

The Andrew W. Mellon Foundation

*Report
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*140 East 62nd Street, New York, New York 10021
(212) 838-8400*

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THE ANDREW W. MELLON FOUNDATION, a Not-for-Profit Corporation under the laws of the State of New York, is the result of the consolidation on June 30, 1969 of Old Dominion Foundation into Avalon Foundation with the name of the latter being changed to The Andrew W. Mellon Foundation. Avalon Foundation had been founded by Ailsa Mellon Bruce, daughter of Andrew W. Mellon, in December 1940 as a common law charitable trust. In 1954 it was incorporated under the Membership Corporations Law of the State of New York. Old Dominion Foundation had been established in 1941 under the laws of the Commonwealth of Virginia by Paul Mellon, son of Andrew W. Mellon.

The purpose of the Foundation is to aid and promote such religious, charitable, scientific, literary, and educational purposes as may be in the furtherance of the public welfare or tend to promote the well-doing or well-being of mankind.

Under this broad charter, the Foundation currently makes grants on a selective basis to institutions in higher education; in cultural affairs and the performing arts; in population; in conservation and the environment; and in public affairs.

Within these fields, the Foundation directs most of its grantmaking to particular areas of interest, which are made known in a variety of formal and informal ways. Annual Reports describe grantmaking activities and present complete lists of recent grants. In addition, organizations are welcome to request further information concerning the nature and extent of the Foundation's activities in a specified area. The Foundation seeks to be clear about its priorities so as to provide reasonable guidance to those who are considering investing time and resources in preparing proposals.

Applications are reviewed throughout the year, and no special forms are required. Ordinarily, a short letter setting forth the need, the nature, and the amount of the request and the justification for it, together with evidence of suitable classification by the Internal Revenue Service and any supplementary exhibits an applicant may wish to submit, are sufficient to permit consideration by the staff. Applicants must recognize, however, that the Foundation is able to respond favorably to but a small fraction of the requests that it receives. Only rarely is a grant made in response to an unsolicited proposal outside defined areas of interest, and prospective applicants are encouraged to explore their ideas informally with Foundation staff (preferably in writing) before submitting formal proposals. The Foundation does not make grants to individuals or to primarily local organizations.

PRESIDENT'S REPORT

In last year's President's report, it was my privilege to pay tribute to John Whitehead's leadership of the Foundation's Board of Trustees from December 1990 until March 1997. At their March 1997 meeting, the Trustees elected Hanna H. Gray, who has served as a Trustee since June 1979, to succeed Mr. Whitehead as Chairman. At that same meeting, Walter E. Massey, president of Morehouse College, was elected to membership on the Board of Trustees.

Important changes have also occurred in the Foundation's staff. In the fall of 1997, Mary Patterson McPherson, recently retired president of Bryn Mawr College, joined our staff as Senior Program Officer. "Pat" McPherson, as she is known to so many, is succeeding Alice F. ("Tish") Emerson as the staff member with principal responsibility for the Foundation's program for liberal arts colleges. Ms. Emerson will be retiring as a Senior Fellow of the Foundation this July, but will continue to advise the Foundation concerning our work with the Appalachian colleges. Elizabeth A. Duffy, who worked so ably with Ms. Emerson on grants to liberal arts colleges and who also served the Foundation in administrative and research capacities, has left the Foundation to accept a position as director of program development at the Woodrow Wilson National Fellowship Foundation. James Shulman and Thomas Nygren, who already serve on the Foundation's staff, have each added some of Ms. Duffy's responsibilities to their existing portfolios.

I mention these personnel changes at the start of the President's report, rather than at the end (as is more customary) because I want to emphasize the importance of individuals at a foundation that has a small board of trustees and a small professional staff. Members of other organizations, and especially grant-seekers, appreciate being able to deal directly with a small number of highly capable people. For my part, I consider myself very fortunate to have such outstanding colleagues on the Board and on the staff.

Following our usual practice, the last part of this year's report is devoted to an extended discussion by staff members of one aspect of the Foundation's activities; this year, Tish Emerson and Liz

Duffy have contributed an essay on the Foundation's liberal arts colleges program, with a focus on teaching and technology. Many will be interested, I know, in the lessons they have learned from a broadly ranging series of grants designed to assist colleges in using electronic technologies to improve undergraduate teaching, and especially the teaching of foreign languages. As Ms. Emerson and Ms. Duffy indicate near the end of their essay, identifying and assessing the financial consequences of such innovations has been one of the most difficult aspects of designing, monitoring, and evaluating this program.

They are by no means alone in coming to this conclusion, and the Foundation continues to support another initiative, led by Gilbert Whitaker, formerly provost of the University of Michigan and now dean of the Jones Graduate School of Administration at Rice University, designed to encourage cost-effective uses of technology in teaching in a variety of educational settings. During 1997, new grants in this area were made to the University of Pennsylvania, the University of Michigan (in collaboration with the Universities of Chicago and Wisconsin and Northwestern University), Rice University, and the University of Cape Town in South Africa. The teaching projects supported by these grants include improvements in laboratory instruction, graduate teaching of less commonly taught languages, and the development of modules that will permit the acquisition of basic skills of expository writing and critical reading by undergraduates in South Africa. In each instance, the Foundation and its grantees are committed to careful assessments of both costs and pedagogic benefits. It would be an added benefit if some of these projects also enhanced our understanding of the subtleties of evaluating the uses of technology in teaching.

Before providing a fuller discussion of research projects in higher education that are either supported by the Foundation or carried out by Foundation staff, I would like to comment on appropriations made in 1997 in two broad areas of continuing interest to the Foundation: (1) graduate study, other forms of advanced training, and faculty development, especially in the humanities; and (2) the work of independent research libraries, research libraries that are parts of universities, and the field of scholarly communication defined more broadly still (including the evolution of JSTOR, an electronic database containing the complete backfiles of core scholarly journals in a growing number of fields).

No significance should be attached to the absence of special mention in this year's report of grantmaking in a number of fields in which the Foundation remains very active: conservation and the environment, population, refugee studies, museums, the performing arts, minority fellowship programs, and educational "transformations" in South Africa, to cite obvious examples. Consistent with the practice in previous annual reports, it has seemed best to concentrate on a manageable number of topics. (A full list of grants made in 1997, in all areas, is presented in the back part of this report.) Brief special mention should be made, nonetheless, of two "new starts" in 1997. One is the development by Catherine Wichterman of a series of orchestra forums which she hopes will provide new insights into the condition and prospects of symphony orchestras. The second is the creation by Angelica Zander Rudenshtine of a promising new program of photograph conservation.

Fellowships and Advanced Training

In 1997, the Foundation appropriated over \$25 million in support of eight programs of assistance to graduate students, postdoctoral fellows, and faculty members (especially but not exclusively young faculty members in the humanities and related social sciences). Itemizing these forms of support may serve to indicate the range of the Foundation's grantmaking in this broad area. Our Trustees and staff remain persuaded of the fundamental importance of programs of this kind, which are designed to provide tangible assistance to promising young scholars at critical points in their careers.

- In 1997, the program of Andrew W. Mellon Fellowships in Humanistic Studies completed its fifth year. These highly competitive one-year portable fellowships, which are administered by the Woodrow Wilson National Fellowship Foundation, are awarded each year to approximately 80 to 85 prospective first-year graduate students in the humanities. Their purpose is to encourage some of the ablest undergraduates to pursue doctoral study in the humanities at the university that seems best able to meet their academic requirements. Since 1981, the Foundation has committed over \$63 million to this program and its predecessor program of multi-year awards.

- The Foundation's companion program of institutional grants in support of graduate study at ten universities completed its seventh year. This departmentally based program is designed to improve the effectiveness of graduate education while reducing time-to-degree and attrition rates. The program is focused on the organization of graduate study at the departmental level and the accountability of departments for the progress made by their graduate students. It provides support for summer research, dissertation seminars, and the writing of dissertations, conditional on students' meeting agreed-on goals within specified periods of time. From the beginning, it was hoped that the program would be sufficiently successful to merit support for ten years—a period staff believed would be long enough to demonstrate its potential and to allow departmental adaptations to be institutionalized. While it is too soon to judge how fully the program has met its objectives, the evidence to date suggests that its overall effects have been powerfully positive and that its most important elements deserve to be made permanent parts of graduate education at the participating institutions. To that end, the Trustees have approved a combination of endowment grants and annual spendable grants for three more years. The strong support for the program by the participating universities, including their willingness to raise matching endowment funds, is most encouraging.

- Since 1992 the Foundation's Trustees have approved grants to 25 different universities for seminars aimed at helping graduate students think productively about current debates over such propositions as: fields of study have no boundaries that distinguish them from other fields of study; all intellectual arguments are necessarily political; objectivity is an illusion; texts have no intrinsic meaning, only interpretations. The seminars are intended to bring into open discussion issues too seldom dealt with in graduate classrooms, and which are of immediate practical concern to students trying to write dissertations and preparing to teach. In 1998 this program will expand to include libraries, museums, and research centers.

- An appropriation of \$2,000,000 was made to the Social Science Research Council (SSRC) in support of its program, conducted jointly with the American Council of Learned Societies

(ACLS), of predoctoral research fellowships in the humanities and social sciences. The SSRC and ACLS have adopted a flexible format for awarding fellowships; these awards are intended to enable highly promising doctoral candidates in the humanities and social sciences to address trans-regional issues comparatively while drawing on the perspectives of the histories and cultures of the countries and regions they are studying. The fellowships not only provide access to research materials not available in this country but give the fellows first-hand knowledge, early in their careers, of places other than the United States. On their return the fellows participate in workshops held at SSRC aimed at helping them make the often difficult transition from the field to writing up their work.

- In the last few years, a modest number of grants have been made to liberal arts colleges in support of postdoctoral fellowships designed to allow able recipients of PhDs, chosen through national searches, to combine scholarship with teaching of special value to the college. In 1997, grants of this kind were made to Amherst, Williams, and Wesleyan. We expect this program to grow, and to include a small number of research universities. The grant made to Brandeis in 1997 can be regarded as illustrative of other grants to come. Over a period of five years, Brandeis expects to recruit eight postdoctoral fellows who are qualified to teach in its crossdisciplinary programs and whose research reaches beyond a single disciplinary tradition. Typically, fellows will spend half their time teaching and half doing research, and will be assigned individual faculty “mentors” to assist them in making the most effective use of the resources Brandeis can offer.

- Begun in 1994, the Sawyer Seminars program seeks to encourage comparative study of the historical and cultural origins of significant contemporary developments. It provides faculty and advanced graduate students with opportunities for discussion and research in seminars which are informal and free of curricular constraints. Seminars usually meet throughout a year and are intended to advance the current research interests of faculty members and students without requiring universities to institutionalize those interests in permanent structural arrangements. In line with the Foundation’s guide-

lines, each university submitting a proposal asks for support for one postdoctoral fellow and two dissertation fellowships, funds for visiting speakers including those from abroad, and the modest administrative costs of the seminar over a period sufficient to select the fellows and extend invitations to speakers. The Foundation's selection process, guided by an external advisory committee, has proven to be highly competitive. Eight new seminars were approved in 1997, and topics included the ethical, economic, and political implications of privatization of health care in Canada, France, Germany, the United Kingdom, and the US (Emory University); a seminar on the City, Modernism, and Nationalism that will seek to explain heightened sensitivity to national identity in the 20th century (NYU); and an exploration of the economic and political effects of the European Monetary Union on European nations (Princeton University).

- The largest single appropriation approved by the Trustees in 1997 was a grant of \$5 million to the American Council of Learned Societies. When John H. D'Arms became president of the ACLS in September 1997, he immediately determined that revitalization of its fellowship program should be the highest priority. Our Trustees agreed with this view. It is hoped that this appropriation, in combination with grants from other sources, will strengthen the ACLS Fellowship Program in a number of ways: first, the number of fellowships will increase from the current 55 to a total of 60 by 2001; second—and most important in D'Arms' view—the stipend for senior fellowships will also increase (at present, all ACLS fellowships carry a \$20,000 stipend); third, because the revitalization of the Fellowship Program will likely lead to increased numbers of applicants, provision will be made for an improved review process. We are optimistic that both the substance and the “signaling effect” of this appropriation will help to launch the process of strengthening the ACLS Fellowship Program in a major way.

- Finally, mention should be made of a much more specialized appropriation of \$2 million toward endowment for the support of faculty fellowships and grants within the Appalachian colleges. The Foundation has a long history of assisting these col-

leges, beginning with a grant for faculty summer study projects in 1979. In the last few years, most of the 33 colleges that are members of the Appalachian College Association (ACA) have been able to recruit faculty members who have already completed their PhDs. This has led to an increased need for post-doctoral research opportunities, but few of the ACA institutions are able to afford sabbaticals, faculty development grants, or student-faculty research projects. Fellowships and grants have proven to be major contributors to the intellectual life of the campuses as well as critical factors in mitigating the effects of geographic and cultural isolation. It also seems clear that the impact of such support on the morale of faculty members and the aspirations of students in the participating institutions has been pervasive, extending far beyond the fellows themselves.

These appropriations, considered together, illustrate the stages at which both younger and older scholars benefit from targeted support. Aspiring first-year graduate students need encouragement (and funding) to embark on demanding programs of study. The graduate programs themselves need assistance if they are to become ever more effective mechanisms for helping students move from first-year course work through the completion of a dissertation. Outside fellowships such as those provided by the SSRC are often critical in allowing graduate students at the dissertation stage to undertake more ambitious research projects than otherwise would have been possible. Postdoctoral fellowships, participation in programs such as the Sawyer Seminars, and, later, the availability of ACLS awards and other opportunities for faculty development facilitate movement to senior faculty positions and faculty development generally. There is a natural progression from one stage to the next and, while the Foundation cannot hope to support a seamless path of professional advancement, this broad area will receive continuing emphasis.

Research Libraries and Scholarly Communication

Concern for the well-being of research libraries has a long history at this Foundation. My predecessor, John Sawyer, was a leader in encouraging major libraries to work together, to share resources, and to be forward-looking in addressing common problems and

emerging opportunities. Over the last decade, the Foundation's interest in research libraries and the related area of scholarly communication has, if anything, intensified. The Foundation's grant-making in this broad area is now overseen by Richard Ekman, who has also taken major responsibility for related research (including a forthcoming book on electronic publishing of scholarly materials, edited with Richard Quandt and noted later in this report).

Independent Research Libraries and Historical Societies

The leading independent libraries and historical societies are good examples of valuable scholarly resources ("assets in being") that donors sometimes overlook. In 1992-93, the Foundation provided matching endowment grants to a number of these institutions in support of their core library functions. A subsequent series of grants supported postdoctoral fellowships intended to enhance their role as centers of advanced study.

Continuing interest in the financial health and operational effectiveness of these libraries prompted a review in 1997 of the progress they had made in achieving stability. This review indicated that many of them have succeeded in overcoming serious obstacles of the kind Jed Bergman, our former colleague, described so well in his 1996 book, *Managing Change in the Nonprofit Sector*. At the same time, new needs are evident, and in 1997 the Trustees approved a further round of grants totaling nearly \$6.5 million that focused on the ability of these specialized institutions to maintain adequate programs of care for their collections of books, manuscripts, graphics, photographs, and other materials. At some institutions, important research materials are not adequately catalogued, and the cataloguing systems themselves are idiosyncratic and incompatible with widely used standard systems. Moreover, technology now widely available in college and university libraries is not yet being employed in many of the specialized libraries to achieve more cost-effective management of collections. The nine recipients of these grants were: American Antiquarian Society, American Philosophical Society, Eleutherian Mills-Hagley Foundation, Folger Shakespeare Library, Henry E. Huntington Library & Art Gallery, Newberry Library, Pierpont Morgan Library, Villa I Tatti, and the Virginia Historical Society.

The New-York Historical Society (NYHS), another of these institutions, has both unique collections and a unique set of prob-

lems, long in the making. One of the most gratifying events of 1997 was the development of a detailed plan of collaboration between the Society and New York University that promises to address many of the most pressing needs of the Society's immensely valuable library on a sustainable basis.¹ To enable both entities to take advantage of this opportunity, the Foundation made a grant of \$2.8 million to NYU in order to: (1) insure better library service to NYHS visitors; (2) begin the process of cataloguing large parts of the NYHS's collection that are not at present listed in either RLIN or OCLC records; (3) process and preserve manuscript collections; (4) connect the bibliographic records of the NYHS's print and visual collections; and (5) improve access to the NYHS's prints, photographs, architecture, and ephemera collections.

Electronic Publication of Scholarly Materials

During 1997, the Foundation continued to support projects intended to test the effectiveness of electronic technologies in providing libraries and others with scholarly materials in formats that are easier to use and viable financially. One grant was made to the University of California Press (UCP), to experiment with electronic publication of scholarly monographs. Sales of scholarly books have been declining for years, and many presses, including UCP, have had to reduce the number of monographs they publish in order to maintain financial stability. The problem is particularly acute in area studies, certain fields of history, and literary criticism—fields in which UCP is a major publisher. UCP has developed a detailed plan for electronic publication of 24 monographs in Middle Eastern, African, and South Asian studies in an attempt to halt the slide of monograph publishing in these areas. A careful business plan has been designed which will allow rigorous testing of the economic costs and benefits of this new approach.

