who did not move into teaching. The study focuses on the education experiences and immediate postdegree employment of college graduates.<sup>13</sup>

### FACULTY

*The American College Faculty*. Triennial surveys were conducted by HERI at UCLA of more than 30,000 faculty members at some 380 institutions. Response rate is low on some of the early surveys (42%, for example, in 1995 to 1996). The study is limited to full-time employees who spend at least some of their time teaching undergraduates. The survey includes demographic data, data on faculty activities during typical workweeks, professional goals, publication activity, job satisfaction measures, attitudes about social and political issues, and attitudes about campus issues. The value of these surveys is limited by nonprobability samples and low response rates.



*American Association of University Professors (AAUP)*. Conducts an annual survey of salaries of full-time members of instructional staffs at colleges and universities except those in medical schools. The salaries are adjusted to a standard 9-month work year. Studies are based on data from more than 2,200 institutions, but not all report comparable data. Data are available by rank but not by steps within ranks.

*Carnegie National Surveys of Faculty*. A survey of more than 60,000 faculty in 1969 was conducted by the Carnegie Commission. It includes data on faculty demographics, training, publications, careers, and social and political opinions, including opinions on campus issues. Everett Ladd and Seymour Martin Lipset conducted a small (470 person) follow-up survey in 1972 to examine faculty attitude change between the late 1960s and early 1970s. The series continued in 1975, 1984, 1989, and 1996. These surveys included much smaller samples than the 1969 study (about 5,500 in 1989) but do attempt to cover a variety of disciplines. A survey of faculty was conducted by the Carnegie Foundation in 1996 and 1997. It includes data on faculty workloads, job satisfaction, participation in governance, and attitudes about campus and national issues and was supplemented by a sample of faculty in "new colleges" conducted by the Association of New American Colleges (ANAC).

*National Center for Educational Statistics (NCES) Faculty Salary Data*. Institutional data are collected annually from AY 1971 on numbers of faculty and average salaries by rank, tenure status, contract length, and gender. Data also include fringe benefit expenditures by rank and contract length.

*National Survey of Post-Secondary Faculty-1988 (NSOPF-88)*. This is a survey of more than 10,000 departmental chairs and instructional faculty at 420 colleges and universities. It includes data on faculty demographics, training, careers, workloads, job satisfaction measures, and opinions concerning campus issues and includes department-level data on such issues as faculty composition, turnover, recruitment, retention, and tenure policies.<sup>14</sup>

*National Survey of Post-Secondary Faculty-1993 (NSOPF-93)*. A survey of more than 27,000 faculty at nearly 900 colleges and universities, it includes data on faculty demographics, training, careers, workloads, job satisfaction measures, and opinions concerning campus issues. Unlike NSOPF-88, it does not include department-level data.<sup>15</sup>

*National Survey of Post-Secondary Faculty-1999 (NSOPF-99)*. This survey continues the NSOPF series with many repeated questions.<sup>16</sup>

*Rhoades*. This is a data file on more than 200 negotiated union contracts from the 1980s and 1990s on issues such as job responsibilities, pay and fringe

benefits, evaluation, termination, procedural protections, managerial prerogatives, and regulations regarding use of part-time faculty. In 1994, union contracts covered 44% of full-time faculty nationwide (and 26% of full- and part-time faculty). See Rhoades (1998).

#### ADMINISTRATORS

*The American College President*. The American Council on Education has conducted five studies since 1986 on American college and university presidents. The most recent study includes data from 2000. The survey includes data on demographics, training, careers, major responsibilities, and selection process of more than 2,000 presidents in each of the 5 survey years.

*Chronicle*. Annual analysis by *The Chronicle of Higher Education*, beginning in 1991, was made of compensation of top administrators at more than 450 higher education institutions. The number of institutions varies somewhat from year to year. Data is based on analysis of Internal Revenue Service's Form 990 provided by the institutions. The data also include information on the compensation of the highest-paid faculty by institutions.

*College and University Personnel Association (CUPA)*. This instrument collects data on salaries of administrators across a large number of positions from more than 1,500 public and private institutions. Data by institution are not available. Data by Carnegie and other classifications are available with written permission.

