

## Strategies and Measures for Our Next Century

The Janet Doe Lecture  
Medical Library Association  
May 25, 1998

As we celebrate the centennial of our association, we have an opportunity to reflect on the milestones that have marked our development as a profession and as an association. Thirty years ago an anonymous donor contributed \$500 for a lecture in honor of Janet Doe, and Gertrude Annan's presentation in 1967 of the first lecture clearly established one of our milestones. The following 29 years of lectures has recently been reviewed in a very nice article by Alison Bunting in the Bulletin. At the beginning of her article, she describes the sense of honor, quickly followed by angst with the invitation to present the Janet Doe Lecture. For me, it was a quiet afternoon when the innocent looking letter from MLA arrived. Alison got it right when she says "The initial exhilaration is soon followed by the realization that the honor carries with it a significant intellectual challenge and responsibility -- to prepare an hour-long lecture on the history or philosophy of medical librarianship."<sup>1</sup> My first Doe lecture was in San Antonio where Jacqueline Felter presented her lecture on cooperation. Since that first lecture, the Janet Doe lecture has been a personal measure as I have often considered what I would say if I had this opportunity to address my friends and colleagues on the subject of our profession. As it has turned out, this has proved to be a good personal measure and one you might consider, but more about measures a little later.

Preparing for this lecture, there was what initially was an obligatory, but turned out to be a really satisfying read of nearly thirty years of lectures. It was a chance to spend some time with legends, heroes and friends. The Doe Lectures paint an impressionist landscape of the development of our profession. While the theme of the lecture is history and philosophy, this theme has been stretched into a very wide umbrella under which reflections on the past are often accompanied by visions of our future. Extension of the theme's boundaries can be seen in the earliest lectures. Dr. Brodman's wonderful lecture on excellence looked forward as she challenged us to "...fearlessly pursue professional excellence, secure in the belief in our capability for solving problems, trusting in the honesty and good will of our colleagues, and thinking

always to advance the high calling which we profess."<sup>2</sup> Just three years later, Mrs. Felter's lecture, "Library Cooperation: Wave of the Future or Ripple?" presented her hopes for our future by providing the following response to the question in her title, "I would prefer library cooperation to come on as a strong, steady tide. Ebb and flow is to be expected; the period of the ebb used for reflection and evaluation so the flow will be more effective. I believe that cooperation by whatever name is viable and necessary. Only irreversible circumstances prevent me from continuing to be part of it."<sup>3</sup>

While these visions hold true today, increasing specificity in looking forward has had its hazards. Harold Bloomquist's entertaining and often biting lecture, "The Medical Librarian as Manager; or the Fruits of Fadism", includes an interesting assessment of AIM/TWX, a system which turned out to be an important step in the development of MEDLINE. "In AIM/TWX, however, were the seeds of fadism. Despite its ingenuity, it was built on an inferior data base (Abridged Index Medicus), and it certainly had the characteristics of hucksterism (for whatever reasons), and there was a widespread "bandwagon" reaction."<sup>4</sup> In the 1976 Doe lecture, David Bishop missed some of the details, but twenty years later we are now realizing his vision. "...in the future many a scientific article will not be published at all. Rather, through some device, probably an automatically produced alerting system, the information seeker will be led to key-in his need at a remote terminal, perhaps scan an article on a CRT, command its delivery to him (probably in computer-output microform, or perhaps in electronic transfer to his local computer bank), and no doubt be billed automatically for the service."<sup>5</sup> More recently, Nina Matheson, the person who has done more to prepare us than anyone for the adventures that lie ahead, proposed the following, "The idea of the library is no longer the mausoleum of dead genius as it had been in the nineteenth century. In the twenty-first century, the idea of the library will be a knowledge server, an encyclopedic source of knowledge, the encryption of what is known of civilization, culture and the organization of the universe."<sup>6</sup> While it is interesting looking back, I have always tried to follow my favorite swami's advise, "Live for the future, we are going there anyway."

The decade of the nineties will be notable for the transformation of major social institutions. We have been caught up in the maelstrom of managed care and while the outcome of this transformation is still in doubt, we are now entering yet another with the transformation of education. A recent article in the Educom Review, suggested that

higher education has much to learn from the health care experience. It notes that, "Several lessons have already emerged from the health care industry that may have meaning for higher education. In becoming market-based, the health care industry learned to view the customer (read: patient, student) as the center of the process. That's a far cry from the good old days when users of health or educational services were clearly at the bottom of the value chain."<sup>7</sup> There are variety of interesting and often innovative initiatives underway but the effort that has received much of the press and may be most illustrative is what is now called the Western Governors University (WGU) <http://www.westgov.org/smart/vu/vu.html>.