A second grant went to the MIT Press, a leading publisher of scholarly journals in the US and a pioneer in the creation of electronic journals. The MIT Press has found that its electronically published journals, widely regarded as of very high quality, have had slow acceptance. The Foundation is providing the funds

1. See Kevin M. Guthrie, *The New-York Historical Society: Lessons from One Non-profit's Long Struggle for Survival* [Jossey-Bass, 1996], for an account of the roots of the problems now being addressed.

needed to analyze systematically the factors responsible. The MIT Press will organize visits by staff members to a number of libraries where they will consult with faculty members as well as librarians. This straightforward assessment should shed considerable light on the future of this mode of scholarly publication.

While the Foundation will continue to support particularly promising projects of the kinds just mentioned, the grantmaking program in this area has now reached the point in its evolution where an initial stock-taking is in order. The preliminary results of grants made early in the Foundation's program are becoming available, and project directors are now able to benefit from the experiences of others. This is especially the case for projects that have focused on electronic alternatives to scholarly journals. In April 1997, a conference was held at Emory University at which nearly 30 papers on aspects of technology and scholarly communication were presented, mostly by directors of projects supported by the Foundation, on such topics as cost issues in electronic publishing; journal pricing and user acceptance; patterns of use; technical choices and standards; licenses, copyright, and fair use; and multi-institutional cooperation. Richard Ekman and Richard Quandt, who organized the conference, are now editing a collection of these papers for publication by the University of California Press within the next year.

JSTOR and Related Projects

A third major area of Foundation activity centers on the use of electronic technology to preserve back issues of core scholarly journals, enhance access to them by scholars worldwide, and at the same time ease the long-term problems faced by libraries in housing, preserving, and handling this body of literature. As readers of previous annual reports are aware, the Foundation assisted in the creation of an independent not-for-profit organization called JSTOR to test the feasibility of this concept.

The success of JSTOR has been gratifying. More journals in additional fields are being added to the database each month, new and expanded production sites have been established, and continued progress has been made in improving JSTOR's technology (including printing capabilities). Over 250 libraries in the United States have already elected to participate, and user acceptance, judged by both usage of the database and the reports of highly sat-

ified students and others, has been extraordinary. In the single month of February 1998, there were over 89,000 searches of the JSTOR database, and nearly 27,000 individual articles were printed.

Most recently, an agency of the British government called the Joint Information Systems Committee has negotiated an arrangement with JSTOR to permit the installation of a mirror site in Britain that will serve libraries and scholars in that country. Plans are now underway to locate an additional mirror site in Hungary that would serve Central and Eastern Europe. Additional information about JSTOR can be obtained by consulting its Web page (<http://www.jstor.org>) or contacting its president, Kevin Guthrie.

The reasons for making special mention of JSTOR in this report are to explain its evolving relationship with the Foundation and to note two specific modes of collaboration. While JSTOR is independent and well on the way to becoming financially self-sustaining, it has so many objectives in common with the Foundation that there is every reason to seize opportunities to collaborate while learning from each other.

One mode of collaboration is illustrated by recent grants made by the Foundation to two associations of colleges that stood to benefit greatly from access to JSTOR but would not have been able, without assistance, to do so. The two associations are the Southern Education Foundation in Atlanta, which works with a large number of Historically Black Colleges and Universities, and the Appalachian College Association, which was mentioned earlier in this report. Both of these associations have long-standing relationships with the Foundation, and their new participation in JSTOR has advanced other, broader objectives that the Foundation is pleased to be able to support.

Specifically, the Foundation's grants to these associations facilitate training of staff and faculty members and will provide a modest amount of flexible funding that is needed to permit member institutions to take full advantage of the technological advances that will affect so many aspects of education and research in the years ahead. In short, while JSTOR was important to these colleges in and of itself, its availability and power also served as a further "introduction," as it were, to modes of communication and interaction that will be of critical importance to the future of these institutions. New technologies must be accessible to institutions with

modest resources so that even larger chasms are not created between “have” and “have not” sectors of higher education. JSTOR is an excellent example of a practical tool that, once made available, can give faculty and students at institutions with relatively small library holdings the same access to core scholarly literature that is already available at many larger and more advantaged institutions.

A second mode of collaboration between the Foundation and JSTOR is illustrated by a series of grants made in the last two years to the Ecological Society of America (ESA). The ecologists were among the earliest enthusiasts for JSTOR, and the three principal journals the Society publishes have been included in JSTOR long enough for the value of this form of access to have been demonstrated to many members of the ESA. An evolving collaboration between the ESA and JSTOR, begun in 1996, led the ESA to request support to: (1) enable individual members of the Society, and not just participating libraries, to have direct access to ESA journals in the database; and (2) investigate the possibility of linking current issues of key journals to the backfile. These two objectives are being pursued.

Meanwhile, the promise of that excellent collaboration prompted the leadership of the Society to submit a still more ambitious proposal—namely, that Ecology and Botany could be one of the first JSTOR clusters offering a deeper selection of titles in a particular field. Ecology represents a good starting point because it is a central field, with rapidly growing enrollments in colleges as well as universities, and one that is also new enough, and sufficiently cohesive, that the corpus formed by its main journals is of manageable size. The Foundation responded very positively to this proposal, in part because the results eventually achieved should permit a useful test of the long-term implications of what can fairly be called a revolutionary new form of scholarly communication.

It is impossible for anyone to predict precisely how these projects and others like them will turn out. But there seems every reason to be optimistic about the JSTOR approach to broadening access to scholarly literature while simultaneously preserving it, and doing so in a highly cost-effective way.

The Foundation's Research Agenda in Higher Education

The remainder of my part of this report focuses on the research the Foundation is supporting on higher education. In part because of the interest of other researchers in utilizing the Foundation's College and Beyond database (described briefly at the end of this section), and in part because of the timeliness of some of the research underway, Trustees and others have suggested that I summarize these initiatives in some detail. I am glad to do so, but with the caveat that projects and sets of topics are always changing.

As background, it should be noted that this Foundation's approach to research is somewhat unusual. On the one hand, much of what we do is typical of foundations—that is, grants are awarded to a great many colleges, universities, and other kinds of organizations so that faculty and staff can carry out research in the Foundation's established fields of interest (such as ecology, population, refugee studies, and the arts, along with higher education). Other large foundations work in similar ways, while of course directing their support to fields of special interest to them.

The less common feature of this Foundation's interest in research is that our staff members—both those who have significant grantmaking responsibilities and a small number of research staff members—conduct studies themselves. The rationale for the Foundation's own research activities has four elements. (1) In company with all who do research, our staff members hope to contribute new ideas of value. In this regard, we seek to provide useful insights and information to institutions that are grantees (many liberal arts colleges, for example, have a strong interest in patterns of allocating merit aid, a subject staff members studied recently) as well as, in some instances, to a broader audience of scholars and policymakers. (2) A more narrowly focused objective is to gain the understanding necessary to be effective grantmakers in areas such as doctoral education, education of minority students, and support of libraries. (3) Research projects may suggest ideas that lend themselves to programmatic development (JSTOR grew out of a study of trends in library expenditures and the future of scholarly communication). Direct engagement with research also enhances the ability of staff members to evaluate external projects that have been funded by grants from the Foundation. (4) Finally, the active pur-

suit of research within the Foundation helps to create a milieu that is attractive to potential colleagues and stimulating to all members of the staff.

Recent Publications

Four recent publications growing out of research either carried out by Foundation staff or supported by the Foundation illustrate the range of subject matter, modes of analysis, and potential audiences that we expect to reach.

- Published late in 1996, Charles Clotfelter's *Buying the Best*, is based on case-studies of college and university departmental expenditures. Professor Clotfelter, who teaches economics and public policy at Duke University, has provided the most detailed analysis that exists today of factors responsible for rising costs in higher education. He concludes that one of the main "drivers" of higher costs is high institutional aspirations—combined with the availability of ever more expensive ways of doing research. At the same time, Clotfelter finds little support for claims that institutional inefficiency or unusually rapid increases in "unit costs" is to blame.
- Alvin Kernan, a Senior Advisor to the Foundation, edited a volume entitled *What's Happened to the Humanities?* that includes essays by Louis Menand, John H. D'Arms, Gertrude Himmelfarb, and Frank Kermode. Favorable reviews and comments by a number of leading scholars in the humanities indicate that the book has been useful both in clarifying hotly debated issues (such as curricular directions, library needs, the effects of theory, the "demise" of the disciplines, and funding trends) and in providing reassurance that there is room within the humanities for a wide variety of positions and perspectives on issues of all kinds.
- Two former Foundation staff members, Elizabeth Duffy and Idana Goldberg, completed *Crafting a Class: College Admissions and Financial Aid, 1955-1994*, a history of policies and practices at liberal arts colleges in Ohio and Massachusetts. A hallmark of the book is its combination of quantitative analysis and careful use of archival material to demonstrate how often a wide

range of colleges was affected by successive “large waves” (caused, for example, by demographic trends and the move to coeducation by a number of formerly single-sex institutions). The book also provides a useful history of early efforts to recruit minority students and the recent adoption of merit aid policies by many colleges.

- Another book on a related topic, *Meeting Need and Rewarding Talent in American Higher Education*, by Michael McPherson and Morton Schapiro, is based on research funded by the Foundation. It focuses on national trends in college enrollment and highlights the ways in which government policies, institutional responses to them, and a changing academic marketplace have affected both overall enrollment rates and the distribution of students from various socioeconomic categories among types of institutions. One finding that attracted considerable attention in the national press is that increasing numbers of students from affluent families are electing to attend public and private research universities rather than liberal arts colleges.

Ongoing Studies: Race and Diversity in Higher Education

The Foundation’s heavy investment in studies bearing on race and higher education (evident in the list of projects given below) reflects a long-standing interest in the issues of both educational policy and public policy associated with the efforts of colleges and universities to enroll larger numbers of minority students. Several related but somewhat distinct types of studies are now being supported by the Foundation in this area of research, which is both unusually contentious and extremely timely.

- Derek Bok, former president of Harvard, and I have spent much of the last 18 months on a study of the actual consequences of the policies of race-sensitive admissions that have been followed over the last 35 years by almost all academically selective colleges and universities, including the leading professional schools. In a book scheduled for publication by the Princeton University Press in September 1998 (titled *The Shape of the River*), we estimate the likely effects of a mandated policy of race-neutral admissions on the composition of enter-

ing classes and present new evidence on the academic performance in college and the subsequent life histories of the black undergraduates admitted in the fall of 1976 and the fall of 1989 (seen in comparison with their white classmates and national reference groups). The underlying research, which has been carried out in close collaboration with colleagues at the Foundation, includes an effort to measure at least some of the presumed educational benefits of enrolling more diverse classes.

- One of the early findings from our analysis of a part of the College and Beyond database (described below) is the existence of what appears to be “underperformance” in college of many well-prepared black matriculants, who earn lower grades than white classmates with comparable SAT scores and high school grades. This result, which is reported in a paper by Fred Vars and me (to be published later this year in a Brookings volume being edited by Christopher Jencks and Meredith Phillips), is consistent with a considerable body of previous research and plainly merits closer investigation. Douglas Massey of the University of Pennsylvania and Camille Z. Charles at Ohio State University obtained a grant from the Foundation in 1997 to begin a pilot study that will use longitudinal data in an effort to understand underperformance and why it occurs.

- Eugene Y. Lowe, associate provost at Northwestern, has edited a set of papers that address the subject of diversity on campuses more broadly. It includes essays by Claude Steele of Stanford, Uri Treisman of the University of Texas, and Scott Miller, now at the College Board, that comment on this same phenomenon from various perspectives. Neil Smelser of the Center for Advanced Study in the Behavioral Sciences has contributed a paper on experiences with affirmative action in California. This volume is scheduled for publication in the fall of 1998.

- Thomas Kane of Harvard is working on several projects that fall under the same general heading. One will extend his earlier work on the practicality of substituting class-based affirmative action for race-based programs. The second is an attempt to

understand more fully than anyone does now why family income correlates so strongly with college enrollment; Kane suspects that “liquidity constraints” not captured by the usual measures of income or wealth are an important part of the story, and he intends to test this idea using business cycle data.

- Michael Nettles of the University of Michigan is in the early stages of an ambitious effort to learn more about the reasons why black students drop out of college at higher rates than seemingly comparable white students. Some of the same issues of financial capacity being investigated by Kane may be relevant here.

- Another Foundation staff member, Stephanie Bell-Rose, is working with Thomas Espenshade of the Office of Population Research at Princeton on an in-depth study of the changing composition of minority populations attending some of the same academically selective institutions included in the Bowen-Bok project (comparing, for example, native-born students and those who have come from the Caribbean or other places outside the US). Ms. Bell-Rose is also working with staff members at the Urban Institute in Washington on the characteristics, preparation, and backgrounds of black students who have high SAT scores. Ernest Bartell of Notre Dame and Derek Neal of the University of Chicago are independently pursuing related topics—namely, changes in the secondary school origins and qualifications of matriculants at leading Catholic universities and the effectiveness of parochial schools in educating minority students.

- Jacqueline Looney, who directs the Foundation’s Mellon Minority Undergraduate Fellowship Program (MMUF), is working on a later stage of the educational process. By employing a variety of qualitative methods, she will assess the extent to which the MMUF program is achieving its objectives. As she studies the histories of the MMUF program participants, one of her aims is to distinguish the characteristics and experiences of those who have been most successful in pursuing PhDs from the characteristics and experiences of those who have chosen other career paths.

- Other scholars are exploring the role of community colleges in promoting diversity (Judith Blau of the University of North Carolina at Chapel Hill) and the contributions of Historically Black Colleges and Universities (Henry Drewry, a Senior Advisor to the Foundation, and Humphrey Doermann of Macalester College). Using data collected as part of the College and Beyond database as well as other information gathered specifically for their purposes, Drewry and Doermann are studying the histories of selected HBCUs to provide a more up-to-date picture of their role in American higher education.

Other Topics in Higher Education

Educational markets and the returns to education. Zvi Griliches at Harvard is preparing a definitive account of his decades of research on sources of productivity gains, with special reference to the contributions of basic research and advanced training. Caroline Hoxby of Harvard and the National Bureau of Educational Research has completed an important study of the nationalization of the market for higher education and the attendant geographic integration of competition for undergraduates among colleges and universities; her first paper, which makes use of industrial organization concepts, is titled “How the Changing Market Structure of US Higher Education Explains College Tuition.” Richard Zeckhauser and colleagues at Harvard are studying the proliferation of early-decision and early-action admission programs and have demonstrated already that such programs do not always benefit the students who are eager to participate in them. Richard Easterlin and Christine Schaeffer at the University of Southern California are studying a different type of “return” to higher education, namely its effects on life satisfactions as well as incomes. Cecilia Rouse at Princeton is studying the returns to education in community colleges, especially for minority students and women.

Faculty retirement. Orley Ashenfelter of Princeton and David Card of the University of California at Berkeley are carrying out what promises to be a path-breaking study of factors affecting faculty retirement decisions. Thanks to the cooperation of both TIAA-CREF and a large number of colleges and universities, Ashenfelter and Card are able to combine data on professors’ assets in pension plans with data on current salaries, types of institutions, fields of specialization, and working conditions to estimate much more pre-

cisely than has been possible before the impact of these various factors on the timing of retirement decisions. John Pencavel at Stanford is carrying out a parallel study of retirement patterns within the University of California system (which has offered a variety of retirement incentives), and he hopes to extend his research to include at least one other large state system.

Gender, race, choice of major, and choice of occupation. Jerry A. Jacobs, professor of sociology at the University of Pennsylvania, is studying patterns of curricular choice by students of different races and genders. Sarah Turner of the University of Virginia and I have finished a study of the relationship between pre-collegiate academic preparation (as measured by math and verbal SAT scores) and choices of majors by women and men in the late 1970s and the early 1990s. Turner now intends to collaborate with Harriet Zuckerman of the Foundation on a study of the interconnections, by gender, of pre-collegiate preparation, choice of major in college, grades in college, advanced degrees attained, and occupational choice and success.

Libraries and scholarly communication. Economists at Northwestern University with special competence in industrial organization (Ronald Braeutigam and others) are nearing completion of an analytical study of the economics of scholarly communication as they relate to libraries. Two of the Foundation's staff members, Richard Ekman and Richard Quandt, have finished editing a collection of papers on experiences in this country with electronic means of scholarly communication (presented at the Emory conference mentioned earlier in this report), which we expect will be published in 1998. Quandt is also editing a set of papers presented at a conference held in Warsaw that examined experiences with library collaborations in Eastern Europe.

Cost-effective uses of technology in teaching. As mentioned earlier in this report, Gilbert Whitaker of Rice is guiding the development of a series of demonstration projects intended to find ways in which technology can be used to improve teaching qualitatively while also reducing costs. Our expectation is that Professor Whitaker himself, as well as some of the directors of particular projects included within his program, will publish their findings. Also, this is a topic that Michael McPherson and Morton Schapiro hope to highlight in future conferences at Macalester College on research in higher education.

