

**REPORT**

C-LIB Subcommittee on Digital Information Technologies  
in the Research Library Environment at Stanford

8 September 2008

The Library is the heart of the University. The University can take its place in the progress of the future, only by building on the work of the past. A great library is the most important element in the formation of a great University.

— David Starr Jordan to Jane Stanford, 20 December 1893

As a citadel of learning and as a platform for adventure on the Internet, the research library still deserves to stand at the center of the campus, preserving the past and accumulating energy for the future.

— Robert Darnton, *The New York Review of Books*, 12 June 2008

### **Brief of the Sub-Committee**

The present round of discussions about the libraries at Stanford was triggered by an announcement that Meyer Library was to be demolished within seven years because it was not economically feasible to retrofit the building against future earthquake damage. It was also announced that Meyer per se would not be replaced; rather, a smaller structure devoted to Academic Computing was to be planned. Meyer Library is the home to Stanford's East Asian Library: its mezzanine and basement contain about two-thirds of the collection of East Asian materials (approximately 350,000 volumes), with the remaining 180,000 already housed in SAL1 and SAL2. The basement of Meyer also contains about 200,000 volumes of the Green collections. In the manner of falling dominoes, the decision not to replace Meyer Library meant that the entire East Asian Library would have to be relocated, with the most likely candidate being Green Library itself. A good part of the current holdings of Green—collections across a wide range of disciplines and fields of research—would be moved to Stanford's SAL3 storage facility at Livermore. Faculty in many of the affected areas were alarmed by the specter of a good part of their research material leaving campus, especially because the cataloguing, retrieval, and delivery of material stored at SAL3 has not been without problems.

The CLIB sub-committee was originally charged to investigate and discuss the immediate situation facing the East Asian Library. Its first public act was to convene a Town Hall meeting in late November. Faculty were able to air their complaints and worries directly to the University Provost. In the context of his replies before this assembly, the outline became clear of an already existing high-level decision not to build any expansion of bookshelf space on the central campus. This direction took most of those in attendance by surprise, for the faculty had not been polled widely nor publicly on the issue. Following the Town Hall meeting, the Provost announced that destruction of Meyer was pushed back to about ten years hence, and he asked the CLIB sub-committee to draw up a broader charge for its inquiry. Although the seismic feasibility of this postponement has been questioned by some, the sub-committee operated during the 2007-08 academic year under the Provost's broadened mandate with the assumption that we were working with a ten-year frame of reference (see the Sub-Committee Charge, Appendix A).

### **Sub-Committee Members and Procedures**

The chair of the CLIB sub-committee was enlisted by Professor Douglas Brutlag, the presiding chair of the CLIB committee, and Michael A. Keller, ex-officio member of the CLIB committee and University Librarian. Faculty nominations to the sub-committee were solicited from members of CLIB and from the Dean of Humanities and Sciences. Graduate and undergraduate student members were solicited from the ASSU.

The committee was comprised of the following members: Professor John Bender (English), Professor Douglas Brutlag (Biochemistry), Professor Steven Carter (Asian Languages), Professor J. Michael Cherry (Genetics), Professor Carolyn Lougee (History), Betty Luan (student), Professor Michael Marrinan (Art History & sub-committee chair), Rachel Quint (student), Professor Matthew Sommer (History), Daniel Stringer (student), Professor Chao Fen Sun (Asian Languages), Professor Andrew Walder (Sociology), Professor Richard White (History), Professor Gavin Wright (Economics).

Because an important part of the sub-committee's mandate was to engage a conversation about the libraries with the faculty across a broad spectrum of disciplines, the first order of business was to contact departments across the School of H&S with the goal of beginning discussions about the libraries at Stanford. Some of the sub-committee members visited several of the departments during scheduled faculty meetings to describe the situation and to underscore its importance. During January and February 2008 every department chair was contacted by the sub-committee to ask that discussions within departments begin as soon as possible, and requesting a written, formal response by 1 April 2008. The sub-committee was very gratified to receive thoughtful responses from all but a handful of chairs (see the Department Reports, Appendix B).