The WGU began not as an initiative from the higher education community but as an initiative of powerful political forces. Introduced at a meeting of the Western Governor's Association in December 1995, the "Virtual University", as it was called in its first version, was intended to address the limitations of "traditional" higher education through the use of new technologies. A sense of the dissatisfaction with higher education can be seen in the remarks of Governor Romer from Colorado that were reported in the Salt Lake Tribune, "This is going to scare a lot of people to death. It is a threat to accrediting organizations, and to professors who 'get five weeks of vacation at Christmas...and who don't teach after 1 p.m.'"<sup>8</sup> The eleven governors attending the meeting endorsed the idea and established a design team which would include a representative from each state.

In February 1996 at the National Governors Conference, a publicity effort in support of the Virtual University, which at that point was called the Western Virtual University, was launched with the release of a concept document, "From Vision to Reality." The document begins with a summary of the governors' concerns, "All western governors are feeling the press of increased demand on their state systems of postsecondary education. All recognize that the strength and well-being of both their states and the nation depend heavily on a postsecondary education system that is visibly aligned with the needs of a transforming economy and society. At the same time, the states' capacity to respond to these challenges is severely constrained by limited resources and the inflexibility and high costs of traditional education practices and by outdated institutional and public policies."<sup>9</sup> The document continues with a list of "criteria" or defining characteristics of this new educational institution:

- Market Oriented
- Independent
- Client-Centered
- Degree Granting
- Accredited
- Regional
- Non-Teaching
- High Quality
- Cost-Effective
- Competency Based
- Quickly Initiated

From the perspective of veterans of the managed care wars, a number of these characteristics should look familiar. It is also possible to turn them around and view the governors' reservations concerning higher education. For example, the criteria of "Independent" is described as, "not controlled by those who represent established interests with regard to either the delivery of education or its certification" and the criteria "Client-Centered" is defined as "focusing on the needs of students and employers rather than instructional providers...."<sup>10</sup> The defining characteristic that has been the focus of most of the discussion is "Competency-Based," which is described as "grounding the certification of learning on the demonstration of competency rather than the accumulation of credits or experiences, or judgements about the quality of providers."<sup>11</sup> These criteria again reflect perspectives of what higher education is not. In our own profession, there is the commonly held view that library school graduates are not equipped with the skills that are needed in the real world. Relying on measures of competency, at least at the macro level, appears to be an attractive alternative to a commonly held view that receiving a degree is measured in "seat time." However, actually measuring competency proves to be rather complicated. The WGU's initial offerings will be a certification program for electronic technicians and an associate of arts degree. The development, maintenance and assessment of competency measures in a distributed environment for a certificate or a degree are challenges of significant consequence. Successfully resolving these challenges is crucial to the success of the WGU and to distance education in general, since assuring the quality of the educational program is critical if a WGU degree or certificate is to be more than what can be received by mailing in the cover of a matchbook.

In the design of the WGU, it will perform two major functions. First, it will provide a central clearinghouse for students to identify distance education programs. These programs will be offered by both institutions of higher education and corporate sources. In many instances, these programs will be based on the traditional credit model.

In addition to the brokering function, the WGU will offer its own credentialing and certification programs. Development of these programs will be based on a request for proposal process (RFP) that will solicit proposals for courses or programs based on market demand. It is anticipated that the responses will result in offerings that may come from a single source or from a combination of providers. The WGU will have no faculty and will not develop its own courses.

Clearly, this will be a complicated administrative and management environment but the WGU is emerging with a very interesting, and potentially, very powerful solution. In a joint development program with IBM, the WGU is creating what is now called the SmartCatalog. This catalog will be much more than the simple course listings most colleges and universities now have on the World Wide Web. The SmartCatalog will be an interactive system with the student and the WGU working together towards the desired degree or certificate. As an example, a student enrolled in the WGU will follow his or her progress on the basis of documented competencies instead of accumulated credits. The competencies that are needed to complete a program are listed and a student will select the next competency he or she wishes to address. Interestingly, it is envisioned that once selected, the student will then be able to indicate the technology for course delivery and if the course is not available through an asynchronous or on-demand technology, the student will be able to indicate when they would like to take the course. Beyond scheduling, the SmartCatalog will offer access to advising, financial aid, and bookstore services. It will also provide the means for the student to communicate with other students that are registered in the course or program. This is an extremely ambitious development effort in which, when compared to the trials a student in traditional institutions must endure, the SmartCatalog is a major advance in providing student-centered services. The system will also capture management information that is far superior to that available in traditional institutions, providing the WGU with a significant advantage of being responsive to both students and the market place in delivering cost-effective education.