Intercollegiate athletics and campus life. James Shulman, a Foundation staff member, will be the senior author of a major study of trends in intercollegiate athletics over the last 40 years, in which I am also involved. The changing profiles of student athletes at various types of schools will be examined, as will trends in their academic performance (compared with the performance of other students who had similar test scores), subsequent life histories, and the economic forces that have had such powerful effects on the recruitment of these students and the organization of the entire athletic enterprise. A correlative study completed by two social psychologists, Nancy Cantor of the University of Michigan and Deborah Prentice of Princeton, draws on intensive case studies of sophomores at Amherst, Columbia, and Princeton. Their initial findings are reported in a paper titled "The 'Scholar-Athlete' and Participation in the Life of the Institution: Integration or Isolation." They now intend to extend this study to include both a large state university and later years in college.

Science, technology, and university-industry relationships. Paul David at Stanford is studying university-industry connections, and Richard Nelson and Michael Crow at Columbia, Nathan Rosenberg at Stanford, and David Mowrey at the University of California at Berkeley are jointly studying the patenting of university scientific and technological research.

Philanthropy. Charles Clotfelter of Duke University is investigating the factors associated with patterns of giving by alumni/ae at some of the academically selective colleges and universities included in the College and Beyond database; he is taking into account both the overall level of giving and restricted gifts in an effort to learn, for example, whether participants in intercollegiate athletics have been more likely than other students to target their gifts. Gordon Winston of Williams College is using financial aid records available at Williams to study the relationship between financial support provided to undergraduates and their subsequent willingness to make donations to their college. Abigail Payne and Aloysius Siow at the University of Toronto are studying the characteristics of donors to institutions of higher education in Canada.

Broader Topics. John Wilson, professor of religion at Princeton and dean of the graduate school, is editing a volume of papers on religion and higher education in the United States in the 19th century, including the interplay between science and religion. Harold

Shapiro, president of Princeton University, and I have edited a series of papers that will appear in 1998 in a volume titled *Universities and their Leadership*; contributors include Martin Trow of the University of California at Berkeley, whose paper examines accountability in higher education, Oliver Fulton of Lancaster University in Britain, who has compared the academic professions in northern European countries, and Hanna Gray of the University of Chicago, who has responded to an essay by President Shapiro on trends in presidential leadership.

“Center” Grants

To answer one frequently asked question, decisions as to which externally generated research projects should be supported by the Foundation are made in several ways. Most grants in support of research in higher education result from ordinary applications, which are reviewed by staff members and often by outside advisors as well. Others projects are supported through “center” grants made to institutions that are interested in developing “portfolios” of research in higher education as part of broader commitments to encourage more able scholars to work in this general field. At present, four such research centers are being supported by the Foundation:

- *The National Bureau of Economic Research*, under the leadership of Martin Feldstein, has stimulated much excellent research in the economics of higher education. The studies by Caroline Hoxby and Charles Clotfelter referred to above were carried out under grants made to the NBER. Also, the NBER has convened annual meetings of individuals working in this and related areas.
- *Williams College* has been an exceptionally productive center of both faculty and student research in higher education. The work of Michael McPherson and Morton Schapiro, and the new work of Gordon Winston and his colleagues, grow out of the activities of this center. A 1997 grant to Williams provides support for both the research of Winston referred to above and studies of “peer effects” on learning being carried out by a social psychologist, Alan Goethals, and an econometrician, David Zimmerman.

- Initial grants were made in 1997 to two new centers. One is Macalester College, which expects to continue and expand upon the work done earlier at Williams College by McPherson and Schapiro. In particular, Macalester intends to organize bi-annual conferences of researchers and administrators, with each conference to focus on a well-defined topic and to lead to publications of refereed articles and books. Projected topics include enrollment management and, as already noted, cost-effective uses of technology in teaching.
- The second new center is the University of Virginia's Curry School of Education, where Dean David Breneman and Sarah Turner, assistant professor of education and economics, have established the Virginia Project on the Economics of Higher Education. Faculty members at Virginia plan to study a range of topics including the evolving role of community colleges; the effects of specific Federal aid programs (such as Pell grants and loan programs) on enrollment of economically disadvantaged students and their persistence in college; differences between men and women in choice of major, postbaccalaureate study, and occupational choice; and the distribution of subsidies and costs in public higher education.

The College and Beyond Database

Many of the specific studies just outlined are likely to be useful and illuminating. Yet, it is entirely possible that the creation of the College and Beyond database will prove to be the most lasting contribution of the Foundation to research in higher education. This database was built by the staff of the Foundation, under the leadership of James Shulman and Thomas Nygren, over roughly three years (from 1995 through 1997). It will eventually contain the records of approximately 90,000 undergraduate students who matriculated at 34 academically selective colleges and universities in 1951, 1976, and 1989. The close cooperation of the participating colleges and universities was essential to its construction, and we would like to record here our appreciation for the efforts of all those who worked so hard to provide the information incorporated in it. Created on the explicit understanding that the Foundation would not release or publish data that identified either individual students or individual schools, it is a "restricted access database." As we note

below, this attribute affects the conditions under which it can be used.

Broadly speaking, the database has three components.

- First, there is the “in-college” component, compiled from individual student records in collaboration with the participating colleges and universities. For each matriculant, the database contains information available when the student was admitted, as well as records of grades in college and participation in athletics and time-intensive extracurricular activities.
- The second component is survey data, compiled for the Foundation by Mathematica Policy Research under the direction of Geraldine Mooney. For many of these same matriculants we have detailed information describing their post-college histories, how they now assess their experiences in college, and how satisfied they have been with their lives after college. Finally, for the ‘89 matriculants only, the survey provided information on the extent to which they interacted with individuals of different races, political outlooks, socio-economic backgrounds, and geographic origins.
- The third component of the database consists of sets of linked records obtained from other sources. For example, Alexander Astin and his colleagues at UCLA have enabled us to link information about pre-collegiate aspirations obtained through their surveys conducted in the fall of 1976 and the fall of 1989. Similarly, through the cooperation of the College Board and the Educational Testing Service, we have been able to link background information provided by students when they filled out the Student Descriptive Questionnaire at the time they took their SAT tests.

The presidents of the 34 participating colleges and universities have agreed that, under proper safeguards, the College and Beyond database should be used to address what will surely be perennial issues facing the kinds of colleges and universities represented within it. Accordingly, the Foundation has formed an advisory committee to guide it in developing policies for access to the database, in evaluating applications for access, and in constructing methods of protecting the absolute confidentiality of information

provided by both individuals and institutions. The members are Michael McPherson, president of Macalester College, chairman; Alan Krueger, Bendheim Professor of Economics and director of the Survey Research Center at Princeton University; and David L. Featherman, professor of sociology and director of the Institute for Survey Research at the University of Michigan. While we regret having to be somewhat bureaucratic, our lawyers have advised strongly that any scholar approved by the advisory committee to use the database (as well as representatives of his or her home institution) must comply with unusually stringent procedures to assure confidentiality. The individual with overall responsibility for responding to inquiries concerning the database is Richard E. Quandt, a Senior Advisor to the Foundation.

The experience of building the database has reminded us again of the good fortune the Foundation has enjoyed, over many years, in having the trust of many members of the academic community. It is a privilege to be able to work so cooperatively, and in such good spirit, with others who share common objectives.

William G. Bowen
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LIBERAL ARTS COLLEGES PROGRAM

Teaching and Technology: 1993–1997

Alice F. Emerson and Elizabeth A. Duffy

Over the last five years, the Foundation's liberal arts colleges program has focused on helping a select group of institutions¹ incorporate the use of technology and electronic scholarly materials into teaching and learning. In 1993, when this initiative was inaugurated, many colleges were trying to deal with intensified competition for students, changing financial aid practices, public pressure to reduce tuition, and escalating costs, especially in areas such as library materials and electronic technology. Given these circumstances, the Foundation encouraged colleges to consider ways in which they might improve teaching in cost-effective ways through the use of technology and collaboration.

From 1993 to 1998, the Foundation made 69 grants to liberal arts colleges, totaling \$35 million, through its teaching and technology initiative. Of these grants, 41 supported general teaching projects; 19 were for foreign language teaching projects; and nine went to other projects. Two-thirds of the grants (totaling \$11.6 million) went to individual colleges, and one-third (totaling \$18.7 million) were awarded to collaborative ventures involving 53 institutions.

During the period of this initiative, attitudes about the role technology should play in liberal arts colleges changed as did the ways in which students and faculty members used electronic materials. Early responses to the program revealed enormous disparities among liberal arts colleges in their readiness to use technology in teaching (especially outside of the sciences). Faculty members at a small number of colleges were well advanced both in developing electronic teaching materials and in experimenting with alternative methods of teaching, often involving electronic communication

1. The Foundation works primarily with liberal arts colleges that enroll at least 1,000 full-time students, have mean combined freshman SAT scores in excess of 1100 after recentering, and award more than 75 percent of their degrees in traditional arts and science fields.

with and among students. Their activities were supported by well-equipped electronic classrooms, good technical support, and campus electronic communication networks (the World Wide Web was not yet in common use). At many other colleges, the use of electronic resources in teaching was minimal, the necessary facilities and support were absent, and programs for training faculty members in the use of electronic materials were not in place. Moreover, many faculty members and academic deans were skeptical about the value of technology, especially in view of its high costs, and were reluctant to encourage younger faculty members to engage in computer-based projects. Some deans even dismissed pedagogy as unimportant, characterizing as inferior any teaching which was not face-to-face. As a consequence, many liberal arts colleges were not well positioned to make proposals which would advance their academic technological capabilities or allow them to collaborate with others to the same end.

Today, virtually all of the liberal arts colleges the Foundation supports are fully networked, and the World Wide Web has become an essential form of access to a wide range of source materials and a much used vehicle for colleges, faculty members, and individuals to share information. There is now widespread recognition that new approaches to pedagogy are essential. For most colleges, the issue is no longer whether to embrace technology, but rather how—how to reorganize curricular materials and approaches to teaching and learning in and out of formal classrooms, how to ensure that faculty members and students get the training and support they need to use electronic resources effectively, how to provide appropriate access to information, how to finance continuously expanding equipment needs, and how to plan for the future.

Lessons Learned

Based on our work with colleges during the grant development process, site visits, conversations with faculty members and administrators, and written reports from grant recipients, we have learned a number of lessons about how (and how willingly) liberal arts colleges have incorporated electronic technology into their academic activities. An inventory of these lessons may be helpful to others as colleges nationwide continue to explore possibilities for expanding the uses of technology in teaching and learning and as they seek to

contain the costs associated with these activities. We have organized our comments under three general headings: 1) necessities (equipment, technical support, and faculty development), 2) transforming teaching and learning, and 3) collaboration.

Necessities: Equipment, Technical Support, and Faculty Development.

Equipment. When we began the teaching and technology initiative, many colleges were acquiring equipment on an as-needed basis. Though many had committed to a single platform, few had institutional policies about who should have access to which kinds of equipment for what purposes, how often equipment should be replaced, or how ongoing technology needs should be financed. Even colleges that understood the need for continuous replacement and upgrading often found their planning processes so slow and cumbersome that decisions about purchases became obsolete before they were implemented. This was especially the case for language lab equipment which moved from audio to video to computers in less than two years.

With the acceptance of computers as essential tools for academic (and administrative) work, liberal arts colleges began to establish campus networks and Internet connections and to make computers accessible to everyone on campus. Some of the projects the Foundation funded called for state-of-the-art equipment to make possible real-time, interactive teaching from one institution to others. These efforts brought with them serious technical problems (as well as support and maintenance difficulties), with the result that none proceeded as planned. One college, for example, which had hoped to offer a low enrollment language simultaneously to its own students and to students at a neighboring college found that the Internet was unable to deliver the sound and picture in synchrony, making it impossible to demonstrate the correct speaking of the language. A lesson to be drawn here is to avoid dependence on equipment which is too far out front, no matter what the sales representative says. Let larger, better-funded institutions go first. Pioneering with equipment is neither cost-effective nor respectful of teaching needs. Colleges seem to do best when they strive to be “leading followers”—that is, to have equipment which enables students and faculty to work with very modern, but not state-of-the-art equipment.

Technical Support. Regardless of what kind of equipment is being used, adequate technical support is essential. Colleges, we found, consistently underestimated the amount and cost of needed technical support even more than the cost of equipment. A decade ago, computing support was provided to the entire campus by a central technical support staff. Scientists, who were the main users of electronic resources, usually maintained their own equipment and provided their own technical support. When library materials started to be available in electronic form, librarians became an important source of instruction for faculty members and other users.

The rapid spread of computer use by faculty members and students and the advent of e-mail led colleges to reconfigure technical support services and to add technical experts to handle networks and programming, general resource support staff to help people learn basic computing operations, and instructional specialists to support faculty curricular initiatives. Today, instructional specialists with disciplinary training are in short supply and very costly. More and more institutions are training faculty members, students, and librarians to provide support for various academic initiatives. Nevertheless, our experience would suggest that for some time to come colleges will have to devote increasing resources to technical support for users of electronic resources.

Faculty Development. Most colleges found it necessary to offer special training to enable individual faculty members to learn basic computer skills as well as how to access electronic library resources and use the Internet. As the possibilities for creating teaching materials became clear—particularly materials involving interactive exercises which enable students to learn more on their own and at their own pace—colleges were forced to expand their resources for faculty development. Most of the requests the Foundation received noted the differences among faculty members in both technical proficiency and interest and, accordingly, asked for several kinds of support. Although there were usually at least three types of faculty members on most campuses—early adopters and innovators, willing (but less technically adept) followers, and skeptical resisters—very often, faculty development projects allocated disproportionate resources to those who were most proficient because they had ideas and projects they wished to undertake. The technically less adept faculty members were most often given instruction in basic electronic tools through workshops taught by a combination of techni-

cal support staff and highly proficient faculty members. Increasing the capabilities of the middle group of faculty members—those who were interested in incorporating electronic materials into their courses, but who did not have the skills to create them—was the most difficult kind of faculty development.

While some colleges offered support on an “as-needed” basis to any faculty member with an idea, others formed teams of faculty members, technical support staff, and librarians to redesign selected courses, and still others focused on Web page development, often involving students as technical assistants. Collaborative workshops involving faculty members in the same field from several institutions were some of the most successful, lasting, and most cost-effective faculty development efforts. Despite significant advances in this area, we believe that even now too few institutions have a vision of where they would like to be in five or ten years which informs their planning and priority setting for curriculum development and the use of electronic resources.

Transforming Teaching and Learning

In evaluating proposals, we were most interested in how the proposed programs would affect teaching and learning. Too often supporters of technology speak about electronic technology as if it is a panacea that is going to fix all that is wrong with teaching. Detractors, on the other hand, worry that the introduction of electronic materials will erode the close faculty-student interaction so prized in liberal arts colleges or even eliminate the need for some faculty positions. What we learned is that there are many concrete ways that technology can be effectively integrated into courses, but that the success and impact of these interventions depend most on the imagination and energy of faculty members and on their willingness to think anew about how students learn and what the role of faculty members should be. Below, we have grouped the many types of interventions we supported into five broad categories, according to their impact on instruction.

More Efficient Teaching. The first and simplest innovations were those that made it easier for faculty members to manage their courses. At the most basic level, this involved putting course syllabi online. Unlike paper syllabi, which are often outdated almost as soon as they are printed, electronic syllabi can be easily updated and edited throughout the semester. Many faculty members also

put their class notes online. This practice seemed to be particularly helpful in classes with complicated or technical material. Faculty members reported that when they posted lecture notes before class, students focused more on what was being said and less on scribbling everything down.

Online reading guides and quizzes were also useful. A physics professor at one college, for example, used electronic multiple-choice tests to evaluate students' comprehension of the readings before class meetings. The tests forced students to do the reading before class and enabled the professor to focus his lectures on those areas that students found most confusing. The tests also took advantage of the computer's abilities to analyze the students' responses quickly and to provide the professor almost instant feedback.

Online class discussions were another Web application that faculty members used to make teaching more efficient. Professors set up online groups to allow class discussions to spill over the allotted class time and to engage a fuller range of students. A study at one of the colleges showed that 75 percent of faculty-student interactions in class were with only four or five students. Requiring students to contribute to an online discussion group ensured that every student's ideas were heard. Faculty members reported that students' written comments were often more thoughtful and thorough than their comments in class and that the anonymity of the computer exchange led participants to respond to the quality of the ideas being presented, not the rhetorical skills or other characteristics of the speakers.

Real-Life Problems. Faculty members also developed projects that allowed students to work on real-life problems rather than on theoretical ones. At one college, for example, students in the environmental science department used a Geographic Information System program to conduct a water and vegetation audit of the campus. With help both from faculty members and building services staff, students developed a multi-layered map of the campus which included information on everything from trees to plantings, from water run-off to maintenance and watering costs. The students then used their map to recommend environmentally positive changes. One proposal—to replace the grass in the main quad with native vegetation—met with strong resistance. The students were not dissuaded; they simply added a political layer to their map of forces affecting the environment.