The sub-committee met eight times during the Spring Term 2008. The first sessions were given over to reading through and discussing the statements received from department chairs, with the aim of distilling some recurring themes across the School. Following meetings were devoted to enlarging the discussion of these points, considering the direction taken by Stanford University and the Libraries in general relative to our peer institutions, and identifying principles and policy recommendations that might be made. The shape and general content of the committee's report were debated at the final meetings.

### **Order of the Sub-committee Report**

The main body of this sub-committee report comprises eight sections. The recommendations section is divided into three parts: principles, policy review, and specific actions. The last are broken down into two groups: actions to take before Meyer Library is demolished; actions to take in concert with the demolition of Meyer. Three Appendices are attached to the report.

1. General Context of Current Discussions about Research Libraries
2. The Stanford Situation

3. Review of the Faculty Consultation and Reports
4. Review of the Sub-committee Discussions
5. Recommendations: Guiding Principles for a Transition from Paper to Electronic Resources
6. Recommendations: Policy Revisions and New Directions
7. Recommendations: Proposed Sequence of Events to Mitigate the Demolition of Meyer Library
  - a. Before the Demolition of Meyer Library
  - b. Concomitant with the Demolition of Meyer Library
8. Conclusion

Appendix A: Charge to the C-LIB sub-committee

Appendix B: Responses from department chairs in the School of H&S

Appendix C: Responses from individual faculty members in the School of H&S

## 1. General Context of Current Discussions about Research Libraries

**LIBRARY.** A building, room, or set of rooms, containing a collection of books for the use of the public or of some particular portion of it, or of the members of some society or the like; a public institution or establishment, charged with the care of a collection of books, and the duty of rendering the books accessible to those who require to use them. — *Oxford English Dictionary Online*, © Oxford University Press 2008

Traditional libraries tend to be vertically integrated by default. Whether housed in a single room, a dedicated building, or even clusters of buildings, the various services of a library have always been linked to a common purpose—accessing the knowledge of books—by the simple mechanism of cohabitation. Catalogues stood alongside reading areas and adjacent to shelves of books. Library professionals were close at hand. These components were further integrated by face-to-face interactions among staff and users in close proximity to both books and catalogues. The connective tissue, despite an institutional rule of silence, was *viva voce* and demonstrative. Even in those great European libraries where books are locked in stacks, the circulation of texts—and consequently of ideas both old and new—was part of a social network literally housed under a single roof. In the pre-digital world, virtually the same structure prevailed in libraries serving disciplines quite remote from the humanities and social sciences.

Most of Stanford's current faculty were trained using libraries of the sort just described. One of the ancillary products of an architecturally-determined, vertical integration is the opportunity for the kind of zigzag research usually called "browsing." Without necessarily knowing in advance where one is headed, browsing entails moving from catalogue to stacks, from shelf to shelf, from aisle to aisle, and perhaps back to the catalogue in a

productive process of exploration that frequently leads to a moment of insight and discovery. Browsing is not a search through a vast panorama of knowledge. Indeed, the qualitative differences between browsing and searching are non-trivial. As James Evans shows in a recent article published in *Science* (18 July 2008), “*print browsing and perusal may have facilitated broader comparisons*” not possible with the focused techniques of large-scale searching. One of the paradoxes uncovered by Evans’s research is that when more articles are accessible online, researchers cite fewer and increasingly more recent articles: “*If online researchers can more easily find prevailing opinion, they are more likely to follow it, leading to more citations referencing fewer articles.*”

There can be no doubt that the stacks of any given library, at any give moment, offer but a small “snapshot” of what is known in any field, but that fact does not gainsay the important distinction between searching and browsing. Nor can one say that browsing is a process inherent to some materials more than others: no single category of book is more “browsable” than another. Browsing is a spatial practice within a physical domain described by an immediate research question. It is a process of discovery intimately shaped by the structures of a vertically-integrated library: at once human in scale (a reader’s body moves physically through a library), and psychologically satisfying for its moments of insight. Libraries of the future, whatever technologies they embody, should be mindful of this tradition and be designed to enhance the benefits of browsing, not render it obsolete.