To the credit of the WGU design team, libraries were included in the implementation plan from the very beginning. The design team also recognized that both libraries and the technological infrastructure required to achieve the vision of the WGU are simply not available in all locations. One example is the lack of equitable access to the Internet for a student in Gold Hill, Utah, population 6 and 112 miles of dirt

road to the county seat. As an interim solution, the WGU proposes to establish Local Service Centers recognizing that "To ensure student success in the WVU, it is imperative that support services for learners be integrated into all aspects of the administrative and academic WVU infrastructure. Student support services can be thought of as three distinct types of support including administrative services, learning resources, and technology access. The range of services required, however, are too costly and complex to ask each education provider to duplicate." Library resources and services are included in the learning resources component which is described as "...those services which are necessary for success in completing a course or module including library services and academic support such as tutoring, electronic student discussion groups, study skill assistance and career guidance. Library services utilizing national and international data bases should be made available. Learning Resources also include placement testing, portfolio development and bookstore services."<sup>12</sup> The credibility of the WGU criteria of quality is enhanced through the recognition of the importance of support services, but as with many other components of the WGU, the details are yet to be resolved. Obviously, library services include more than access to electronic resources but the challenges of supporting an asynchronous, distributed curriculum are of significant interest. Equally interesting is the opportunity for libraries to assume additional responsibilities for the many services expected of a local center.

Needless to say, the questions relating to the WGU are not confined to libraries. One of the major implementation efforts has been the formulation of a business plan which in itself is an activity that distinguishes the WGU from the operations of traditional academia. The business plan projects that by 2006, 95,000 students will be enrolled in the WGU, generating total income of \$150 million. An important question in the business plan is the issue of tuition and specifically how much state subsidy will be provided for WGU students. While the financial projections will be very interesting to follow and will be a clear measure of the success of the WGU, there are many other questions, as would be expected. The leadership of the governors in the development of the WGU is truly unprecedented. Traditional models of administration in higher education, boards of regents or trustees, have been designed to provide some insulation for institutions from the contention of politics. With governors driving the WGU agenda, its position is significantly more vulnerable. Traditional models also provide a level continuity, while the direction of the WGU could easily be influenced by

election outcomes in one or two states. A key issue in the success of the WGU is the acceptance of WGU credentials by other institutions of higher education, particularly the state supported institutions in states participating in the WGU. Administratively, how do the competency based programs of the WGU translate to the familiar course credit for students transferring from the WGU to the traditional institutions of higher education. A much more complicated issue, and one with significant potential for contention is the acceptance of WGU certificates or degrees. Management of curriculum and acceptance of students has traditionally been the purview of the faculty. There is a potential for a collision between faculty guarding the quality of their programs and a governor expecting their acceptance of WGU credentials.

At the most basic level, there is the question of competition. In its early manifestations, the WGU was presented as a direct competitor, but more recently it is being described as complementary to the traditional programs of higher education. Regardless of the delicacy of the phrasing, the WGU constitutes an important example of an increasingly competitive education marketplace. To its credit, the WGU has encouraged traditional institutions to become more sensitive to needs of its students and of potential employers. However, the potential for conflict is clear when governors are placed in the position of presenting or approving state budgets that address the needs of traditional institutions which governors feel are not responsive, and the WGU which may well be under the governor's direct control.

This competitive market-place has serious implications for the Medical Library Association. A major strength of our association is its commitment to the continuing education of its members. Beyond the educational value to its members, these programs are now an important source of financial support for the operations of the association. The questions that have been raised about traditional higher education are also applicable to MLA. Is it responsive to the constituencies it serves? Are the rapidly changing needs of the members understood, and are programs to address these needs being developed in a timely manner? Are programs which are developed offered not at the association's convenience but when and where the member needs it? Is the quality of the programs being promoted to employers? Are the programs affordable? The defining question will surely be, why would a member of MLA chose its education program as opposed to a comparable course offered by an organization like the WGU?