*Colleges and Universities 2000 Surveys (C & U 2000)*. This is a study of the attitudes of presidents and provosts at approximately 375 four-year institutions concerning reference institutions, programmatic development, departmental prestige, major responsibilities, decision-making practices in several areas, and the future of higher education. It was conducted in 2000 and 2001 under the direction of Steven Brint. It excludes specialized institutions, proprietary institutions, and community colleges.

#### DATA ARCHIVES

*Computer-Aided Science Policy Analysis and Research (CASPAR)*. A database system is maintained by Quantum Research Corporation and includes information from a number of NSF and NCES series. It also includes data from two NRC data sets. These include: R & D Expenditures Survey, Federal Support Survey, Graduate Student Survey, and the Science and Engineering Personnel Survey (all from the NSF Division of Science Resource Studies); earned degrees, opening fall enrollment, faculty salaries, financial statistics, and tuition



(all from NCES's HEGIS/IPEDS series); the National Research Council Doctorate Records File and the National Research Council Doctorate Program Ratings. These time series data are available in most cases through 1996 only.

*Huron Institutional File (HIF)*. HIF contains some 215 variables on 2,600 institutions of higher education collected by Jerome Karabel and associates of the Huron Institute in Cambridge, Massachusetts. Approximately half of the variables are institutional and are drawn from the 1973 American Council on Education (ACE) Institutional Characteristics File. The other variables consist of quality and status measures of departments, professional schools, and universities dating from the period 1940 to 1977. Data currently exist only on tape. Efforts to download data onto contemporary media are now under way.

*Institutional Data Archive (IDA)*. A data archive currently under construction by Steven Brint, it will include responses to the Colleges and Universities 2000 study of presidents and provosts at approximately 375 institutions. It will also include data drawn from college catalogs on programmatic change from the same 375 institutions. These data chart change over a 30-year period in schools and colleges, departments in the arts and sciences, departments in professional schools (excluding medical schools), interdisciplinary, degree-granting programs, and general education requirements. The archive will also include data drawn from another 23 data sets for the same set of 375 institutions. Time series data are included from 1970. A number of variables are drawn from HEGIS/IPEDS. Other data sets concern institutional characteristics and reputations; student career trajectories; faculty salaries, workloads, and attitudes; and backgrounds of top administrators. The sample population is based on a random stratified sample of four tiers of American colleges and universities. It does not include specialized institutions, proprietary institutions, or community colleges.

### TRENDS IN DATA COLLECTION

In higher education studies, as in most areas, different types of data have been collected at different times. The analysis of sociopolitical and organizational interests provides a useful perspective on trends in data collection. Changing cultural conceptions of the university also play a role in defining data-collection interests, particularly the shift from the model of research-centered higher education to a model of market-sensitive educational service organizations.

The interests of the state in data on the basic conditions of social life are, at first, primary. The U.S. government has collected basic data on enrollments, instructors, and library volumes since 1867 (and regularly from 1870). (Similar statistics were collected from the 1820s by a private group and published in *The Quarterly Review of Education*.) The quality of these data is not always high, but it does provide a rough profile of higher education in the 19th and early 20th

centuries. These early efforts to collect standardized data can be considered an extension of the census-taking functions of government, which date back many centuries, whether for reasons of "bio-regulation" (Foucault, 1978), as an institutionalized imprint of the Western cultural model (Meyer, Boli, & Thomas, 1987), or for other reasons.

Large-scale data collection with good controls on data quality does not begin until the "take-off" period in American higher education, the 1960s. At this time, the higher education system begins for the first time to enroll more than a small percentage of secondary school graduates (and this is, not incidentally, when the resources and technical skills of government officials allow for more ambitious forms of data collection). A continuous series of government surveys (HEGIS, and, later, IPEDS) begins in the 1960s, monitoring a variety of institutional characteristics, enrollments, degrees awarded, R & D funding, and financial statistics. Most college guides also begin at this time as a tool for consumers who are interested in making informed choices in an increasingly complex market for higher education degrees and credentials.