We open this section on background with some reflections on browsing because the single most repeated comment we received from faculty across the University was the importance of browsing to their research, and their concern for its survival. There can be no doubt that the ideal of a vertically integrated library has been under siege for several decades. The sheer volume of new publications—both books and serials—has taxed the physical limits of research libraries around the world. Librarians have struggled mightily to preserve something of the vertical integration that makes libraries good places to do scholarly research, but they have been increasingly forced to spread their resources laterally. That Stanford is not alone in this dilemma is made clear by an important new study published by Ithaka—an independent not-for-profit organization whose mission is to accelerate the productive uses of information technologies for the benefit of higher education worldwide. The Ithaka report, based on 4,100 responses from faculty and 350 responses from librarians, documents the spread of library resources across three interrelated roles: as purchaser of materials, as archivist guaranteeing preservation of materials, and as gateway to materials for faculty and student researchers (*Studies of Key Stakeholders in the Digital Transformation in Higher Education*, August 2008). We will refer to the Ithaka document at several points in the course of this report.

Nearly every major library has built off-site storage of one kind or another simply to house the annual flood of new volumes (the University of Chicago is a notable exception to this trend). High-density storage facilities, like Stanford’s at Livermore, are truly remarkable machines designed to ensure that no materials are lost. But they have nothing in common with libraries. Rather, they employ procedures used by companies like Toyota to store spare parts: it makes no difference to the filing system what a book is about, because the

only parameters that matter are a book's physical dimensions and coordinates in a grid of shelves and aisles. These austere machines are the automated "back ends" of most research libraries, but they are useless to scholars without appropriate "front ends" tailored to the needs of research. Even when those are in place, costly procedures for retrieving and delivering off-site books threaten to destabilize already tight library budgets.

For many years it was believed that microfilm and microfiche would displace the need for physical access to bulky volumes but, as nearly everyone now recognizes, those film-based technologies are already dead. Digital scanning of physical books, and electronic-only publishing with on-demand hard copies, now hold center-stage as darlings of the moment to face the challenges presented by the evermore horizontal dispersion of a library's components. The working ideal is that something like vertical integration will be re-established on the computer desktop of each and every user. At Stanford, for example, one of the assumptions and programmatic resolutions of the SULAIR document *Guiding Principles and General Plan* (revised April 2005) is: "Our effort will be to maximize desktop access to content." We will have more to say about this goal further in our report, but we signal here, at the outset, that Stanford faculty across H&S now buy into this ideal with varying levels of commitment depending upon their areas of research. At the same time, faculty want physical access to library facilities and infrastructure in order to ensure that their research programs are uninterrupted during the current period of transition.

Most recently, every serious effort to think through these issues of storage and access has been skewed by the arrival of Google Books. Google's ambitious program of working with a handful of major research libraries (including Stanford) to digitize en masse their holdings, to "crawl" the scans with their page-ranking algorithms, and to post them on the web where they might be accessible to anyone connected to the internet holds out the utopia of an almost unlimited horizon of information. Robert Darnton, a highly distinguished historian of France who now is head librarian of Harvard University, has argued in an important article published in the *New York Review of Books* and the *Bulletin of the American Academy*, that Google's claim it can put virtually all books online is misleading, and it "raises the danger of creating false consciousness, because it may lull us into neglecting our libraries." Never mind the important holdings of Special Collections that will probably never be scanned by Google; never mind that today's optical character recognition programs deal very badly with non-Roman characters and almost not at all with visual images; never mind the legal difficulties of copyright presented by recent and future publications; never mind the possibility that the solutions and media used today by Google might very well go the way of microfilm: Darnton believes that library users should worry because Google's algorithms for ranking pages do not reflect "standards prescribed by bibliographers, such as the first edition to appear in print," but tend to sort a page according to the frequency of its use and the number of links that point to it. One member of our committee, Professor Steven Carter, pointed out that three decades of scholarship dedicated, in large part, to reshaping the canon of many disciplines risks being undone by Google's ranking system based on the number of page requests and links from other pages. Nonetheless, Stanford is at the forefront of major universities who have embraced the Google Books initiative as the wave of the future in research libraries.