While questions and concerns swirl about the WGU, it has clearly struck a responsive chord. In part, it is addressing some of the limitations of traditional higher education, but equally important it has recognized that in a knowledge-based economy, life-long education is a crucial component of success. The specific linkage of education to the needs of the business community has been one of the fundamental principles of the WGU. This involvement of business in the WGU extends to all aspects from needs assessment, curriculum development and governance. The interest of the business community in this new educational partnership is amply demonstrated by the WGU corporate partners which now include IBM, AT&T, Microsoft and Simon and Schuster.

Being responsive to the needs of the business community by providing employable graduates is an objective that is hard to argue with, but does this level of involvement compromise the independence and objectivity of that has been a hallmark of education? In a recent publication *The Monster Under the Bed*, with the revealing subtitle of *How Business is Mastering the Opportunity of Knowledge for Profit*, it is argued that we are in the midst of a transition from an education system that is primarily a government activity to a "business-led" system. Specifically, it suggests that "The establishment of business values in our educational system addresses the need to revive our economic leadership. The free market brought down communist and socialist governments around the world and is likely to bring down the hegemony of government-directed education. Maintaining any developed country's high standard of living will mean an emphasis on economic values over social and political ones. Future business dominance of the education function, therefore, will emphasize values such as competition, service, and standards."<sup>13</sup> Having survived the transformation of healthcare, at least to this point, there is much here that should sound familiar. The final question is clearly whether we can now look forward to a future where both healthcare and education are directed by accountants?

With the afflictions of managed care, the transformation of education, and the relentless developments in computing and networking technologies, the challenges and stress we face will not likely decrease. It can be argued that taking on the challenges and dealing with the stress are elements of doing a good job and are salient features of our profession. In an often used quote, Miss Annan began the first Doe Lecture with, "The medical librarian of 1967 lives in a period of changing concepts, dramatic new methods, everwidening horizons. To meet these challenges he must welcome the

future with patient flexibility and ready enthusiasm."<sup>14</sup> While there is some solace in seeing that in 1967 the work was viewed as complex and challenging, how do we navigate the complex environment that we now face? At the most fundamental level and a major factor that distinguishes our profession from other information specialties, our measure for decisions and for our success is our professional code of ethics. The introduction to the MLA Goals and Principals of Ethical Conduct states, "The health sciences librarian believes that knowledge is the sine qua non of informed decisions in health care, education, and research and the health sciences librarian serves society, clients, and the institution, by working to ensure that informed decisions can be made."<sup>15</sup>

The formal development of our code of ethics is due to the commitment and determination of Richard Lyders. His efforts on our behalf have and will serve us well. I must confess that in 1992 at our meeting Washington, as I approached the open forum that was held to discuss the draft code I was concerned that we were developing a stick instead of what has turned out for me at least, to be a valuable guide. It is to the credit of MLA and to Dick Lyders that our code focuses on our best traits and practices and that enforcement mechanisms have never entered the discussion. To illustrate the application of our code as a measure, there are two examples of our work at the University of Utah.

In 1986, we began construction of a campus network and needless to say, there was much discussion of how this new infrastructure should be funded. Initially, there were two schools of thought. The first were the "bit counters" who argued that funding should be based on utilization. Fortunately, the technology was not mature enough to implement this model. The second view was that the network was just like the telephone service and a connectivity fee should be assessed. Clearly, data networks have turned out to be much more than telephones, and as hard as it is to believe now, at that time the value of network services was not self-apparent and we wanted to encourage network use. Finally, we ended up with what became known as "the library model" for network services. In this model, a foundation of access to the network was to be provided to the community, supported by the institution in the same way the library is supported. While creating obvious fiscal challenges for the institution, challenges which were overcome, our library model stands up to the measure of our professional ethic that is expressed in our code as "The health sciences librarian

promotes access to health information for all and creates and maintains conditions of freedom of inquiry, thought, and expression that facilitate informed health care decisions."<sup>16</sup>

A somewhat less glorious example occurred as the University of Utah Health Sciences Center entered the managed care wars. At that time, we were asked to identify strategic advantages for the health sciences center. Since our library is the largest health sciences library in the state, it was easy to determine an immediate strategic advantage. With some embarrassment, I must confess considering strategies that would have rather easily put most of the hospital libraries in the state out of business. Clearly, capitalizing on this strategic advantage does not meet the measure of our code of ethics, but how often have we been told our libraries must support institutional goals and objectives? How often have our values been sacrificed in a competitive environment?