Broadly speaking, government data-gathering has two major sources. In some cases, Congress has initiated the process of data collection, as in the case of the Campus Crime Survey. Similarly, Congress has mandated IPEDS since 1990 as part of the reauthorization of the Higher Education Act. More often, survey ideas come from professional staff at the NCES in consultation with the organized higher education community in Washington. All surveys must be justified for their potential relevance to issues in educational policy. Authorization to conduct surveys depends on the availability of resources and sympathetic staff in the Department of Education, the Office of Management and the Budget, and Congress. Some recent surveys have been justified on the basis of their relevance to financial aid policy (the NPSAS) or to the preparation of students for public service careers, particularly teaching (RCG and B & B). To some extent, the interests of academic researchers and the higher education associations have influenced the content of NCES postsecondary studies, but policy issues are always primary from the point of view of those authorizing the studies. Often, these studies have in fact influenced policy. The BPS study, for example, is credited with helping to shift the focus of policy makers from providing access to underrepresented groups to ensuring the persistence of these groups.

The other major governmental influences on data collection have been the NRC and the NSF. These organizations have had a long-standing interest in the state of scientific manpower and in encouraging competition for research excellence. These interests have been supported by every new administration, from Truman on. The NSF's Scientific Resources Services division has charted the production of scientific manpower and the careers of scientists, whereas the NRC has periodically encouraged competition among institutions by providing rankings of departments. These agencies are creatures of the postwar interest in encouraging continued scientific progress under the aegis of the state.



The major higher education associations are banded together in the National Center on Higher Education, with the ACE serving as the key bridging organization. ACE was one of the many bridging organizations introduced during the Progressive Era with the support of the major philanthropic foundations. ACE has been more active in data collection during some periods of its history than others. It has collected data or helped in the collection of data both as a means of providing feedback to its member institutions and as a source of information for its advocacy activities on behalf of higher education. ACE provided early funding for Alexander Astin's surveys of college freshmen but no longer provides financial support. Through the work of Alan Cartter, ACE was also active in early studies of departmental reputations. For some 15 years, it funded panel-based topical surveys under the direction of Elaine El-Khawas, which led to a series of reports on "campus trends." (The data tapes of responses to these Higher Education Panel surveys were, unfortunately, not maintained.) It has collected data on the background and careers of college and university presidents since the mid-1980s. More recently, it has collaborated with Steven Brint on the College and University 2000 surveys and in the creation of an institutional data archive on American higher education.

Currently, most ongoing data-gathering activities of higher education researchers are based on a cooperative model in which participating institutions support data collection to receive back data about their institution (and how it compares to other institutions) from the researchers. This model was followed, for example, by George Kuh in his work on college student experiences and is followed by Alexander Astin's Cooperative Institutional Research Program, which fields surveys of college students and faculty. Here, the interests of the principal investigator and the participating institutions are negotiated collaboratively, with a strong emphasis on repeated items for purposes of time-series analysis.

The major philanthropic foundations have, perhaps surprisingly, been comparatively uninvolved in national data-collection efforts. Most foundations prefer instead to support conferences and topically focused case studies, or to provide grants directly for institutional or programmatic support (McIlInay, 1991). Where they exist, broader research efforts underwritten by foundations have been strongly influenced by the interests (and methodological preferences) of foundation presidents. The Carnegie Corporation of New York was active in data collection during the presidency of Alan Pifer, who hired Clark Kerr to chair the Carnegie Commission on Higher Education. Kerr and his associates did not, however, commission many surveys. The Carnegie faculty survey of 1969 is an exception. It reflected a concern among commission members about the political leanings and departmental divisions among the faculty at a time of student unrest. A few recent exceptions also exist to the rule of limited foundation involvement in national studies of higher education. The Andrew W.

Mellon Foundation, under the leadership of William G. Bowen, a noted higher education economist, has been most active in funding studies of higher education, including C & B and the Odyssey project on instructional technology. Mellon has also supported the Williams Project on the economics of higher education. The Pew Charitable Trusts have also funded some large-scale studies, including the NSSE, reflecting the foundation's interest in more direct measures of college quality than accreditation and reputational studies can provide.