Our committee, as we shall argue below, has concluded that a headlong leap into Google Books does not hold out equal promise to all disciplines within the University and threatens, in fact, to stifle research in some of them. We have tried to ask: what type of planning would we be doing today if Google Books had not come along?

## **2. The Stanford Situation**

Most members of the Stanford community know about GUP, the General Use Permit agreement between the University and Santa Clara County to regulate the amount of building and development that can be undertaken on Stanford land. The current GUP agreement, signed in 2000 for a period of ten years, limits construction of new academic and academic support uses to slightly more than 2 million square feet. Our committee recognizes that the GUP negotiations were very lengthy and difficult, and that the present agreement cannot be subject to second-guessing. Nonetheless, our committee was also shocked to discover that structures for storing books are counted toward the GUP building area cap while housing and parking structures are not so counted (GUP Section A.3.b-c). If, as is usually stated, the GUP exists to ensure that Stanford development does not contribute to a degradation of the environment and quality of life of our surrounding communities, we cannot fathom how or why book storage remains part of the calculations. Books do not contribute to local traffic congestion, do not pollute the soil with toxic wastes, do not place demands on water or sewage systems, and do not release hydrocarbons into the atmosphere. By contrast, housing and parking structures—both excluded from the GUP building area cap—affect adversely all of these categories.

Stanford administrators invoke area cap limits established by the GUP to argue against building any more “warehouses for books” (the term is the Provost’s) on center campus, and to support decisions that will move an ever larger part of the University’s library materials to off-campus storage. Paradoxically, this direction means that trucks carrying books from off-campus facilities to researchers on campus will only add to the traffic and pollution of the region. Little of this makes much sense to our committee. One of our recommendations below will address this perplexing state of affairs by insisting that the next round of GUP negotiations specifically exempt book storage, like housing and parking structures, from the building area cap. For the moment, we remark only that the GUP has created a situation in which central campus land is at a premium at Stanford, and is most often allocated to programs, institutes, and professional schools armed with fund-raising muscle and vast reserves of endowment. In the jockeying for GUP space, the libraries have had few advocates, and decisions have been made without consulting those most affected by them: namely the faculty.

Today, Stanford finds itself in an unusual position relative to its peer institutions, because Berkeley, Princeton, Chicago, Yale, Harvard, and the University of Toronto have either just completed or are planning ambitious programs to build new libraries in their core campus areas. Using the GUP as an excuse for slowing or stopping development of Stanford’s on-campus libraries strikes our committee as wrong-headed and seriously short-sighted. Limitations imposed by the GUP have not stopped the expansion of Stanford’s scientific

laboratories and professional schools. We realize that comparisons with our peers do not make strong practical arguments, but choosing not to invest in the core campus libraries certainly places Stanford in a competitive position that is less than favorable, and will affect the choices of potential students and faculty in the years to come.

### **3. Review of the Faculty Consultation and Reports**

The sub-committee received substantial replies to its query from nine department chairs. A further eight departments sent us short or summary replies. A full ten departments did not reply at all (see Appendix B for the full complement of replies). In addition, several individuals wrote to us on their own to articulate their views of the situation (see Appendix C).