Equally important, our values collide with the undercurrents of control that flow through this new electronic environment. From the very beginning, this revolution has been driven by the most democratic of forces. The power of the technology is placed in the hands of the end-user, not in the mainframe, not in the computer center, not in the Chief Information Officer, not in big publishers. Expressions of control can be blatant like the battles we face with mega-conglomerate publishers or in the demands for filtering software, others are more subtle. Often there are pleas for more coordination or, a little more subtle, calls for standards. Coordination and standards do contribute to access but they are also suggested to ease problems of technical support at the cost of access and assert control. The vibrancy of this technological environment is due in large part to creativity and diversity which are easily crushed by control. These are complicated issues which will surely be followed by more, but our code of ethics provides us with steadfast guidance. In a recent article in the C&RL News, Lee Hisle, the president of ACRL, states it this way, "I believe that stability can come from our values: not from the way we do things, but by the beliefs we hold as immutable. By reaffirming, by changing when necessary, but most of all, by understanding those values most critical to us and to our profession, we can move into the future with confidence."<sup>17</sup>

From this secure foundation, we can look forward to an exciting future that we can and have the professional obligation to shape. During this last decade, we have

been at the center of an extraordinary transformation. We have witnessed the evolution of computers that once were the size and often sounded like sets of washers and dryers and now fit in the palm of your hand. We quickly recognized the opportunities that emerged as computing power migrated from the computer room to the desktop. A decade ago, computing power, which had long been applied to vast problems of calculation, demonstrated that combined with high-speed data networks, this power would revolutionize communications. ARPANET, CSNET, NSFNET, BITNET were once the province of a small segment of the academic community, but when they were molded together to form the Internet, the network of networks, libraries began the construction of libraries without walls. We quickly, although often with difficulty, linked our library systems to this new information infrastructure in the first major step in revolutionizing access to library resources. We built tools to further enhance access and services – DOCLINE, Grateful Med, Loansome Doc, Ariel, and most recently PubMed which combined with free access to MEDLINE is making health science information available to the world. Five years ago, an interesting application called Mosaic emerged from work at the National Center for Supercomputing Applications. It has proved to be the killer app of killer apps. Mosaic provided the foundation for what is now the World Wide Web - an application that has freed us all from the tyranny of character-based, command line driven network software. We are only at the beginning of the revolution brought on by the Web, but already we see the traditional models of scholarly communications collapsing, libraries assuming the role of publisher, and an environment where every person can now be a publisher.

Now many times more library patrons visit the library via the network than through the front door, and there are surely more killer apps over the horizon. However, we have yet to realize the power of these technologies that extend beyond calculation and communication to what is in fact also our best strategy for the future - the power of collaboration. In one of the more interesting of the futurist texts, What will be by Michael Dertouzos, the former chair of Department of Computer Science at MIT, Dertouzos projects that “Groupwork and telework modules, which allow several people in different locations to work on a task simultaneously or to build upon one another’s work by giving input at different times, could become the most useful tools of the Information Marketplace. They will provide a new and valuable function – linking people together effectively regardless of where they happen to be and when they can

be reached.”<sup>18</sup> Interestingly our initial efforts in this new computing and data communications environment took the first steps in exploiting the power of collaboration through the use of email and listservs. Medlib-L is deservedly recognized as our best collective effort but there are many subsets that function with varying degrees of success. While these early applications have served us well, we have not as yet been able to go much further. The obstacles in our path are not technological. The groupware tools or what is sometimes the more catchy name of teamware, are now appearing as integrated components of applications we all use like Netscape and Explorer. With each new release, these groupware tools become increasingly the focus of development. The obstacle in fact is us. To take full advantage of the power of collaborative technologies will require fundamental change, behavioral and cultural change. As any anthropologist recognizes, these are the most difficult changes, particularly in an environment that stresses independence, competition and self-interest. Exacerbating the problem are actual and perceived institutional constraints that limit our ability and willingness to invest our resources beyond institutional boundaries. Finally, there is the dark side of the technology which can as easily lead to isolation as to collaboration. There are numerous examples of how we have failed to seize the power of collaboration. Certainly one of the best and possibly the most ironic, is the hundreds if not thousands of times we have all independently reinvented the wheel of the Introduction to the Internet class. Ours is a profession that has long proclaimed itself as a model of cooperation. It is now time for us to go beyond cooperative cataloging and interlibrary loan. Our vision, our commitment, our resources must extend beyond our cubicle, our library, our institution.