A professor of political science at another college drew on real-time Web materials in a class on politics and the press. Students were asked to compare actual Congressional hearings with press accounts of them. Such comparisons provided students with powerful instruction in perspective, selectivity, and bias in the press.

The Web also proved useful to professors who assigned students final online projects rather than traditional papers. Knowing that their work would be posted on the Web for anyone to see and comment on, students were far less likely to wait until the last minute to produce their final papers. The results were significantly better; indeed, many professors were amazed by the quality of students' final online projects.

Many other uses of the Web or other computer applications allowed students to work with real, rather than canned data, and on real, rather than made-up, problems. In general, students seemed strongly motivated to work on projects that they perceived as having real consequences and relevance. In addition, working on real life problems helped students understand better the complexity and politics of problem-solving and decision making.

Asynchronous Learning. Electronic technology also permitted asynchronous learning—that is, it enabled students to learn at different times, places, and rates. The online class discussion groups were the simplest example of learning taking place at different times. As one faculty member commented, “Students and faculty have totally different schedules. They’re asleep when I’m awake and vice-versa. My class listserv got the most hits between 1 am and 3 am, when I was fast asleep.”

Faculty members experimented with teaching students simultaneously at more than one location. Typically, such teaching took place in small, advanced classes which attracted too few students on any one campus to justify offering a class. Although, as mentioned above, many of these experiments were initially delayed by technical or scheduling problems, when the classes were offered, students seemed to adjust easily to the equipment and to relish the opportunity to meet other advanced students in their discipline, either in person or virtually. During one of our site visits, a French faculty member spoke eloquently of the importance of the few majors in her department interacting with advanced students from elsewhere. It was her experience that some classes are stronger than others, and that it was especially important for students in a weak

year to interact with and be challenged by strong students from another campus.

Some asynchronous learning projects were explicitly developed to deal with the differences in students' preparation. One college, for example, developed a self-paced Spanish track, featuring electronic materials and sessions with native speakers, to cope with the influx of students seeking to study basic Spanish after a new language requirement was introduced. This track served both beginners and students who had taken some Spanish in high school but not enough to meet the college requirement.

Doing Science/Doing Art History. Technology also has the capacity to allow students to “do a subject” rather than simply read about it. Perhaps the most pervasive use of this approach to technology that we found was in calculus, a subject that has been completely overhauled by the development of sophisticated graphing calculators and computer programs. Rather than solving hundreds of stand-alone derivatives and integrals, students today are typically required to use calculus concepts to solve problems. Students in one introductory calculus class we visited, for example, were using an epidemic model to determine how long it would take the number of people infected by a disease to peak.

Scientists have also been quick to embrace technologies that enable students to investigate problems on their own rather than merely to follow exhaustive, cookbook-like instructions from lab manuals. To cite just one example: in traditional labs on plant morphology, students spent hours looking through an electron microscope painstakingly counting and measuring cells. Despite their best efforts, most students' results were inconclusive. When the microscopic images were digitized and put on a computer, it was relatively easy to count the cells, measure their width and length, and analyze other cellular differences that may have accounted for the plants' morphological differences—the main point of the lab exercise.

Such applications of technology were not limited to math and science. Faculty members in one art history department we visited were initially reluctant to use digitized versions of slides. The first year they merely reproduced the slides available in the slide study room on the campus network. They quickly discovered that the current generation of students has a high degree of visual literacy and can readily make sophisticated associations among paintings when

working with digitized materials that can be viewed in any order rather than with prints mounted on a wall in a prescribed order. The professors revised the course to exploit these newly discovered abilities. Three years later, the majority of the final exam required students to analyze paintings they had not studied, something that art historians do all the time, but that only the best beginning students had been able to do before the slides were available electronically.

Student/Faculty Interactions. The relationships between faculty members and students changed significantly in courses involving electronic technology. Traditionally, faculty members have been the holders and imparters of knowledge and students the receivers of that knowledge. The integration of technology into the curriculum challenged that paradigm in profound ways. It encouraged many faculty members to reconsider how they teach and from whom they learn. An accounting professor at one college described how he completely revamped his course when he moved it from a traditional classroom to a computer classroom. Rather than lecturing, he assigned problems in class, using real financial statements, to small groups of students and roamed the room coaching each group and periodically demonstrating a concept or solution on the front screen. This same professor found that collecting homework assignments over the network allowed him to diagnose much more quickly and effectively students' mistakes and difficulties. Other faculty members found themselves in the role of student as they learned to use new technologies. Increasingly, colleges are using students, many of whom now come to college with considerable technical skills, as coaches and tutors to faculty members.

The use of electronic materials has also increased students' learning from peers. In some writing classes, for example, students submitted their essays online not just to the teacher but also to each other. In other classes, online tutoring services were established to provide writing assistance. Faculty members reported that students learned as much from editing each other's papers as from writing their own and that this process of group writing and editing reflected much better the kind of writing that would be expected from their students in the workplace. These innovations, like many others just described, did not require the use of technology (students could have made multiple copies of their papers and distributed them in class or to their tutors) but the presence of even a

modest computer network facilitated the process and motivated student participation.

We could give many other examples of how the creative use of technology has influenced teaching and learning. The overall lesson from the many projects the Foundation supported is that the power of electronic materials is not primarily in the technology but rather in its capacity to get faculty members to rethink how students learn best and how their own time and expertise can be used most productively. Good technology projects don't have to be high tech; in fact they usually are not. Stephen Ruth, the director of a project at George Mason University that the Foundation is also supporting, summed up the pedagogical impact of technology well in a paper he wrote about a very successful information science class he taught using "everything but the technological equivalent of the kitchen sink." Was technology the reason the students did so well? Only partly, he concludes. "If the learning process were Shakespeare's *Hamlet*, technology would not be the prince, or Ophelia, or the queen or the evil uncle. It would have a role like Rosencrantz and Guildenstern, definitely a player but a bit player, not a star."²

Collaboration.

Concern about the rising costs confronting liberal arts colleges led the Foundation in 1989 to establish a program encouraging consolidation and financial efficiencies at these institutions. When the teaching and technology initiative began four years later, most institutions had done what they thought they could on their own to control spending. One of the few remaining opportunities for reducing costs lay in collaborating with other colleges to improve academic programs and reduce costs through economies of scale, joint activities, and sharing of resources. While most of the colleges with which we worked had participated in library consortia, relatively few were engaged in collaborative curricular efforts. We encouraged existing consortia and newly forming groups to submit collaborative proposals for cost-effective uses of technology in teaching. Ultimately, the Foundation supported projects undertaken by eight previously established consortia and nine new collaborations. While all of these projects are ongoing, several provide

2. Ruth, Stephen, "Technology in the Classroom: Hamlet or Rosencrantz and Guildenstern?," George Mason University, 1996.

instructive examples of activities and outcomes, and, as a group, these endeavors offer a number of potential lessons.

Reasons for success or failure of institutional collaborations are complex. From our experience, it seems clear that neither the number of colleges participating in a consortium nor the length of time a consortium has been in existence is a critical variable. Indeed, among the most successful the Foundation supported were three new academic collaborations. Even geographic proximity is not essential in this electronic era. One consortium that extends from Virginia to Texas, for example, has developed and implemented an impressive series of library and faculty development projects over the last few years. We have also learned that a successful collaboration in one project is no guarantee of further success in consortial efforts by the same institutions. Much depends on leadership, trust, and participants who are intent on doing something worthwhile together. A project that is highly valued, which has strong leadership, senior administrative support, and appropriate resources, has a very high chance of achieving its objectives.

Even when conditions were favorable, unforeseen problems often arose during implementation of collaborative projects. A number of the language consortia, for example, suffered setbacks and delays because they could not hire appropriate directors or technical support staff to work at several institutions on joint projects. Selecting the right equipment and getting it installed were also stumbling blocks, made all the more difficult by different procurement policies and procedures at collaborating institutions.

Although almost all the collaborative projects the Foundation supported are still ongoing, a number of positive outcomes are already apparent. Foreign language faculty members from several institutions, working together and sharing their results, have created valuable teaching materials which are being used to good effect by students on multiple campuses. For many faculty members, collaboration has also provided much appreciated opportunities to expand their circle of colleagues, to discuss pedagogy, to create new teaching materials jointly, and, in some cases, to undertake collaborative research. Such opportunities have been especially valuable to teachers of Chinese and Japanese, many of whom are the only ones teaching these languages at their colleges.

Middlebury. The most far reaching collaboration supported by the Foundation is centered at Middlebury College. "Project

2001”—a five-year program intended to demonstrate that technology provides foreign language instructors with a means to become more effective teachers—has become a powerful focal point for developing new approaches to foreign language teaching and for expanding the impact of collaborative work in a national consortium.

In the fall of 1993, we received virtually identical requests from several colleges interested in utilizing technology to address problems related to the teaching of foreign language. At that time, foreign language departments were grappling with low and shifting enrollment patterns, increased interest in culture rather than literature, growing participation in study abroad programs, demands for a wider range of foreign language offerings (especially less commonly taught Asian and African languages), the presence of many part-time and adjunct faculty members in foreign language departments, and little faculty interest in teaching elementary courses. Each college proposed to hire a technology expert to work with faculty members. We decided to explore possibilities for meeting this need on a collaborative basis and consulted with Dr. Clara Yu, then vice president for languages and director of the language schools at Middlebury College. With Dr. Yu's encouragement, we invited deans and foreign language faculty members from several institutions to talk with each other and with Dr. Yu about ways of increasing faculty members' technological skills and improving foreign language teaching through collaboration. In the summer of 1994, a workshop was offered at Middlebury for faculty members from nine colleges. It aimed to introduce the fundamentals of technology through intensive hands-on instruction, to explore the uses of technology in language teaching, and to discuss pedagogical issues more generally. Participant response is well summed up by the following comment drawn from a faculty member's evaluation statement: "Technical training is the cornerstone, but what is even more valuable is the experience of *working on a project in a team* where we learned by talking out our ideas with fellow workshopers."³

The summer workshop provided faculty members with much more realistic ideas about what they might accomplish using technology and enabled them to work with potential collaborators. Following the workshop, the participating colleges formed three con-

3. Interim report from Middlebury College, April 6, 1996.

sortia, each of which submitted a collaborative proposal. In addition, Middlebury established FlanNet (a closed foreign language network capable of supporting the transfer of materials and electronic conferencing in many languages) to provide an ongoing means of communication for faculty workshop participants and to enable them to continue their cooperative activities after returning to their home campuses.

Based on the success of the first Middlebury summer workshop, workshops were held in the two succeeding summers for faculty and technical staff members from an additional 33 colleges. Middlebury staff also provided other services, among them technical assistance, campus consultations, advanced faculty workshops, access to FlanNet, and ongoing support for workshop participants. A major outcome of the workshops has been the creation of 17 foreign language projects involving 33 colleges (9 collaborations and 8 individual college projects) for technology-enhanced instruction.

To take stock of what had been accomplished, in June 1997 a conference was convened at Middlebury to showcase the work of the project participants and to encourage further dialogue about issues of language pedagogy. Over 200 faculty members, technical staff, and administrators attended, representing 62 colleges. The range and sophistication of the work presented and the energy and excitement of the participants gave clear evidence of the power of this multi-layered collaborative project. As Dartmouth's director of humanities resources, Otmar Foelsche, an independent evaluator of the conference, said in his report, "It is difficult to describe the excitement accompanying these presentations. One can literally see and hear participants thinking about transfer of ideas and technologies to their own work." The conference is "a milestone in the history of language teaching."

Project 2001 was also launched at the conference. At the end of the project's five-year term, a self-sustaining network of faculty members and technical staff from over 60 leading liberal arts colleges should be in place, foreign language teaching should have been transformed at participating colleges, and many more students should be learning and using languages more effectively and engagingly.

Appalachian College Association. One more consortial effort merits special mention. Founded in 1990, the Appalachian College Association (ACA) is comprised of 33 private liberal arts colleges in

Kentucky, North Carolina, Tennessee, Virginia, and West Virginia that enroll a total of approximately 32,000 students. The ACA administers fellowship programs to support faculty members completing PhDs, postgraduate research, and student-faculty research activities. The Foundation has made five grants to the ACA, totaling \$8 million, since 1993.

Beginning in 1994, the ACA led an effort to encourage deans and faculty members to develop collaborative projects to use technology in teaching, information retrieval, and other academic activities. Because many of the ACA colleges are small and geographically remote, faculty members, especially in the humanities and social sciences, have had few opportunities to work with disciplinary colleagues. Through a series of introductory workshops offered to faculty members with limited computer skills and follow-up sessions matching participants with more technically experienced faculty in their fields, the ACA project was able both to increase the technical capacity of faculty members and to establish ongoing collegial relationships among them. The ACA also sponsored curriculum development projects by multi-institutional teams of faculty members, librarians, and technical staff, and expert advice was made available to clusters of colleges to help them plan for future hardware and software needs. In all, more than 400 faculty members took part in this initiative.

Technical assistance and training in the use of various electronic materials has also been made available to ACA colleges by graduate students under the direction of a faculty member at Virginia Intermont. These students travel from one campus to another to advise about technical issues and serve as teaching assistants at faculty workshops.

Though many member institutions have very limited funds, they have been able to strengthen their academic programs through the ACA collaboration and to gain access to resources, training, and technical assistance no single college could afford alone. In the process, multi-institutional relationships have been established among faculty and administrators which will likely lead to further cooperative ventures. These accomplishments are in significant measure due to the work of Dr. Alice Brown, who has provided strong leadership to the ACA since its founding.

What Lies Ahead?

There is much that is still uncertain or unfinished in the introduction of technology into teaching and learning at liberal arts colleges. Changes in pedagogy resulting from the availability of new kinds of electronic materials and different tools for using them are raising questions about the way faculty members and students interact and undertake their relative responsibilities in the academy. For example, how much can or should students be expected to learn on their own or with peers outside the formal structure of traditional classes and courses? Is interactive learning via a computer screen as effective as classroom learning? What kind of instruction should take place in classrooms? How should multimedia presentations be valued relative to more traditional writing and speaking?

Faculty development issues are even more perplexing. How much command of technology should faculty members be expected to have? Must they be capable of designing and creating complex electronic materials, or is it enough that they be competent users? Is touch-screen sufficient, or is it important to understand what goes on behind the screen? And, what about faculty evaluation and reward systems? How will teaching effectiveness be evaluated in the age of electronic pedagogy? What will be valued and how will it be judged when it is time to make tenure and promotion decisions? Intellectual property issues will surely be central. Just as we are struggling to define intellectual property, the very nature of that “property” is changing. Collaborative work which has been edited and amended via electronic interactions is becoming harder to attribute to its “authors” by traditional rules. New rules are needed, but as yet we have no consensus about standards.

So far, we have said little about costs. Initially, we hoped that by insisting that the use of technology in teaching not add to the per student cost of education we could drive home the need for careful financial planning and expense reallocation to accommodate the added costs of technology. While some colleges were able to control obvious project-related costs in this way, in almost every instance the overall cost to the institution of the electronic infrastructure, technical support staff, and equipment turnover grew steadily. Attributing the costs of technology to particular projects was especially difficult as many colleges were simultaneously putting in place their basic campus technology and service infrastructures.

For most institutions, it is still early days in terms of realizing any financial payoffs from the use of technology. Once electronic infrastructures are fully installed and today's innovative practices become commonplace in libraries, in teaching and learning, and in the support and financing of the use of technology, economies may yet be realized and costs contained.

Several current projects funded by the Foundation provide examples of possible cost-effective uses of technology. At two colleges, courses were redesigned to include self-paced and student-to-student learning which permitted increases in course sizes. At another college, core departmental offerings were identified which could be taught by more than one faculty member, making it possible for faculty leaves to occur without the need for temporary replacements. One college hopes to reduce scientific capital and maintenance costs by enabling students to work with simulated and remote basic science applications drawn from the area's business and health organizations. Collaborating colleges have achieved cost efficiencies by sharing the costs of faculty training, technical support, and teaching materials, and, in some cases, by teaching one another's students. In general, the most promising opportunities for cost-effective use of technology were at institutions where there was an interest not only in using technology to enhance traditional teaching, but also a willingness to rethink the organization of teaching and to create new paradigms, especially in collaborative ventures.

Liberal arts colleges have a long and proud tradition of independence. Self-contained for the most part, no one quite like another, they do not come easily to collaboration. This is especially the case at the institutional level, where working with partners is often seen as adding unnecessary complexity, and learning from the experience of others is not viewed as the normal mode of operation. Except for a few special areas such as library consortia, the incentives for academic collaborations are few. Yet, if selective liberal arts colleges are to continue to offer the high quality education for which they are known and valued, they will have to reach out and connect in a multitude of ways with our ever-expanding world. Technology may prove to be their best ally.