As the higher education system has grown, it has generated a complex array of constituency organizations. Frequently, these organizations have collected data for purposes of self-monitoring and representation to the outside world. Thus, AAUP has collected faculty income data, CUPA has gathered income data for college and university administrators, AUTM has collected information on patenting, licensing, and technology transfer, and both the ETS and ACT have conducted numerous studies of the connection between socioeconomic background, standardized test scores, and the role of tests in predicting success in college and later life. Building on the foundations provided by their highly successful testing activities, both ACT and ETS have diversified into other arenas in recent years, providing a large range of services to colleges and universities (such as the entering student and alumni surveys discussed above), which can be loosely characterized as management and marketing information services.

In analyzing trends in data collection, it is important to take into account not only the interests of various resource providers but also the broader cultural climate surrounding colleges and universities. Many commentators have observed a shift in the "institutional logic" (Thornton & Ocasio, 1999) of colleges and universities, with the mid-1970s marking the inflection point of change. Different commentators provide slightly different formulations about the character and import of this change, but virtually all agree that faculty research interests, shaped and supported largely by government, were primary in the postwar period through the early 1970s (Jencks & Riesman, 1968) and that markets and marketing have become substantially more important in the period since that time (see, e.g., Clark, 1998; Duffy & Goldberg, 1998; Gumport, in press). This changing institutional logic has affected the data collected by higher education researchers. Thus, comprehensive efforts to monitor government research expenditures, the recruitment and training of scientific and engineering graduates, and faculty research productivity (as symbolized by department quality) originate in the 1960s, the high point of government-supported research centrality. By contrast, in the 1980s and 1990s, new surveys began to collect data on voluntary giving to colleges and universities, state appropriations, tuition changes, and university relations with business. Similarly, data used for stratifying and segmenting the system tend to move from an exclusive focus on hierarchies of selectivity and reputation to a new interest in market segments—that is, from vertical to horizontal differentiation.



## WHAT NEW DATA RESOURCES WOULD BE DESIRABLE?

Because extensive data resources already exist for the study of higher education, researchers should be very careful before proposing additional data collection. Colleges and universities are resistant to providing new data—and for good reason. Indeed, most policy issues can be answered with existing data. For example, the likely impact of continued demographic changes on recruitment to institutions and fields can be estimated from existing time series. The impact of changes in financial aid policies can be modeled using NPSAS and other data. Similarly, the impact of decreased emphasis on the SAT or other standardized tests on admissions and student performance can be estimated by comparing otherwise similar test-taking and non-test-taking students admitted to selective colleges that no longer require the SAT (see, e.g., Schaffner, 1985).

In this section of the article, I will therefore focus on key developments in postsecondary education that cannot be understood completely with existing data resources. When we think of the changing American higher education systems, we have in mind certain forces that may fundamentally reshape these institutions. What are these forces? One important trend over the past 20 years has been the increasing integration of colleges and universities into the broader political economy. As part of the national thrust for improved international competitiveness in the 1980s, higher education institutions became allied with state economic development interests and with for-profit firms as never before. The dimensions and consequences of this alliance are not yet entirely clear, partly due to gaps in data collection. Another important trend has been the movement of higher education into new training and consumption markets. Over the past three decades, we have witnessed a tremendous growth of programs for mid-career professionals and retirement-age adults. A final major source of change comes from the new means of production available to instructors through the Internet and other digital media. The Internet allows for new possibilities in teaching and learning through a mix of visual, aural, and verbal information. It also provides an avenue through which for-profit firms can readily enter the market for higher education courses and degrees. Higher education scholars do not yet know what the long-run impact of these new technologies will be.

Thus, key developments bearing on the future of higher education have to do with (a) relations between higher education and industry, (b) the extension of markets for higher education, and (c) the impact of technological change on both teaching and learning and access to higher education. College and university governance structures will help to direct these forces. Therefore, another key issue concerns (d) the future of college and university governance. Although these forces are fundamentally important, I will also mention in closing a few developments connected to the less rationalized (e) social and cultural ideals of higher education, such as shifts in general education and the rise of “social partnership” arrangements between higher education and community organizations. I

will conclude with a discussion of the ambiguity and promises of treating higher education as an element of the nonprofit sector.