The challenges that we face are of a scale that only through collaboration can they be addressed and allow us to succeed as a profession. The preeminent example which confronts us everyday, and may well be the defining challenge for our generation, is providing organized access to the extraordinary resources of the Internet. How often have we heard the great Internet lament of “Why can’t the Internet operate like a library?” Clearly there are powerful tools that can be applied to this problem and more will surely appear, but providing organized access to information is a crucial component of the most complex of processes, the discovery and creation of new knowledge. Dertouzos recognizes this challenge when he observes that “For a functional Information Marketplace, this chaos has to yield to guides and yellow pages

and software that won't just assemble mindless pairings of words and sites but will present you with a tidy, velvet-lined box of jewels – answers that truly and closely match your questions. This development will be difficult and require human editing because machines are not smart enough to do this kind organizing by themselves.”<sup>19</sup>

Each of us with a desktop computer, Internet browser and a network connection have taken on this problem. We have collected bookmarks, all with the sense that we haven't come close to solving the problem of scale. Many libraries have individually tried to collect and maintain lists of selected Internet resources. The lists have contributed to our patrons understanding of the value of the Internet, but the efforts are again frustrated by the problem of scale and haunted by a sense of futility. Recently, reports have begun appearing in the literature exploring collaborative models for providing organized access to Internet resources.<sup>20,21</sup> HealthWeb is the result of the collaborative efforts of 12 health sciences libraries of institutions that are members of the Committee on Institutional Cooperation with sponsorship by the Greater Midwestern Region of the National Network of Libraries of Medicine. This project is being deservedly recognized with this year's Rogers Award. The project has made substantial progress in identifying organizational issues and in developing tools that will assist in building an electronic collection of valuable resources. However, even with the resources of 12 major institutions, the magnitude of the problem remains. As an example, HealthWeb has identified over 160 excellent Ophthalmology resources but when Ophthalmology is searched through one of the standard Internet searching tools 130,000 possible resources are identified.

Offering organized access to the Internet is a challenge whose only chance for resolution is through a national collaboration. Fortunately for health sciences libraries, there is the an enabling infrastructure that is capable of supporting such a national effort – the National Network of Libraries of Medicine (NNLM). This national effort will require that the NNLM and the National Library of Medicine to also overcome the obstacles to collaboration we all confront. Significant resources must be reallocated but we know how to do document delivery, outreach and MEDLINE. Continuing to focus resources on polishing these diamonds will not advance our goals. Current contracting models need to be reconsidered since the focus is all too often on what we can't do and how to keep the contract. Libraries participating in this effort will need to address the reallocation of resources and investing in a national effort that extends

beyond the boundaries of their institutions. Our goal should be a credible national resource that will advance education, healthcare and research. Through this effort, the NNLM will surely achieve its promise.

Finally, we are here in Philadelphia celebrating the centennial of the founding of the Medical Library Association (MLA). Quite simply, MLA is our best example of the power of collaboration. Much of our success as a profession is due to the collaborative efforts fostered by our association but a superb annual meeting, excellent publications, and a commitment to continuing education are no longer enough. The future will require a responsive organization not targeted to continuing the operation of the association but on assuring that the members achieve their goals. The leadership and the administration should take full advantage of new technologies to encourage participation in the association and be able to rapidly respond to new opportunities. Equally important as members of a profession, we must recognize our responsibility to contribute to the profession through membership and participation in the association. In our assessment of the performance of librarians, participation in professional associations must be included in the evaluation along with the quality of teaching, research and service.

As we approach a new century, it is most likely a coincidence but certainly appropriate that the extraordinary adventures of Lewis and Clark have received so much attention. First in the wonderful book, *Undaunted Courage* by Stephen Ambrose which was followed by a beautiful documentary film. Ambrose quotes the Journals of Lewis and Clark as the expedition is about to leave country known on the maps of the day. "we were now about to penetrate country at least two thousand miles in width, on which the foot of civilized man had never trodden; the good or evil it had in store for us was for experiment yet to determine...however, as this the state of mind in which we are, generally gives the colouring to events, when the imagination is suffered to wander into futurity, the picture which now presented itself to me was a most pleasing one. entertaining as I do, the most confident hope of succeeding in a voyage which had formed a darling project of mine for the last ten years, I could but esteem this moment of my departure as among the most happy of my life."<sup>22</sup> It is hard to imagine what it must have been like to record the first encounter with antelope or the first chase by a grizzly bear. Great adventures are ahead for us although I hope they are somewhat less life threatening.

I would like to thank you for this honor and this opportunity. As we look forward to our next century, we have the advantage of a strong foundation of ethical values and a strategy of collaboration that will assure our success.

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