The Andrew W. Mellon Foundation

Summary of Grants and Contributions, 1997

	<i>Payable and Committed at Dec. 31, 1996*</i>	<i>1997 Grants and Commitments</i>		<i>Payable and Committed at Dec. 31, 1997</i>
		<i>Appropriated</i>	<i>Paid</i>	
Conservation and the Environment.....	\$ 4,215,635	\$ 14,959,200	\$ 18,610,835	\$ 564,000
Museums and Art Conservation.....	\$ 13,910,094	\$ 5,766,000	\$ 7,718,619	\$ 11,957,475
Performing Arts.....	\$ 5,121,330	\$ 10,130,000	\$ 11,118,497	\$ 4,132,833
Higher Education and Scholarship.....	\$ 12,927,544	\$ 65,227,450	\$ 59,337,776	\$ 18,817,218
Population.....	\$ 2,286,796	\$ 10,225,000	\$ 10,135,740	\$ 2,376,056
Public Affairs.....	\$ 7,257,666	\$ 13,536,150	\$ 13,532,683	\$ 7,261,133
Program Grants & Commitments—Totals	\$ 45,719,065	\$ 119,843,800	\$ 120,454,150	\$ 45,108,715
Contributions.....	—	\$ 205,000	\$ 205,000	—
Totals.....	\$ 45,719,065	\$ 120,048,800	\$ 120,659,150	\$ 45,108,715

*Restated. Reflects cancellation in 1997 of 3 appropriations totalling \$480,000 and a grant refund restored to commitments of \$840,000.

The Andrew W. Mellon Foundation

Classification of Grants

CONSERVATION AND THE ENVIRONMENT

Appropriated

Center for Plant Conservation, Inc.,
St. Louis, Missouri:

For use as general support \$ 360,000

Cornell University,
Ithaca, New York:

Toward continued support of programs of training and
research in systematic botany 600,000

In support of ecological research and training 250,000

For ecological research and training 160,000

Toward costs of programs of ecological research and
training 115,000

Dartmouth College,
Hanover, New Hampshire:

Toward costs of programs of ecological research and
training 275,000

In support of ecological research and training 70,000

Duke University,
Durham, North Carolina:

Toward continued support of programs of training and
research in systematic botany 600,000

Toward costs of programs of ecological research and
training 225,000

CONSERVATION AND
THE ENVIRONMENT

(continued)

Appropriated

Ecological Society of America, Inc.,
Washington, DC:

Toward costs of making all of the important scientific journals in ecology and related journals in botany available to libraries and individuals using JSTOR 1,476,000

Toward costs of a program for minority students in ecology research 88,000

H. John Heinz III Center for Science, Economics
and the Environment,
Washington, DC:

Toward costs of a program of research on environmental regulation 700,000

Harvard University,
Cambridge, Massachusetts:

Toward costs of a program of ecological research and training 625,000

Toward continued support of programs in ecological research for undergraduate minority students 70,000

Hubbard Brook Research Foundation Inc.,
Riverdale, New York:

For general support 20,000

Inform, Inc.,
New York, New York:

Toward costs of continuing a collaborative conservation program with businesses 140,000

Institute of Ecosystem Studies, Inc.,
Millbrook, New York:

Toward costs of a program of ecological research and training 160,000

CONSERVATION AND
THE ENVIRONMENT

(continued)

Appropriated

Institute of Ecosystem Studies, Inc.,
Millbrook, New York:

(continued)

Toward continued support of programs in ecological
research for undergraduate minority students 55,000

In support of ecological research and training 50,000

Marine Biological Laboratory,
Woods Hole, Massachusetts:

Toward costs of a training program for undergraduate
liberal arts college students 750,000

Missouri Botanical Garden,
St. Louis, Missouri:

Toward costs of programs of botanical research and
training 800,000

Toward continued support of programs of training and
research in systematic botany 600,000

New York Botanical Garden,
Bronx, New York:

Toward costs of programs of botanical research and
training 800,000

North Carolina State University,
Raleigh, North Carolina:

Toward costs of programs of ecological research and
training 130,000

Oregon State University,
Corvallis, Oregon:

Toward costs of a program of research on coastal
processes 430,000

CONSERVATION AND
THE ENVIRONMENT

(continued)

Appropriated

Organization for Tropical Studies, Inc.,
Durham, North Carolina:

Toward costs of programs of ecological research and
training 200,000

In support of a training program for undergraduate lib-
eral arts college students 175,000

Pennsylvania State University,
University Park, Pennsylvania:

Toward costs of a program of ecological research and
training 440,000

Rancho Santa Ana Botanic Garden,
Claremont, California:

Toward continued support of programs of training and
research in systematic botany 600,000

Resources for the Future, Inc.,
Washington, DC:

Toward costs of planning a research program on envi-
ronmental regulation 41,000

Smithsonian Institution,
Washington, DC:

Toward costs of programs of ecological research and
training 225,000

Stanford University,
Stanford, California:

Toward costs of a program of ecological research and
training 250,000

United Negro College Fund, Inc.,
Fairfax, Virginia:

Toward costs of a program for minority students in
ecology research 112,000

CONSERVATION AND
THE ENVIRONMENT

(continued)

Appropriated

University of Arkansas,
Fayetteville, Arkansas:

Toward costs of a program of ecological research and
training 199,000

University of California at Berkeley,
Berkeley, California:

Toward costs of programs of ecological research and
training 280,000

University of California at Santa Barbara,
Santa Barbara, California:

Toward costs of a program of ecological research and
training 350,000

University of Colorado,
Boulder, Colorado:

Toward costs of a program of ecological research and
training 240,000

University of Florida,
Gainesville, Florida:

Toward costs of a program of ecological research and
training 140,000

University of Hawaii,
Honolulu, Hawaii:

Toward costs of a program of ecological research and
training 330,000

University of Minnesota,
Minneapolis, Minnesota:

Toward costs of a program of ecological research and
training 275,000

Toward continued support of programs in ecological
research for undergraduate minority students 55,000

CONSERVATION AND
THE ENVIRONMENT

(continued)

Appropriated

University of Nevada,
Reno, Nevada:

Toward costs of a program of ecological research and
training 188,000

University of Pennsylvania,
Philadelphia, Pennsylvania:

Toward costs of programs of ecological research and
training 480,000

University of Virginia,
Charlottesville, Virginia:

Toward costs of a program of ecological research and
training 50,000

University of Washington,
Seattle, Washington:

Toward costs of a program of ecological research and
training 170,000

Toward continued support of programs in ecological
research for undergraduate minority students 20,000

University of the Witwatersrand,
Johannesburg, South Africa:

Toward costs of a program of ecological research and
training 164,000

Woods Hole Oceanographic Institution,
Woods Hole, Massachusetts:

In support of a workshop on dredging 16,200

Woods Hole Research Center,
Woods Hole, Massachusetts:

Toward costs of a program of ecological research and
training 410,000

Total—Conservation and the Environment \$14,959,200

MUSEUMS AND
ART CONSERVATION

Appropriated

Art Institute of Chicago,
Chicago, Illinois:

Matching endowment and spendable funds to establish
a Fellowship in Photographic Conservation \$ 750,000

Balboa Art Conservation Center,
San Diego, California:

For use as endowment to support advanced conserva-
tion internships 28,000

Bowdoin College,
Brunswick, Maine:

Matching endowment for use by its museum to
strengthen the educational role of collections and
programs 375,000

Cornell University,
Ithaca, New York:

Matching endowment for use by its museum to
strengthen the educational role of collections and
programs 425,000

Harvard University,
Cambridge, Massachusetts:

Matching endowment for use by its museum to
strengthen the educational role of collections and
programs 500,000

Isabella Stewart Gardner Museum, Inc.,
Boston, Massachusetts:

Toward support of small scholarly exhibitions based
upon its permanent collection 300,000

MUSEUMS AND
ART CONSERVATION

(continued)

Appropriated

Metropolitan Museum of Art,
New York, New York:

Matching endowment to establish a new position, Conservator of Photographs; and for use toward costs of equipment for a new Photograph Conservation Laboratory, and of program management and photograph conservation during the transition period 1,500,000

Oberlin College,
Oberlin, Ohio:

For use by its museum to strengthen the educational role of collections and programs 185,000

Smith College,
Northampton, Massachusetts:

Matching endowment for use by its museum to strengthen the educational role of collections and programs 500,000

Smithsonian Institution,
Washington, DC:

For use by its Freer and Arthur M. Sackler Galleries in support of a research program in the materials and structures of East Asian paintings 600,000

University of Chicago,
Chicago, Illinois:

For use by the David and Alfred Smart Museum of Art to strengthen the educational role of its collections and programs 178,000

Williams College,
Williamstown, Massachusetts:

Matching endowment for use by its museum to strengthen the educational role of collections and programs 425,000

Total—Museums and Art Conservation \$5,766,000

PERFORMING ARTS *Appropriated*

Actors Theatre of Louisville, Inc.,
Louisville, Kentucky:

To support its artistic development \$ 150,000

Alliance of Resident Theatres/New York, Inc.,
New York, New York:

To strengthen specific aspects of the institution 150,000

American Composers Forum,
St. Paul, Minnesota:

Toward costs of its National Services Initiative 50,000

American Composers Orchestra, Inc.,
New York, New York:

To support its artistic development and to strengthen
its administrative capacity 250,000

American Conservatory Theatre Foundation,
San Francisco, California:

To support its artistic development and to strengthen
its administrative capacity 300,000

Toward costs of development of its theater training
program 250,000

American Music Center Inc.,
New York, New York:

Toward costs associated with its leadership transition . . 50,000

American Repertory Theatre Company, Incorporated,
Cambridge, Massachusetts:

Toward costs of development of its theater training
program 200,000

To support its artistic development 200,000

PERFORMING ARTS

(continued)

*Appropriated*American Symphony Orchestra League,
Washington, DC:

For planning, increased fundraising activity, and expenses associated with a transition in leadership	200,000
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Appalshop, Incorporated,
Whitesburg, Kentucky:

To support the theater's artistic development	80,000
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Atlantic Theater Company,
New York, New York:

To support its artistic development	50,000
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Bay Group International,
San Francisco, California:

Toward costs of development and management of the Foundation's orchestra forum	250,000
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Toward costs of planning the Foundation's orchestra forum	50,000
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Berkeley Repertory Theatre,
Berkeley, California:

To support its artistic development	175,000
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Boston Baroque, Inc.,
Cambridge, Massachusetts:

To support the orchestra's artistic development and to strengthen its administrative capacity	125,000
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Brooklyn Philharmonic Symphony Orchestra, Inc.,
Brooklyn, New York:

Toward costs of participation in the orchestra forum . .	25,000
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Center Stage Associates, Inc.,
Baltimore, Maryland:

To support the theater's artistic development and its Associate Artist program	240,000
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PERFORMING ARTS

(continued)

Appropriated

Chicago Theatre Group, Inc., Chicago, Illinois:	
To support its artistic development	300,000
City of Birmingham Symphony Orchestra, Birmingham, England:	
Toward costs of participation in the orchestra forum . .	25,000
Concordia: A Chamber Symphony, Inc., New York, New York:	
To support its artistic development	50,000
Connecticut Players Foundation, Inc., New Haven, Connecticut:	
To support artistic programming and initiatives during a transition in leadership	50,000
Cornerstone Theater Company, Inc., Santa Monica, California:	
To support the creation of new work	30,000
Crossroads Inc., New Brunswick, New Jersey:	
To support the Genesis Festival of New Plays	50,000
CSC Repertory LTD, New York, New York:	
To support the theater's artistic development	75,000
Dance Theatre Workshop, Inc., New York, New York:	
For use as general support	100,000
Fort Wayne Philharmonic Orchestra, Inc., Fort Wayne, Indiana:	
Toward costs of participation in the orchestra forum . .	25,000

PERFORMING ARTS

(continued)

*Appropriated*George Coates Performance Works,
San Francisco, California:

To support workshops for artistic staff 25,000

Guthrie Theatre Foundation,
Minneapolis, Minnesota:

To support its Company Development Program 300,000

Handel & Haydn Society,
Boston, Massachusetts:To support the orchestra's artistic development and
strengthen its administrative capacity 200,000Hartford Stage Company, Inc.,
Hartford, Connecticut:

To support large-scale productions 175,000

Hartford Symphony Orchestra, Inc.,
Hartford, Connecticut:

Toward costs of participation in the orchestra forum . . 25,000

Intiman Theatre,
Seattle, Washington:

To support its NewVoices program 100,000

John F. Kennedy Center for the Performing Arts,
Washington, DC:

To support the Fund for New American Plays 200,000

Juilliard School,
New York, New York:Toward costs of development of its theater training
program 250,000Kansas City Symphony,
Kansas City, Missouri:

Toward costs of participation in the orchestra forum . . 25,000

PERFORMING ARTS

(continued)

Appropriated

Los Angeles Chamber Orchestra Society, Inc.,
Los Angeles, California:

To strengthen its administrative capacity 100,000

Manhattan Class Company, Inc.
New York, New York:

To support the theater's artistic development 50,000

Manhattan Theatre Club, Inc.,
New York, New York:

To support its artistic development 125,000

McCarter Theatre Company,
Princeton, New Jersey:

To support its New Play Development Program 240,000

Meet The Composer Inc.,
New York, New York:

Matching endowment and spendable grant toward
costs of strengthening governance, management, and
fundraising 400,000

Music of the Baroque,
Chicago, Illinois:

To support the orchestra's artistic development and to
strengthen its administrative capacity 125,000

Music-Theatre Group, Inc.,
New York, New York:

To support its artistic development 40,000

New 42nd Street, Inc,
New York, New York:

To support expenses of dance and theater organizations
engaged to perform in the theater 50,000

PERFORMING ARTS

(continued)

Appropriated

New Jersey Symphony Orchestra,
Newark, New Jersey:

Toward costs of participation in the orchestra forum . . . 25,000

New World Symphony Inc.,
Miami Beach, Florida:

To support long-range planning 50,000

New York Shakespeare Festival,
New York, New York:

To support the LuEsther Laboratory 200,000

New York Theatre Workshop, Inc.,
New York, New York:

To support its artistic development 75,000

Oregon Symphony Association,
Portland, Oregon:

Toward costs of participation in the orchestra forum . . . 25,000

Orpheus Chamber Orchestra, Inc.,
New York, New York:

To support its New York City activities 180,000

Perseverance Theatre Incorporated,
Douglas, Alaska:

To support the Alaska Conservatory 65,000

Philharmonia Baroque Orchestra,
San Francisco, California:

To support artistic programming, research, and educa-
tional activities 150,000

Playwrights Horizons Inc.,
New York, New York:

To strengthen its artistic development and strengthen
its administrative capacity 75,000

PERFORMING ARTS

(continued)

*Appropriated*Portland Baroque Orchestra,
Portland, Oregon:

To support its artistic development and strengthen its administrative capacity	100,000
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Pregones Touring Puerto Rican Theatre
Collection Inc.,
New York, New York:

To support its artistic development	30,000
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Primary Stages Company Inc.,
New York, New York:

To support its artistic development	40,000
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Pro Arte Chamber Orchestra of Boston Inc.,
Cambridge, Massachusetts:

To support its artistic development and strengthen its administrative capacity	100,000
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Richmond Symphony,
Richmond, Virginia:

Toward costs of participation in the orchestra forum . .	25,000
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Riverside Symphony, Inc.,
New York, New York:

To strengthen specific aspects of the institution	150,000
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Roundabout Theatre Company, Inc.,
New York, New York:

To support artistic programming	200,000
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Saint Paul Chamber Orchestra Society,
St. Paul, Minnesota:

In support of its Music on the Move series	125,000
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Toward costs of participation in the orchestra forum . .	25,000
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PERFORMING ARTS

(continued)

*Appropriated*Seattle Repertory Theatre,
Seattle, Washington:

To support its artistic development 175,000

Seattle Symphony Orchestra, Inc.,
Seattle, Washington:

Toward costs of participation in the orchestra forum 25,000

Second Stage Theatre, Inc.,
New York, New York:

To support its artistic development 50,000

Shakespeare Theatre,
Washington, DC:

To support its artistic development 275,000

Signature Theatre Company, Inc.,
New York, New York:

To strengthen its administrative capacity 50,000

South Coast Repertory, Inc.,
Costa Mesa, California:To support the commissioning of new work and the
Pacific Playwrights Festival 175,000Spanish Theatre Repertory Company, Ltd.,
New York, New York:

To support its artistic development 150,000

St. Lukes Chamber Ensemble, Inc.,
New York, New York:

To support artistic programming 180,000

Stevens Group,
St. Paul, Minnesota:Toward costs of planning and development of the
Literary Publishers Alliance 50,000

PERFORMING ARTS

(continued)

Appropriated

Theatre and Arts Foundation of San Diego County, La Jolla, California:	
To support the theater's Developmental Works program	150,000
Theatre Communications Group, Inc., New York, New York:	
In support of improvements of its information manage- ment system	200,000
Theatre de la Jeune Lune, Minneapolis, Minnesota:	
To support artistic and development staff	100,000
Theatre For a New Audience, Inc., New York, New York:	
To support its Artistic Growth Fund	150,000
Trinity Repertory Company, Providence, Rhode Island:	
To support artistic staff and new play development . . .	100,000
Vineyard Theatre and Workshop Center Inc., New York City, New York:	
To support its audience services program	50,000
Vivian Beaumont Theater, Inc., New York, New York:	
To support the production of large-scale plays and musicals	250,000
Workshop of the Players Art Foundation, New York, New York:	
To strengthen the theater's administrative capacity	30,000