## HIGHER EDUCATION AND INDUSTRY

*Changing patterns of knowledge production in scientific and applied science fields.* Higher education researchers are now beginning to understand the new world of knowledge production in the life sciences, which involves much more permeable boundaries between academe and industry (see, e.g., Powell & Owen-Smith, 1998). This kind of analysis should be extended to other fields. In particular, comparable studies should be conducted of knowledge production in computer science, finance, engineering, chemistry, and other fields in which industry and academe have become more integrated. For comparative purposes, studies of knowledge production in fields in which academe remains relatively autonomous from industry (e.g., physics, mathematics, applied medical specialties) would be useful. Studies of resource provision, organizational linkages, copublishing patterns, and career movements address different dimensions of this issue.

*Corporate sponsorship of research.* An annual or biannual study along the lines of the 1990 Carnegie-Mellon study of university-industry research centers would be very helpful to chart the trajectory of formal collaborations between universities and industry. Similarly, data on corporate-funded research, both for centers and individuals, would provide a useful complement to the excellent data that exists on federally funded research. Areas of collaborative funding would also be of interest. This work would help to broaden the picture provided by the annual AUTM surveys, which focus on technology transfer.

*Customized training in the community colleges.* Community colleges engage in a significant amount of short-term, customized training for private employers in their regions. No comprehensive studies of customized training programs in community colleges have been conducted for more than a decade (Grubb & Stern, 1989). It would be useful to know how current activity in this area compares to this earlier data. Critics argue that these programs amount to public subsidies to private firms for narrow, firm-specific training purposes.

## NEW MARKETS

*The noncollegiate sector.* By the noncollegiate sector, I mean regional vocational-technical institutes, for-profit comprehensive, postsecondary institutions (such as DeVry and the University of Phoenix), specialized proprietary schools



(such as business and secretarial colleges), and corporate providers of specialized degrees. This is a sector of postsecondary education in which major growth is occurring. Thanks to the work of Adelman (1995), we have good data on course-taking patterns in the noncollegiate sector of postsecondary education. We also have relatively good data on students in this sector, thanks to NPSAS and other postsecondary student surveys. However, we do not as yet have very good data on organization, program development, curricular change, decision making, staffing, and student experiences. Whether growth should be encouraged or regulated (through, for example, restrictions on financial aid availability) will depend on more knowledge about the operations of organizations in this sector and the labor market opportunities of students who have taken courses and degrees in them.

*The market for mid-career training programs.* Kerr (2001) has called this "Market II," and he has rightly pointed to its significance for the future development of postsecondary education. How large is this market? What programs are in greatest demand? Where do adults interested in career advancement pursue postsecondary credentials and course work? Who are the providers in this market and how is this market segmented? None of these questions has been fully answered. Data could be collected either through higher education institutions, corporations, or through surveys of people who have participated in the career-advancement market, or both. More information on the people involved in Kerr's "Market III"—that is, retired people pursuing lifelong learning through elderhostels and emeritus colleges—would also be of some interest, given our aging population.

*The rise of the practical arts.* A majority of college students now major in occupational and professional fields rather than in the arts and sciences. Indeed, at many institutions, the arts and sciences survive primarily for purposes of satisfying general education distribution requirements. The implications of this change remain understudied (though see Brint, in press). One can use proportions of students enrolled in arts and sciences and in occupational/professional programs to determine institutional profiles. Which institutions have become specialists in arts and sciences and which have become specialists in occupational and professional training? What are the implications for the arts and sciences of location in institutions that are specialists in occupational and professional curricula? What are the implications for occupational and professional curricula of location in institutions specializing in the arts and sciences? To what extent have occupational and professional curricula become more academic over time (that is, oriented toward theory, research-based conceptual frameworks, formal principles and formal methods)? Have arts and science disciplines at occupationally oriented institutions become professionalized over time (that is, including more clinical or intern work, demonstration projects, examples drawn from practice, and case methods)?

## ONLINE HIGHER EDUCATION

*The market for online course materials and degrees.* We have as yet little comprehensive information on students who are being served through distance learning programs of various sorts and particularly those provided on the Internet. We have little useful information about the advantages and disadvantages of online courses and degree programs—or about how people who pursue degrees online fare in the labor market. If the online market requires regulation in terms of labor practices, monitoring of students, or quality of instruction, policy development will require more extensive knowledge of this rapidly changing environment. More information is needed also on the production of curricular materials for these courses for future discussion of intellectual property issues. Existing surveys (such as the Campus Computing Survey) focus exclusively on academic providers.

*Diffusion of model uses of the Internet.* The potential of the Internet is barely scratched by those instructors who use it primarily for posting notes, conducting course-related chat rooms, and answering e-mail. Tomlinson-Keasey (in press) has discussed a number of more extensive forms of integrating the Internet into course design, such as the Virginia Tech "Math Emporium" and the array of "studio courses" developed at Rensselaer Polytechnic Institute. The more advanced contemporary uses of the Internet may become the educational standard of tomorrow. Charting these developments would also tell us something about the shifting boundaries of the postsecondary "digital divide."

## GOVERNANCE

*Public sector governance structures.* Berdahl (1970) conducted the last comprehensive study of public sector governance structures a generation ago. It is time for an update (though see Richardson, Bracco, Callan, & Finney, 1999, for excellent case studies). Collection of state-by-state data is necessary before studies of the consequences of different governance structures can be conducted. It would be useful to include in such a study the major actions over the past several years by the various state governing and coordinating boards and their legislated responsibilities. Some statewide coordinating boards are responsible for eliminating program duplication in low-demand fields and for adding new programs in high-demand fields. No efforts have been made to compile the curricular actions taken by statewide coordinating boards. Such an effort would help to fill in missing evidence both on curricular change and on the effects of statewide coordination on program development.

*Fine-grained budget analyses.* Several outstanding studies now exist of budget allocations in colleges and universities. Some of the best of these are oriented



toward understanding why selective private colleges cost so much to operate. See, for example, Clotfelter (1996) and Ehrenberg (2000). It would be useful to extend these case studies to broader samples to understand the connections between size, selectivity, prestige, sector, and key expenditure categories by faculty and administrative ranks and by academic and administrative departments. Because higher education budget categories are by no means standardized across institutions, such analyses require considerable insider knowledge. With the help of the Mellon Foundation, Winston and his colleagues at the Williams Project on the Economics of Higher Education have begun the work of correcting IPEDS financial data.

*The administrative staff.* Leslie and Rhoades (1995) are among the few scholars who have attempted to analyze data on the causes for rising administrative costs in colleges and universities. Administrative staffs are growing faster at most institutions than instructional staffs, and information on the backgrounds, training, careers, activities, and outlooks of administrators could provide a useful window on the structure and activities of contemporary higher education institutions. Along these lines, comparative data on areas of administrative authority, administrative authority combined with faculty oversight, shared authority, and faculty authority would be of interest for understanding the range of governance structures currently existing in higher education institutions—and potentially also their impact on institutional behavior. Similarly, studies of administrative to faculty ratios could also be of interest for purposes of understanding differences between more bureaucratic and more collegial environments.

*Boards of trustees.* To my knowledge, no comprehensive, historical data exist on the backgrounds, organization, attitudes, and activities of trustees of colleges and universities. Periodic surveys of a representative sample of institutions concerning the composition and activities of their boards would be useful, particularly in an age of frequent calls for the strengthening of boards.

### SOCIOCULTURAL ACTIVITIES

*General education.* A good, comprehensive study of changes in general education over the past 30 years would be valuable because it is an indicator of the perimeters of the common culture of educated Americans. Previous studies are either out of date (El-Khwawas, 1986) or limited to an elite segment of higher education (National Association of Scholars, 1996). The Carnegie Foundation is currently beginning work on this subject. This is also a subject addressed in *Colleges and Universities 2000*.