PERFORMING ARTS

(continued)

Appropriated

Yale University,
New Haven, Connecticut:

Toward costs of development of the Yale School of Drama's training program	250,000
To support the artistic development of the Yale Reper- tory Theatre	150,000
Total—Performing Arts	<u><u>\$10,130,000</u></u>

HIGHER EDUCATION
AND SCHOLARSHIP

Appropriated

Allegheny College,
Meadville, Pennsylvania:

To support the College's efforts to establish a long-
range planning process \$ 39,000

American Antiquarian Society,
Worcester, Massachusetts:

Matching endowment towards costs of improving the
care and management of library collections 600,000

American Council of Learned Societies,
New York, New York:

Matching endowment of its Fellowship Program 5,000,000

In support of the ACLS/SSRC International Postdoc-
toral Fellowships Competition 50,000

To support transition activities in the office of the
president 50,000

American Jewish Historical Society,
New York, New York:

Toward costs of planning the co-location and integra-
tion of its library with the libraries of the Leo Baeck
Institute and YIVO 30,000

American Philosophical Society,
Philadelphia, Pennsylvania:

In support of costs of improving the care and manage-
ment of library collections 600,000

American Political Science Association,
Washington, DC:

Toward costs of making available online the papers of
its annual meeting 12,000

HIGHER EDUCATION
AND SCHOLARSHIP

(continued)

Appropriated

Amherst College,

Amherst, Massachusetts:

In support of postdoctoral fellowships 415,000

Toward costs of improving foreign language instruction
and achieving greater cost-effectiveness 365,000

Appalachian College Association, Inc.,

Berea, Kentucky:

Endowment of faculty fellowships and grants 2,000,000

To improve student and faculty access to electronic
networks and databases at selected Appalachian
colleges 1,800,000

Auburn University,

Montgomery, Alabama:

For use in support of seminars in literature and
history for graduate students preparing to write their
dissertations 54,000

Bard College,

Annandale-on-Hudson, New York:

Toward costs of improving foreign language instruction
and achieving greater cost-effectiveness 300,000

Barnard College,

New York, New York:

For use to improve educational effectiveness and to
gain financial efficiencies 315,000

Bates College,

Lewiston, Maine:

For use to improve educational effectiveness and
to gain financial efficiencies, in collaboration with
Bowdoin and Colby Colleges 975,000

HIGHER EDUCATION
AND SCHOLARSHIP

(continued)

Appropriated

Brandeis University,
Waltham, Massachusetts:

In support of a program of postdoctoral fellowships . . . 650,000

Brown University,
Providence, Rhode Island:

For use in support of seminars in literature and
history for graduate students preparing to write their
dissertations 40,000

Bryn Mawr College,
Bryn Mawr, Pennsylvania:

Toward support of a project to revise the core
curriculum 50,000

Toward costs of collecting data for the Foundation's
"College and Beyond" study 3,500

Carleton College,
Northfield, Minnesota:

For use to improve educational effectiveness and to
gain financial efficiencies 350,000

Case Western Reserve University,
Cleveland, Ohio:

For use in support of seminars in literature and
history for graduate students preparing to write their
dissertations 43,000

Colgate University,
Hamilton, New York:

For use to improve educational effectiveness and to
gain financial efficiencies 315,000

HIGHER EDUCATION
AND SCHOLARSHIP

(continued)

Appropriated

College of the Holy Cross,
Worcester, Massachusetts:

For use to improve educational effectiveness and to
gain financial efficiencies 350,000

College of William and Mary,
Williamsburg, Virginia:

For use in support of seminars in literature and
history for graduate students preparing to write their
dissertations 86,000

Colonial Williamsburg Foundation,
Williamsburg, Virginia:

Toward costs of planning for digitization of its library
and archaeology collections 15,000

Columbia University,
New York, New York:

To improve the quality and effectiveness of graduate
education within selected departments of the humani-
ties and related social sciences while reducing time-to-
degree and attrition rates 670,000

For use by its Media Center for Art History for core
support, the production of curricular materials, a series
of summer institutes, and the development of an online
consortium for liberal arts college faculty 450,000

Toward costs of improving foreign language instruction
and achieving greater cost-effectiveness 375,000

Toward costs of archiving the papers of William Vickery 15,000

Commission on Preservation and Access,
Washington, DC:

Toward costs of digitization training and study at US
institutions by representatives of Saint Catherine's
Monastery in Sinai 26,000

HIGHER EDUCATION
AND SCHOLARSHIP

(continued)

Appropriated

Connecticut College,
New London, Connecticut:

For use to improve educational effectiveness and to
gain financial efficiencies 400,000

Cornell University,
Ithaca, New York:

To improve the quality and effectiveness of graduate
education within selected departments of the humani-
ties and related social sciences while reducing time-to-
degree and attrition rates 670,000

Council of American Overseas Research Centers,
Washington, DC:

In support of a program of short-term research residen-
cies for Czech, Hungarian, Polish, and Slovak humani-
ties scholars at institutes for advanced study located in
Western Europe 1,800,000

Davidson College,
Davidson, North Carolina:

In support of the College's efforts to integrate technol-
ogy into the teaching of foreign languages 47,500

Duke University,
Durham, North Carolina:

Matching endowment to support teaching and research
in Latin American studies 800,000

Toward costs of a study of patterns of alumni financial
contributions to selective colleges and universities 105,000

Eleutherian Mills-Hagley Foundation,
Wilmington, Delaware:

Matching endowment of costs of improving the care
and management of library collections 1,000,000

HIGHER EDUCATION
AND SCHOLARSHIP

(continued)

Appropriated

Emory University,
Atlanta, Georgia:

In support of Sawyer Seminars which treat the historical and cultural sources of significant contemporary developments 200,000

Toward costs of a conference on libraries, technology, and scholarly communication 95,000

Folger Shakespeare Library,
Washington, DC:

Toward costs of improving the care and management of library collections 600,000

Foundation for Independent Higher Education, Inc.,
Chicago, Illinois:

Toward costs of a study of "lessons learned" from cost-saving collaborative activities 50,000

Grinnell College,
Grinnell, Iowa:

Toward costs of improving foreign language instruction and achieving greater cost-effectiveness 315,000

Hampshire College,
Amherst, Massachusetts:

Toward costs of improving foreign language instruction and achieving greater cost-effectiveness 150,000

Harvard University,
Cambridge, Massachusetts:

Matching endowment of costs of improving the care and management of library collections at Villa I Tatti . . . 900,000

To improve the quality and effectiveness of graduate education within selected departments of the humanities and related social sciences while reducing time-to-degree and attrition rates 670,000

HIGHER EDUCATION
AND SCHOLARSHIP

(continued)

Appropriated

Harvard University,
Cambridge, Massachusetts:

(continued)

Toward costs of research on early admissions programs at highly selective undergraduate institutions	150,000
Toward costs of research on the implications of using “class-” as opposed to race-based policies in college admission, and on the effects of family income on college enrollment	140,000
In support of a sequence of seminars for young foreign scholars on the formative years of American history . . .	75,000
Toward support of its efforts to evaluate undergraduates’ writing experiences	38,750

Henry E. Huntington Library & Art Gallery,
San Marino, California:

Toward costs of improving the care and management of library collections	570,000
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Hobart and William Smith Colleges,
Geneva, New York:

To improve foreign language teaching through the use of technology	320,000
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Hunter College Foundation, Inc.,
New York, New York:

For use by its Center for Puerto Rican Studies toward costs of organizing and making accessible the historical archives of the Puerto Rican migration to the United States, 1930–1993	200,000
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HIGHER EDUCATION
AND SCHOLARSHIP

(continued)

Appropriated

Indiana University,

Bloomington, Indiana:

In support of a pilot program of fellowships for PhDs in Slavic studies or African studies who wish to become research librarians	164,000
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Latin American Studies Association,

Pittsburgh, Pennsylvania:

In support of its efforts to use advanced information technology to improve member services and to foster the development of Web-based course and research materials	9,000
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Library of Virginia Foundation,

Richmond, Virginia:

Toward costs of the Virginia Historical Inventory project	270,000
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Macalester College,

St. Paul, Minnesota:

In support of research projects on higher education and a conference series	350,000
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Toward costs of a study of the history and performance of historically Black private colleges in the US since the mid-1950s	88,000
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Massachusetts Institute of Technology,

Cambridge, Massachusetts:

Toward costs of a demonstration and evaluation of the impact of electronic journals	115,000
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Medici Archive Project, Inc.,

New York, New York:

Matching grant toward costs of preparing an electronic finding aid to the Medici Archives	50,000
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HIGHER EDUCATION
AND SCHOLARSHIP

(continued)

Appropriated

Mount Holyoke College,
South Hadley, Massachusetts:

For use to improve educational effectiveness and to
gain financial efficiencies 360,000

National and University Library of Iceland,
Reykjavík, Iceland:

Matching grant for use, in collaboration with Cornell
University, toward costs of creating the Icelandic
National Digital Library 600,000

New School for Social Research,
New York, New York:

In support of a Sawyer Seminar which treats the histor-
ical and cultural sources of significant contemporary
developments 100,000

New York Botanical Garden,
Bronx, New York:

Toward costs of improved access to its library 460,000

New York University,
New York, New York:

Toward costs of improving access to The New-York
Historical Society's library collections 2,850,000

In support of a Sawyer Seminar which treats the histor-
ical and cultural sources of significant contemporary
developments 100,000

Newberry Library,
Chicago, Illinois:

Matching endowment of costs of improving the care
and management of library collections 750,000

HIGHER EDUCATION
AND SCHOLARSHIP

(continued)

Appropriated

Northwestern University,
Evanston, Illinois:

For use in support of seminars in literature and
history for graduate students preparing to write their
dissertations 82,000

Oberlin College,
Oberlin, Ohio:

To improve educational effectiveness and gain financial
efficiencies 350,000

Occidental College,
Los Angeles, California:

To improve educational effectiveness and gain financial
efficiencies 345,000

Omohundro Institute of
Early American History and Culture,
Williamsburg, Virginia:

Toward costs of a conference on Transatlantic slaving
and the African diaspora, co-sponsored with Harvard
University's W.E.B. Du Bois Institute 15,000

Organization of American Historians,
Bloomington, Indiana:

In support of a training workshop, in collaboration with
the American Historical Association, on historical edit-
ing in an electronic environment 50,000

Pierpont Morgan Library,
New York, New York:

Matching grant toward costs of improving the care and
management of library collections 850,000

HIGHER EDUCATION
AND SCHOLARSHIP

(continued)

Appropriated

Princeton University,
Princeton, New Jersey:

Endowment of programs to improve the effectiveness of graduate education in selected departments of the humanities and related social sciences while reducing time-to-degree and attrition rates	1,000,000
To improve the quality and effectiveness of graduate education within selected departments of the humanities and related social sciences while reducing time-to-degree and attrition rates	670,000
Toward costs of a research project on the economics of the electronic library of the future	295,000
In support of Sawyer Seminars which treat the historical and cultural sources of significant contemporary developments	200,000
In support of research on <i>WordNet</i> , an automated dictionary, and its capacity to improve information retrieval from JSTOR and other digital archives	200,000
To encourage economists to develop expertise in the study of foreign areas	175,000

Queens College Foundation, Inc.,
Flushing, New York:

Toward costs of completing the ninth and final volume of <i>The Papers of Robert Morris</i>	50,000
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Radcliffe College,
Cambridge, Massachusetts:

For use by The Arthur and Elizabeth Schlesinger Library to support digitization of photographic holdings	50,000
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HIGHER EDUCATION
AND SCHOLARSHIP

(continued)

Appropriated

Reed College,
Portland, Oregon:

In support of efforts to manage electronic scholarly
resources available to faculty and students 36,000

Rice University,
Houston, Texas:

Matching endowment to support teaching and research
in Latin American studies 800,000

Toward costs of a demonstration project on the use of
electronic materials in teaching for the enhancement of
quality and the reduction of costs 570,000

In support of an undergraduate fellowship program
intended to increase the number of minority students
enrolled in PhD programs in designated fields of the
arts and sciences 370,000

Skidmore College,
Saratoga Springs, New York:

To improve foreign language teaching through the use
of technology 260,000

Smith College,
Northampton, Massachusetts:

Toward costs of improving foreign language instruction
and achieving greater cost-effectiveness 300,000

Social Science Research Council,
New York, New York:

In support of its joint program with the American
Council of Learned Societies of international predoc-
toral research fellowships in the humanities and social
sciences and associated training workshops 2,000,000

HIGHER EDUCATION
AND SCHOLARSHIP

(continued)

Appropriated

Southern Education Foundation,
Atlanta, Georgia:

To improve the level of student and faculty access to
electronic networks and databases at selected Histori-
cally Black Colleges and Universities 2,000,000

Southwest Texas State University,
San Marcos, Texas:

For use by the Computer Assisted Language Instruc-
tion Consortium (CALICO) in support of its publica-
tions and other organizational activities 50,000

Stanford University,
Stanford, California:

Endowment of programs to improve the effectiveness
of graduate education in selected departments of the
humanities and related social sciences while reducing
time-to-degree and attrition rates 1,000,000

To improve the quality and effectiveness of graduate
education within selected departments of the humani-
ties and related social sciences while reducing time-to-
degree and attrition rates 670,000

To encourage economists to develop expertise in the
study of foreign areas 400,000

Swarthmore College,
Swarthmore, Pennsylvania:

To improve foreign language teaching, in collaboration
with Bryn Mawr and Haverford Colleges, through the
use of technology 1,000,000

Tulane University,
New Orleans, Louisiana:

For use in support of seminars in literature and
history for graduate students preparing to write their
dissertations 40,000

HIGHER EDUCATION
AND SCHOLARSHIP

(continued)

Appropriated

Union College,

Schenectady, New York:

Toward costs of improving foreign language instruction and achieving greater cost-effectiveness	335,000
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University of California at Berkeley,

Berkeley, California:

To improve the quality and effectiveness of graduate education within selected departments of the humanities and related social sciences while reducing time-to-degree and attrition rates	670,000
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For use by the Institute of Management, Innovation and Organization of the Haas School of Business for a collaborative study of the role of research universities in industrial innovation	500,000
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For use by the library and the University of California Press toward costs of electronic publication of scholarly monographs in area studies	400,000
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For use by its School of Information Management and Systems toward costs of PhD dissertation fellowships in information economics	150,000
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University of Cape Town Fund, Inc.,

New York, New York:

Toward costs of a demonstration project on the use of electronic materials in teaching for the enhancement of quality and the reduction of costs	70,000
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University of Chicago,

Chicago, Illinois:

To improve the quality and effectiveness of graduate education within selected departments of the humanities and related social sciences while reducing time-to-degree and attrition rates	670,000
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In support of a summer program of intensive language instruction in Arabic	300,000
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HIGHER EDUCATION
AND SCHOLARSHIP

(continued)

Appropriated

University of Dallas,
Irving, Texas:

To support efforts to use technology to improve teaching and learning in the liberal arts 50,000

University of Florida,
Gainesville, Florida:

In continued support of the project to digitize and promote scholarly use of Caribbean newspapers 9,000

University of Illinois at Urbana-Champaign,
Champaign, Illinois:

In support of a training program for Central American academic and research librarians 246,000

University of Michigan,
Ann Arbor, Michigan:

Endowment of programs to improve the effectiveness of graduate education in selected departments of the humanities and related social sciences while reducing time-to-degree and attrition rates 1,000,000

Toward costs of a demonstration project on the use of electronic materials in teaching for the enhancement of quality and the reduction of costs 950,000

To improve the quality and effectiveness of graduate education within selected departments of the humanities and related social sciences while reducing time-to-degree and attrition rates 670,000

Toward costs of a study of the influence of extracurricular participation and strong group identification on college students 250,000

To support the planning of a project on low-enrollment languages, in collaboration with the University of Chicago, the University of Wisconsin, and Northwestern University 17,200

HIGHER EDUCATION
AND SCHOLARSHIP

(continued)

Appropriated

University of Michigan,
Ann Arbor, Michigan:

(continued)

Toward costs of speakers' travel and participation in the
Marshall Symposium 15,000

In support of a study of the costs of different forms of
higher education that use technology 12,500

University of New Mexico,
Albuquerque, New Mexico:

For use by the Latin America Data Base toward costs of
its Economies of Latin America Archive project 270,000

University of North Carolina at Chapel Hill,
Chapel Hill, North Carolina:

In support of the Minority Undergraduate Research
Assistant Program 385,000

Toward costs of data collection for the Graduate
Student Research Project 10,000

University of Notre Dame,
Notre Dame, Indiana:

Toward the initial costs of collecting data and designing
case studies of secondary schools to complement the
Foundation's "College and Beyond" study 50,000

University of Pennsylvania,
Philadelphia, Pennsylvania:

Endowment of programs to improve the effectiveness
of graduate education in selected departments of the
humanities and related social sciences while reducing
time-to-degree and attrition rates 1,000,000

To improve the quality and effectiveness of graduate
education within selected departments of the humani-
ties and related social sciences while reducing time-to-
degree and attrition rates 670,000

HIGHER EDUCATION
AND SCHOLARSHIP

(continued)

Appropriated

University of Pennsylvania,
Philadelphia, Pennsylvania:

(continued)

Toward costs of a project using online pre-laboratory instructional materials to reduce the cost of laboratory instruction	575,000
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In support of a Sawyer Seminar which treats the historical and cultural sources of significant contemporary developments	100,000
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University of Rochester,
Rochester, New York:

For use in support of seminars in literature and history for graduate students preparing to write their dissertations	40,000
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University of Southern California,
Los Angeles, California:

For use in support of seminars in literature and history for graduate students preparing to write their dissertations	44,000
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University of Texas at Austin,
Austin, Texas:

Toward costs of retrospective conversion of library catalogue records of the Harry H. Ransom Humanities Research Center	150,000
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University of Virginia,
Charlottesville, Virginia:

In support of a new program of research and training in the economics of higher education	200,000
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University of Wisconsin at Madison,
Madison, Wisconsin:

For use in support of seminars in literature and history for graduate students preparing to write their dissertations	40,000
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HIGHER EDUCATION
AND SCHOLARSHIP

(continued)

Appropriated

Vassar College, Poughkeepsie, New York:	
To improve educational effectiveness and gain financial efficiencies	350,000
Virginia Historical Society, Richmond, Virginia:	
Toward costs of improving the care and management of library collections	500,000
Washington College, Chestertown, Maryland:	
To improve educational effectiveness and gain financial efficiencies	300,000
Wesleyan University, Middletown, Connecticut:	
In support of postdoctoral fellowships	395,000
Wheaton College, Norton, Massachusetts:	
To support the development of a videoconferencing project in international relations courses	50,000
Willamette University, Salem, Oregon:	
To improve foreign language teaching through the use of technology, in collaboration with Clark and Whitman Colleges and the University of Puget Sound	820,000
Williams College, Williamstown, Massachusetts:	
In support of postdoctoral fellowships	400,000
For use to improve educational effectiveness and to gain financial efficiencies	375,000
In support of research on the economics of higher education	225,000

HIGHER EDUCATION
AND SCHOLARSHIP

(continued)

Appropriated

Wofford College,
Spartanburg, South Carolina:

Toward costs of improving foreign language instruction
and achieving greater cost-effectiveness, in collabora-
tion with Furman University 675,000

Woodrow Wilson National Fellowship Foundation,
Princeton, New Jersey:

In support of the Mellon Fellowship programs 2,750,000

Yale University,
New Haven, Connecticut:

Toward costs of improving foreign language instruction
and achieving greater cost-effectiveness 1,335,000

Endowment of programs to improve the effectiveness
of graduate education in selected departments of the
humanities and related social sciences while reducing
time-to-degree and attrition rates 1,000,000

To improve the quality and effectiveness of graduate
education within selected departments of the humani-
ties and related social sciences while reducing time-to-
degree and attrition rates 670,000

In support of Sawyer Seminars which treat the histori-
cal and cultural sources of significant contemporary
developments 100,000

Total—Higher Education and Scholarship \$65,227,450

POPULATION

Appropriated

Alan Guttmacher Institute,
New York, New York:

In support of research on contraceptive development . . \$ 100,000

American University in Cairo,
New York, New York:

In support of a program in Middle Eastern population
studies 600,000

American University of Beirut,
New York, New York:

In support of a program in Middle Eastern population
studies 225,000

Australian National University,
Canberra, Australia:

In support of postdoctoral fellowships in anthropologi-
cal demography 100,000

Brown University,
Providence, Rhode Island:

For research and training in the demography of devel-
oping countries 525,000

Matching endowment for use by its Population Studies
and Training Center for graduate training in anthropo-
logical demography 250,000

George Mason University,
Fairfax, Virginia:

To enhance the connectivity and use of international
computer networks by selected organizations in the US
and developing countries 450,000

Indiana University,
Bloomington, Indiana:

In support of a visiting fellowship in anthropological
demography 70,000

POPULATION

(continued)

*Appropriated*Johns Hopkins University,
Baltimore, Maryland:

For research and training in the demography of developing countries	450,000
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Medical College of Hampton Roads,
Norfolk, Virginia:

For use by the CONRAD program in support of research on contraceptive development	450,000
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National Academy of Sciences,
Washington, DC:

For use by its Committee on Population in support of research	200,000
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Northwestern University,
Evanston, Illinois:

In support of a visiting fellowship in anthropological demography	60,000
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Pennsylvania State University,
University Park, Pennsylvania:

For research and training in the demography of developing countries	450,000
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In support of a visiting fellowship in anthropological demography	70,000
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Population Council,
New York, New York:

For use as general support for its Research Division . . .	1,200,000
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In support of a program in Middle Eastern population studies	390,000
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In support of the Navrongo research program	300,000
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In support of a special edition of <i>Studies in Family Planning</i>	20,000
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POPULATION

(continued)

*Appropriated*Princeton University,
Princeton, New Jersey:

For research and training in the demography of developing countries	390,000
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In support of its annotated bibliography, <i>Population Index</i>	100,000
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RAND Corporation,
Santa Monica, California:

In support of a program of research and training in the demography of Central America	125,000
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San Diego State University,
San Diego, California:

In support of a program in Middle Eastern population studies	100,000
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Universidad de Costa Rica,
San José, Costa Rica:

In support of a program of research and training in the demography of Central America	200,000
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Université de Montréal,
Montréal, Canada:

For research and training in the demography of developing countries	250,000
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University of California at Berkeley,
Berkeley, California:

In support of a visiting fellowship in anthropological demography	70,000
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University of California at Irvine,
Irvine, California:

In support of a visiting fellowship in anthropological demography	70,000
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POPULATION

(continued)

*Appropriated*University of Chicago,
Chicago, Illinois:

For research and training in the demography of developing countries	120,000
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University of Michigan,
Ann Arbor, Michigan:

For research and training in the demography of developing countries	480,000
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University of North Carolina at Chapel Hill,
Chapel Hill, North Carolina:

For research and training in the demography of developing countries	530,000
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University of Pennsylvania,
Philadelphia, Pennsylvania:

For research and training in the demography of developing countries	600,000
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University of Pretoria,
Pretoria, South Africa:

For use to strengthen demographic research and training in South Africa	150,000
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University of Texas at Austin,
Austin, Texas:

For research and training in the demography of developing countries	450,000
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In support of a visiting fellowship in anthropological demography	60,000
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University of the Witwatersrand,
Johannesburg, South Africa:

For use to strengthen demographic research and training in South Africa	100,000
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POPULATION

(continued)

*Appropriated*University of the Witwatersrand,
Johannesburg, South Africa:

(continued)

In support of activities related to the Dual Congress of the International Association for the Study of Human Paleontology and the International Association of Human Biologists	25,000
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University of Washington,
Seattle, Washington:

For research and training in the demography of devel- oping countries	495,000
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Total—Population

 \$10,225,000

PUBLIC AFFAIRS

*Appropriated*Academia Istropolitana Nova, Civic Association,
Bratislava, Slovakia:

Toward costs of professional training in applied economics, finance, environmental planning and management, urban heritage conservation, and European studies	\$ 400,000
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Adelphi University,
Garden City, New York:

Toward costs of planning possible changes in its mission and academic and financial structures	50,000
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American Farm School,
New York, New York:

Toward costs of upgrading library and information technology and enhancing cooperation among American institutions of higher learning in Greece and the Balkans	125,000
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American Refugee Committee,
Evanston, Illinois:

Matching grant to establish the corpus of a revolving emergency fund	100,000
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Appalachian State University,
Boone, North Carolina:

In support of research on the evaluation and diffusion of the 5th Dimension, an afterschool program promoting literacy	250,000
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Association for the Advancement of
Baltic Studies, Inc.,
Hackettstown, New Jersey:

For general support	25,000
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PUBLIC AFFAIRS

(continued)

*Appropriated*Brown University,
Providence, Rhode Island:

In support of activities to promote institutional learning and change among nongovernmental organizations in the refugee and relief fields	200,000
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California State University at San Marcos,
San Marcos, California:

In support of research on the evaluation and diffusion of the 5th Dimension, an afterschool program promoting literacy	50,000
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Center for Strategic and International Studies,
Washington, DC:

In support of activities to increase minority participation in international affairs	50,000
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Central European University Foundation,
Budapest, Hungary:

Toward development of its Jewish studies program	30,000
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CERGE Foundation,
Ann Arbor, Michigan:

Matching grant for use in support of the programs of its subsidiary, CERGE-EI	300,000
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City University of New York,
New York, New York:

For use by the Center for Logistics and Transportation of the Graduate School and University Center for the purpose of completing the Foundation's support of market logistics workshops in Hungary	3,000
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Clare Hall,
Cambridge, England:

In support of an examination of the impact of the new South African Constitution on private law in South Africa	25,000
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PUBLIC AFFAIRS

(continued)

*Appropriated*Columbia University,
New York, New York:

For use by its Center for Population and Family Health in support of a program of research and training in the refugee field	900,000
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Consortium of Estonian Libraries Network,
Tallinn, Estonia:

To support the attendance of Baltic librarians at the Foundation's Library Automation Conference in Warsaw, Poland	6,500
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Cooperative for Assistance and
Relief Everywhere, Inc. (CARE),
Atlanta, Georgia:

Matching grant to establish the corpus of a revolving emergency fund	500,000
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Council for Excellence in Government,
Washington, DC:

To support a two-day leadership forum for new Presi- dential appointees at the subcabinet level	25,000
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Financial Services Volunteer Corps,
New York, New York:

Toward costs of programs directed at strengthening the financial sector in Russia	150,000
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Free State Higher and Further Education
and Training Trust,
Bloemfontein, South Africa:

Toward costs of library automation and expanded access to libraries in South Africa's Free State province	1,200,000
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PUBLIC AFFAIRS

(continued)

*Appropriated*Global Center,
New York, New York:

Toward costs of completing the videotape "Connected: Careers for the Future" and related materials on career opportunities for minorities in international affairs	25,000
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Harvard University,
Cambridge, Massachusetts:

For research on the academic performance of Black and white students in selective colleges	58,000
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Howard University,
Washington, DC:

In support of a three-month residency in South Africa .	50,000
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Institute for EastWest Studies, Inc.,
New York, New York:

Toward costs of conducting workshops in the Banking Finance Assistance Center and of improving the Cen- ter's library	22,500
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Institute for Research on Learning,
Menlo Park, California:

In support of research on the evaluation and diffusion of the 5th Dimension, an afterschool program promot- ing literacy	38,000
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Interaction American Council for Voluntary
International Action, Inc.,
Washington, DC:

In support of the production and dissemination of health training materials for professional relief workers	140,000
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International Medical Corps,
Los Angeles, California:

Matching grant to establish the corpus of a revolving emergency fund	100,000
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PUBLIC AFFAIRS

(continued)

*Appropriated*International Rescue Committee, Inc.,
New York, New York:

Matching grant to establish the corpus of a revolving emergency fund	500,000
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Toward costs of reprinting Mary Anderson's <i>Rising from the Ashes</i>	10,000
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Massachusetts Institute of Technology,
Cambridge, Massachusetts:

For use by its Center for International Studies to provide small grants for applied research and training in the refugee and relief fields	320,000
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Mount Holyoke College,
South Hadley, Massachusetts:

Toward costs of completing the integration of the Kosice Library Information Network into the Czech and Slovak Library Information Network	220,000
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Toward costs of the Czech CASLIN Union Catalogue	30,000
--	--------

Toward costs of Safarika University's participation in the HUSLONET Consortium	10,000
--	--------

NAACP Legal Defense and Educational Fund, Inc.,
New York, New York:

Toward costs of soliciting guidance and advice on the appropriate management of its archives	15,000
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National Center For Nonprofit Boards,
Washington, DC:

In support of two publications on governance in the Research in Action series	40,000
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National Library of Latvia,
Riga, Latvia:

Toward costs of travel to the Deutsches Bibliotheks-institut to study automation systems	2,000
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PUBLIC AFFAIRS

(continued)

*Appropriated*National Library of Poland,
Warsaw, Poland:

In support of the October 1997 Library Automation Conference in Warsaw	18,200
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National Széchenyi Library,
Budapest, Hungary:

Toward costs of travel and related expenses of the Hun- garian participants attending the October 1997 Library Automation Conference in Warsaw	16,500
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National Trust for Historic Preservation,
Washington, DC:

Toward costs of developing alternative models for rela- tions among national, state, and local historic preserva- tion organizations	300,000
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Nicholas Copernicus University,
Toruń, Poland:

Toward costs of establishing the International Center for Information Management Systems and Services . . .	6,000
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Ossolineum Library,
Wroclaw, Poland:

Toward costs of library automation	10,000
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Princeton University,
Princeton, New Jersey:

In support of the Community of Scholars program . . .	50,000
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For use by its Office of Population Research in support of the Composition Project	10,000
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To support travel expenses of a delegation of Judaica library experts to the National Library of Lithuania . . .	7,800
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Toward the costs of a study of public participation in arts activities	4,350
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PUBLIC AFFAIRS

(continued)

*Appropriated*Rhodes Charitable Trust,
Warrendale, Pennsylvania:

In support of a feasibility study of a higher education library consortium in the Eastern Cape Province of South Africa	40,000
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Rhodes University,
Grahamstown, South Africa:

To provide graduate fellowships for students from disadvantaged backgrounds and to prepare them for academic careers	1,000,000
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Rockefeller University,
New York, New York:

Toward costs of a summer laboratory training program for undergraduate minority students	75,000
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Russell Sage Foundation,
New York, New York:

Toward costs of a study of the economic and social assimilation of second generation immigrants	275,000
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Toward costs of administering the Literacy Program which is jointly conducted by the two foundations	130,000
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Save the Children Federation, Inc.,
Westport, Connecticut:

Matching grant to establish the corpus of a revolving emergency fund	250,000
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Social Science Research Council,
New York, New York:

In support of pre- and postdoctoral fellowships and a workshop for minority students in the field of international migration	390,000
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PUBLIC AFFAIRS

(continued)

*Appropriated*University of California at Los Angeles,
Los Angeles, California:

For use by the Department of Library Information Studies of the Graduate School of Education and Information, toward costs of a study of research library staffing patterns in Eastern Europe	6,000
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University of California at San Diego,
La Jolla, California:

In support of research on the evaluation and diffusion of the 5th Dimension, an afterschool program promot- ing literacy	135,000
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University of California at Santa Barbara,
Santa Barbara, California:

In support of research on the evaluation and diffusion of the 5th Dimension, an afterschool program promot- ing literacy	62,000
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University of Chicago,
Chicago, Illinois:

In support of a study of the effects of Catholic school- ing on the educational attainments of minority and white students and on their subsequent earnings	67,000
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University of Florida,
Gainesville, Florida:

Toward costs of the 50th Anniversary Jubilee Seminar of the International Court of Justice in Africa, spon- sored by the University's Center for Governmental Responsibility	25,000
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University of Michigan,
Ann Arbor, Michigan:

In support of a study of the causes of attrition of minor- ity undergraduates who have matriculated at selective colleges and universities	870,000
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PUBLIC AFFAIRS

(continued)

*Appropriated*University of Michigan,
Ann Arbor, Michigan:

(continued)

For use by the Institute for Social Research toward costs of a program of training in quantitative social science methodology for South Africans	700,000
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Toward costs of planning the "Symposium on Constitution-Making in South Africa"	47,500
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University of Natal,
Durban, South Africa:

Toward costs of strengthening the University's Campbell Collections	460,000
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To support travel expenses for the conservator of the Campbell Collections to attend a digital imaging workshop at Cornell University	2,100
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University of Oxford,
Oxford, England:

In support of training programs to address mental health problems in displaced populations	240,000
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For use by its Refugee Studies Programme toward costs of a management review	10,000
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University of Pennsylvania,
Philadelphia, Pennsylvania:

For research on the academic performance of Black and white students in selective colleges	200,000
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In support of training programs to address mental health problems in displaced populations	120,000
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PUBLIC AFFAIRS

(continued)

*Appropriated*University of the Witwatersrand,
Johannesburg, South Africa:

To complete the final two volumes of the documentary history <i>From Protest to Challenge</i> by Gail Gerhart and Thomas G. Karis	50,000
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Toward costs of a workshop on digitization in Johannesburg and for travel expenses for the curator of manuscripts in the University's library to attend a digital imaging workshop at Cornell University	20,000
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Urban Institute,
Washington, DC:

Toward costs of a research project on the characteristics and preparation of African-American students who are high scorers on the Scholastic Aptitude Test	135,000
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In support of an analysis of College Board data to identify factors associated with high levels of academic achievement by African-American youth	50,000
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Vanderbilt University,
Nashville, Tennessee:

For use by the Learning and Technology group of its School of Education in support of research on the introduction of the Fostering a Community of Learners curriculum into Nashville schools and the production of a multimedia book about the development of educational innovations and their diffusion	1,400,000
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Western Cape Tertiary Institutions Trust,
Cape Town, South Africa:

Toward costs of participation by South African librarians in the Library Automation Conference in Warsaw, Poland	12,500
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PUBLIC AFFAIRS

(continued)

*Appropriated*Whittier College,
Whittier, California:

In support of research on the evaluation and diffusion of the 5th Dimension, an afterschool program promoting literacy	60,000
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Yale University,
New Haven, Connecticut:

To support a student researcher in the Afro-American Cultural Center	1,200
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York University,
North York, Canada:

For use by its Centre for Refugee Studies	300,000
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For use by its Centre for Refugee Studies in support of an evaluation of conditions for safe repatriation of refugee populations	10,000
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Total—Public Affairs

 \$13,536,150

CONTRIBUTIONS	<i>Appropriated</i>
Association of Governing Boards of Universities and Colleges, Washington, DC:	
For general support	\$ 35,000
Council on the Environment of New York City, New York, New York:	
For general support	30,000
Eviction Intervention Services, New York, New York:	
For general support	40,000
Foundation Center, New York, New York:	
For general support	30,000
Marymount Manhattan College, New York, New York:	
For general support	25,000
Nonprofit Coordinating Committee of New York, New York, New York:	
For general support	30,000
Special Libraries Association, Washington, DC:	
For general support	15,000
Total—Contributions	<u>\$ 205,000</u>
Grand Totals	<u><u>\$120,048,800</u></u>

Financial Statements

REPORT OF INDEPENDENT ACCOUNTANTS

To the Board of Trustees of
The Andrew W. Mellon Foundation

In our opinion, the accompanying balance sheet and the related statements of activities and cash flows present fairly, in all material respects, the financial position of The Andrew W. Mellon Foundation at December 31, 1997 and 1996, and its income, expenses and changes in principal balance for the years then ended, in conformity with generally accepted accounting principles. These financial statements are the responsibility of the Foundation's management; our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits on these statements in accordance with generally accepted auditing standards which require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatements. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for the opinion expressed above.