*Foundation-supported research.* No scholars have as yet carefully compiled a comprehensive history of foundation gifts by fields, subject matters, and

institutions. Today, this support is particularly significant in the arts, humanities, and social sciences. To my knowledge, no comprehensive data exist on this topic, although every foundation does publish its own annual report in which the data would be available. In addition, the *Chronicle of Philanthropy* publishes information on foundation grants, from which a data set could be assembled. Neither the Foundation Grants Index nor other registers of foundation grant support are available in a form that can be easily used in statistical analyses. Questions also persist about response rates in these registers (see Jones, 2002).

*Social partnership activities.* Case study evidence suggests that colleges and universities have become more active in a variety of community-serving activities, ranging from increased volunteering in community organizations to community-based research to economic development planning. This development is related to the rise of “social partnerships” as an alternative to welfare state-based approaches to social problem solving (see Brint & Levy, 1999). It would be useful to know about the organized, ongoing involvements of colleges and universities with local, regional, and/or national organizations for purposes of community support, social problem solving, and/or economic development. This would include volunteering activities but also community-oriented research efforts, school adoptions, provision of facilities and/or consulting services, and participation in community economic development projects.

### HIGHER EDUCATION AND RESEARCH ON THE NONPROFIT SECTOR

A comparatively small number of topics have animated research on the nonprofit sector. Because data on higher education is abundant, colleges and universities provide a useful (and not yet well-investigated) site for research on these topics. Within higher education, public, nonprofit and for-profit organizations can be compared on measures of curricular scope, pricing structures, educational quality, social mobility, and other organizational and performance measures. The increasing role of privately funded research provides a setting for comparative studies of the benefits and costs of public and privately financed research (see, e.g., Cohen et al., 1998). The role of higher education as an economic force can be calculated based on employment, influence on community economic development, technology transfer, and even international trade (if the value of intellectual properties and the tuition of international students is taken into account). This economic impact can also be compared to other segments of the nonprofit sector, such as hospitals and cultural organizations. Conversely, the costs to localities of nonprofit exemptions for colleges and universities can be computed by merging census data with public records of property tax exemptions. The social impact of higher education can be investigated by comparing associational memberships, volunteering, densities of network ties, library



usage, school quality, and cultural participation indicators in demographically similar communities in which colleges are and are not located. The impact of colleges and universities on other social indicators—from crime rates to political participation—can be estimated in a similar way.

## NOTES

1. Complicating the issue further are mixed patterns of governance found in a few influential cases. The University of California and the University of Michigan, two of the leading public university systems, are constitutionally autonomous from the state. They are designated as “public trusts,” although their governing boards are appointed by public officials.

2. Indeed, data resources are so abundant and reporting costs high enough that the National Center for Education Statistics and the American Council of Education have been working in recent years to reduce the reporting requirements on colleges and universities by eliminating duplication and attempting to phase out studies that have not been able to achieve high levels of data comparability across institutions.

3. The College Results Survey, now available through *Peterson's*, the producer of a popular series of college guides, is an example of a data set not meeting minimal standards of reliability or validity. This survey collects information on work and career, continuing education, personal values, and self-confidence. Survey is filled out online from the *Peterson's* Web site. Institutions use data collected in collaboration with *Peterson's* for purposes of self-study. For social scientists, serious issues obviously exist concerning the representative quality of respondents to online surveys.

4. Borden and Owens (2001) provided a more detailed assessment of several studies included in this section. Borden and Owens provided a discussion of data collected on student proficiencies and learning outcomes.

5. Due to confidentiality legislation, restricted data licenses are required to access all raw data from surveys of individuals that are conducted by the federal government. Data restrictions also exist on some surveys collected by nongovernmental organizations. This survey is affected by these limitations.

6. See Note 5.
7. See Note 5.
8. See Note 5.
9. See Note 5.
10. See Note 5.
11. See Note 5.
12. See Note 5.
13. See Note 5.
14. See Note 5.
15. See Note 5.
16. See Note 5.

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