Price Waterhouse LLP
New York, New York
March 13, 1998

The Andrew W. Mellon Foundation

Balance Sheet

	<i>December 31,</i>	
	<u>1997</u>	<u>1996</u>
	<i>(In thousands)</i>	
ASSETS		
Investments:		
Marketable securities	\$2,641,570	\$2,316,575
Limited liquidity investments	334,278	299,411
Interest in coal properties	46,000	60,000
	<u>3,021,848</u>	<u>2,675,986</u>
Cash	6,834	5,318
Dividend and interest income receivable	14,352	11,660
Coal property income receivable	592	2,988
Receivable from unsettled securities sales	26,580	8,257
Property, at cost less accumulated depreciation of \$2,412 and \$2,045 at December 31, 1997 and 1996, respectively	<u>10,231</u>	<u>10,516</u>
Total assets	<u><u>\$3,080,437</u></u>	<u><u>\$2,714,725</u></u>
LIABILITIES AND PRINCIPAL BALANCE		
Grants payable	\$ 12,896	\$ 13,359
Payable from unsettled securities purchases	115,342	43,030
Federal excise tax payable:		
Current	1,360	1,391
Deferred	7,871	7,585
Accrued expenses	<u>1,965</u>	<u>1,743</u>
Total liabilities	139,434	67,108
Principal balance (unrestricted)	<u>2,941,003</u>	<u>2,647,617</u>
Total liabilities and principal balance	<u><u>\$3,080,437</u></u>	<u><u>\$2,714,725</u></u>

The accompanying notes are an integral part of these financial statements.

The Andrew W. Mellon Foundation

Statement of Activities

	<i>For the years ended</i> <i>December 31,</i>	
	<u>1997</u>	<u>1996</u>
	<i>(In thousands)</i>	
INVESTMENT RETURN:		
Gain on marketable securities:		
Realized gain.....	\$ 281,861	\$ 188,420
Unrealized gain.....	13,972	65,847
Net gain on limited liquidity investments	69,372	45,344
Interest	36,058	34,197
Dividends	43,132	39,463
Income from coal properties.....	10,920	10,698
	<u>455,315</u>	<u>383,969</u>
Less: Investment expenses.....	(11,378)	(9,790)
Depletion of coal properties	(14,000)	(20,000)
Net investment return.....	<u>429,937</u>	<u>354,179</u>
EXPENSES:		
Program grants and contributions (net of cancellations or refunds of prior-year grants)	118,541	101,213
Salaries, pensions and benefits.....	5,782	5,461
Other administrative and office expenses.....	3,826	3,338
Current provision for federal excise tax	8,402	5,955
	<u>136,551</u>	<u>115,967</u>
Change in principal balance.....	293,386	238,212
Principal balance (unrestricted) at beginning of year	<u>2,647,617</u>	<u>2,409,405</u>
Principal balance (unrestricted) at end of year	<u>\$2,941,003</u>	<u>\$2,647,617</u>

The accompanying notes are an integral part of these financial statements.

The Andrew W. Mellon Foundation

Statement of Cash Flows

	<i>For the years ended December 31,</i>	
	<u>1997</u>	<u>1996</u>
	<i>(In thousands)</i>	
Cash flow from investment income and operations:		
Sources of cash		
Interest and dividends.....	\$ 76,499	\$ 72,424
Income from coal properties.....	13,316	10,364
Federal excise tax refund.....	7	1,889
Other income	182	232
	<u>90,004</u>	<u>84,909</u>
Uses of cash		
Payment of grants and contributions.....	(119,004)	(111,131)
Payment of investment expenses	(11,038)	(9,275)
Payment of salaries and other administrative expenses ..	(9,358)	(8,622)
Payment of federal excise tax	(8,440)	(4,617)
	<u>(147,840)</u>	<u>(133,645)</u>
Net cash from investment income and operations	<u>(57,836)</u>	<u>(48,736)</u>
Cash flow from investing activities:		
Sources of cash		
Proceeds from sales of marketable securities		
Short-term.....	1,894,222	1,693,909
Other marketable securities.....	2,197,173	1,741,414
Receipts from limited liquidity investments	93,943	56,631
Capital gains distributions from mutual funds	41,056	22,226
Settlement of financial instruments.....	5,854	3,852
	<u>4,232,248</u>	<u>3,518,032</u>
Uses of cash		
Purchases of marketable securities:		
Short-term.....	(1,939,905)	(1,668,272)
Other marketable securities.....	(2,146,814)	(1,735,094)
Purchases of limited liquidity investments	(86,094)	(69,276)
Capital asset additions	(83)	—
	<u>(4,172,896)</u>	<u>(3,472,642)</u>
Net cash from investing activities	<u>59,352</u>	<u>45,390</u>
Net increase (decrease) in cash	1,516	(3,346)
Cash at beginning of year.....	5,318	8,664
Cash at end of year.....	<u>\$ 6,834</u>	<u>\$ 5,318</u>

The accompanying notes are an integral part of these financial statements.

The Andrew W. Mellon Foundation

Reconciliation of Change in Net Assets to Net Cash from Investment Income and Operations

	<i>For the years ended December 31,</i>	
	<u>1997</u>	<u>1996</u>
	<i>(In thousands)</i>	
Increase in net assets	\$293,386	\$238,212
Adjustments to reconcile change in net assets to net cash from investment income and operations:		
Increase in unrealized appreciation of investments	(14,258)	(67,191)
Realized gain on investments	(352,837)	(233,196)
Loss (income) from limited liquidity investments	1,787	(336)
Decrease in grants payable	(463)	(9,918)
Depreciation expense	367	361
Depletion of coal properties	14,000	20,000
Increase in deferred federal excise tax provision	286	1,344
Decrease in federal excise tax receivable		1,837
(Decrease) increase in federal excise tax payable	(31)	1,391
Increase in interest and dividend receivable	(2,691)	(1,236)
Decrease (increase) in coal property income receivable	2,396	(334)
Increase in accrued expenses	222	330
Total adjustments	<u>(351,222)</u>	<u>(286,948)</u>
Net cash from investment income and operations	<u>(\$57,836)</u>	<u>(\$48,736)</u>

The accompanying notes are an integral part of these financial statements.

The Andrew W. Mellon Foundation

NOTES TO FINANCIAL STATEMENTS

NOTE 1—SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES:

The financial statements of The Andrew W. Mellon Foundation (the Foundation) have been prepared in accordance with generally accepted accounting principles which requires the use of management's estimates. The significant accounting policies followed are described below.

Investments:

Investments in marketable securities are stated at market value. Market value is determined using daily closing last trade prices, where available, for all tradeable instruments on any global stock exchange. Realized gains and losses on investments in securities are calculated based on the first-in, first-out identification method.

The value of the coal properties is determined based on an estimate of the remaining coal reserves and the discounted value of the anticipated future income. The coal properties are recorded at their estimated current value of \$46 million at December 31, 1997 and \$60 million at December 31, 1996. The cost of these properties, adjusted for accumulated depletion, was \$798 thousand at December 31, 1997 and \$818 thousand at December 31, 1996.

Limited liquidity investments, which are carried at cost, are primarily made under agreements to participate in limited partnerships. Due to their nature, the market value of these investments is not readily determinable. The estimated current value of these investments held by limited partnerships, as reported by the partnerships, was \$446 million at December 31, 1997 and \$405 million at December 31, 1996.

Grants:

Grant appropriations include both conditional and unconditional grants. Unconditional grants are expensed when appropriated. Certain grants are approved by the Trustees subject to the grantee fulfilling specific conditions, most frequently that all or a portion of the grant funds be matched in a specified ratio. Such conditional grants are considered commitments and are not recorded as expense until the conditions of the grant are met. Substantially all grants payable are due within one year and are recorded at face value.

Federal Excise Tax:

The Foundation qualifies as a tax-exempt organization under Section 501(c)(3) of the Internal Revenue Code and, accordingly, is not subject to federal income taxes. However, the Foundation is subject to a federal excise tax. The Foundation follows the policy of providing for federal excise tax on the net appreciation (both realized and unrealized) of investments. The deferred federal excise tax in the accompanying financial statements represents tax provided on the net unrealized appreciation of investments.

Property:

Property is primarily buildings which are depreciated over their useful lives, generally twenty-five years.

Investment Return:

Investment return includes income, realized gains on investments and unrealized gains on marketable securities. Unrealized gains on marketable securities comprises the increase in unrealized appreciation, net of deferred federal excise tax provided on such unrealized appreciation. Net gain on limited liquidity investments includes the income or loss of partnership investments and realized gains, whether distributed or undistributed, from such investments.

Expenses:

Investment expenses are the costs of portfolio management, including fees for investment management, custody, and advisory services. Other administrative and office expenses include all costs of operating the Foundation offices, including maintenance and depreciation.

NOTE 2—INVESTMENTS:

Marketable securities held at December 31, 1997 and 1996 are summarized as follows:

	<i>December 31, 1997</i>		<i>December 31, 1996</i>	
	<i>Market Value</i>	<i>Cost</i>	<i>Market Value</i>	<i>Cost</i>
	<i>(in thousands)</i>		<i>(in thousands)</i>	
Equities.....	\$1,780,115	\$1,397,699	\$1,595,872	\$1,230,813
Fixed Income	674,065	663,022	576,890	560,750
Short-term	185,763	185,763	138,933	138,931
Other	1,627	1,627	4,880	6,878
Total	<u>\$2,641,570</u>	<u>\$2,248,111</u>	<u>\$2,316,575</u>	<u>\$1,937,372</u>

Pursuant to its limited partnership agreements, the Foundation is committed to contribute approximately \$240 million as of December 31, 1997 in additional capital over the next ten years. Unpaid commitments at December 31, 1996 were \$197 million.

As a result of its investing strategies, the Foundation is a party to a variety of financial instruments. These financial instruments may include equity, fixed income, and foreign currency futures and options contracts, foreign currency forwards, and interest rate cap and floor contracts. Much of the Foundation's off-balance-sheet exposure represents strategies that are designed to reduce the interest rate and market risk inherent in portions of the Foundation's investment program. Changes in the market values of these financial instruments are recognized currently in the Statement of Activities.

Through certain investment managers, the Foundation purchases and sells forward currency contracts whereby the Foundation agrees to exchange one currency for another on an agreed-upon date at an agreed-upon exchange rate to minimize the exposure of certain of its marketable securities to adverse fluctuations in financial and currency markets. As of December 31, 1997 and 1996, the Foundation had forward currency contracts with notional amounts totaling \$73 million and \$93 million, respectively. At December 31, 1997 approximately \$73 million in assets and \$71 million in liabilities related to open foreign currency contracts, at market value, are included in other marketable securities.

During the course of 1997 and 1996 the Foundation purchased below-market put options on the S&P 500 index in order to provide protection for a portion of its portfolio held in securities which are represented in the index. The Foundation discontinued this program in 1997 and all option positions had expired as of December 31, 1997. At December 31, 1996, other marketable securities included options with a market value of \$3.7 million.

Through a securities lending program managed by its investment custodian, the Founda-

tion loans certain stocks and bonds included in its investment portfolio to qualified investors. These investors are required to deposit cash of a like amount with the investment custodian as collateral on such loans. The Foundation's investment custodian has indemnified the program against counterparty risk. The Foundation's gross securities loaned to certain investors at December 31, 1997 amounted to approximately \$82 million.

Financial instruments such as those described above involve, to varying degrees, elements of market risk and credit risk in excess of the amounts recorded on the balance sheet. Market risk represents the potential loss the Foundation faces due to the decrease in the value of financial instruments. Credit risk represents the maximum potential loss the Foundation faces due to possible non-performance by obligors and counterparties of the terms of their contracts.

Management does not anticipate that losses, if any, resulting from its market or credit risks would materially affect the financial position and Statement of Activities of the Foundation.

NOTE 3—FEDERAL EXCISE TAX:

The Internal Revenue Code imposes an excise tax on private foundations equal to 2 percent of net investment income (principally interest, dividends, and net realized capital gains, less expenses incurred in the production of investment income).

The provision for federal excise tax consists of a current provision on realized net investment income and a deferred provision on unrealized appreciation of investments. The current provision for 1997 on net investment income at 2 percent is \$8.4 million. The current provision in 1996 at 2 percent was \$5.9 million. The change in unrealized appreciation reflected on the Statement of Activities includes a provision for deferred taxes based on net unrealized appreciation of investments at 2 percent. The increase in unrealized appreciation in 1997 and 1996 resulted in an increase of the deferred federal excise tax liability of \$0.3 million and \$1.3 million, respectively.

NOTE 4—GRANTS, CONTRIBUTIONS, and COMMITMENTS:

The following table of grant activity by major program area includes all grant appropriations approved during 1997. The grants payable and committed at December 31, 1996 have been restated to reflect cancellations of \$480 thousand and a grant refund restored to commitments of \$840 thousand during 1997.

	<i>Payable and Committed, Dec. 31, 1996</i>	<i>1997 Grants and Commitments</i>		<i>Payable and Committed, Dec. 31, 1997</i>
		<i>Appropriated</i>	<i>Paid</i>	
		<i>(In thousands)</i>		
Conservation and the Environment.....	\$ 4,216	\$ 14,959	\$ 18,611	\$ 564
Museums and Art Conservation	13,910	5,766	7,718	11,958
Performing Arts.....	5,121	10,130	11,118	4,133
Higher Education and Scholarship	12,927	65,228	59,338	18,817
Population.....	2,287	10,225	10,136	2,376
Public Affairs.....	<u>7,258</u>	<u>13,536</u>	<u>13,533</u>	<u>7,261</u>
Program Grants & Commitments—Totals	45,719	119,844	120,454	45,109
Contributions.....	<u>—</u>	<u>205</u>	<u>205</u>	<u>—</u>
Totals	<u>\$45,719</u>	<u>\$120,049</u>	<u>\$120,659</u>	<u>\$45,109</u>

Grant and grant commitment activity is summarized below.

	<i>Amount</i>	
	<u>1997</u>	<u>1996</u>
	<i>(In thousands)</i>	
Grants Payable:		
Grants payable at January 1	\$13,359	\$23,277
Less grant cancellation	—	(29)
Grant expense	120,196	103,809
Less grants paid	<u>(120,659)</u>	<u>(113,698)</u>
Grants payable at December 31	<u>\$12,896</u>	<u>\$13,359</u>
Net Grant Expense:		
Unconditional grants	\$105,111	\$96,369
Conditional grants	<u>15,085</u>	<u>7,440</u>
	120,196	103,809
Less grant cancellation	—	(29)
Less grant refunds	<u>(1,655)</u>	<u>(2,567)</u>
	<u>\$118,541</u>	<u>\$101,213</u>
Grant Commitments:		
Grant commitments at January 1	32,000	24,220
Less commitment cancellation	(480)	(400)
Commitment restored from refunded amount	840	—
Conditional grants appropriated	14,938	15,620
Less grants meeting conditions for payment	<u>(15,085)</u>	<u>(7,440)</u>
Grant commitments at December 31	<u>\$32,213</u>	<u>\$32,000</u>