Our first impression was that interest in the research library issue was breaking amongst the departments along the so-called “two cultures” border separating the sciences from the humanities. In fact, this was not the case: several mainstream humanities departments chose not to reply, while several science and social science departments replied in extenso. Whatever the lacunae in our returns, the sub-committee is convinced that our meetings with departments, along with the responses from departmental chairs, present a viable sampling of thinking from the faculty on this important issue. In fact, our findings on disciplinary groupings and variations correspond closely to those published in the recent Ithaka study mentioned earlier.

The recurring issues identified by the sub-committee’s analysis of the department responses can be outlined as follows:

- A robust insistence across disciplines that browsing books remains an integral part of a scholar’s activity, both for specialized research and for general inquiries related to preparing courses. Faculty who emphasize the value of physical browsing are also regular users of the library’s online electronic resources. Faculty do not view these modes as mutually exclusive, but deeply complementary: the response we received from one member of the Physics Department makes this point eloquently (see Appendix C). Although the mix changes from one discipline to another, and will probably shift over time as a new generation of faculty replaces professors now in place, our colleagues believe that browsing in some form will remain central to their research and teaching for quite some time.
- Widespread misgivings about the current criteria for moving books from central campus to off-site storage. Usually this concerns the level of a book’s circulation, as set out by the SULAIR document *Guiding Principles and General Plan* (revised April 2005). Many faculty expressed the sentiment that deciding a book’s location based on usage or circulation statistics is not working to their benefit.
- Repeated worries by faculty across disciplines about the ability of optical character recognition to allow massive indexing and word searches for non-Roman characters.

Digital advocates predict that such technology can be expected in the near future. Nonetheless, faculty users of Japanese, Korean, Chinese, Cyrillic, Hebrew, and other non-Roman languages, along with disciplines that depend heavily upon graphic or symbolic notations (Mathematics, Drama, History of Art), fear that digital forms of their materials will not prove viable or affordable in the short to mid-term. Last year nearly one-third of all the acquisitions made by Stanford Libraries were written in languages using non-Roman characters. There is good reason for faculty resistance to plunging headlong into a program of digitizing materials with no guarantee that they will be accessible in the short to mid-term. Simple page scans, without character recognition or word-search ability, are virtually useless for research purposes.

- A surprising consensus amongst faculty across several disciplines that periodicals are much more adaptable than books to online electronic storage. There are several reasons for this: first, established services such as MedLine and JSTOR are rapidly covering both current periodicals and catching up with back issues; second, periodicals by their nature are usually searched with exact reference points (volume, date, pages), and this type of inquiry is readily exported to database structures; third, even if a periodical cannot be found online and is stored off-site, specific references tend to simplify accurate retrieval or off-site copying for delivery via email or PDF. By contrast, books are less able to be parsed neatly, and they demand the type of subject searching and turning of pages usually associated with browsing. While there are rare instances when special numbers of a journal bring together thematically-related articles in a book-like fashion, this is the exception rather than the rule.
- Complaints about the present state of Socrates, both with the user interface and the level of underlying cataloguing. Newer books, which receive catalog information from central sources (such as the Library of Congress) are generally not the problem. Rather, books published between thirty and one-hundred years ago—most of which were originally catalogued on cards—suffer most often from inadequate catalog entries. Multiple volume sets or collections often have nothing but the volumes listed, with no indication the contents included in each volume. The situation becomes dramatic in some instances, such as sets in Chinese, Japanese, and Korean that number in the thousands of volumes with almost no analytic cataloguing completed. When sets like these are sent to off-site storage, usually because of low circulation rates, campus researchers have no alternative but to request the entire set. These examples raise starkly the relationship between robust cataloguing and off-site storage that figured importantly in the sub-committee's internal discussions (as noted below).
- Faculty in the Humanities often draw an analogy between the libraries of the University and the extensive laboratories built on campus for research in the sciences. There are attractive aspects of this comparison, many of which are more rhetorical than actual. But there are also material considerations felt deeply by humanist scholars at Stanford and worthy of note. The most important is: where does one work? The work space of most humanities faculty usually consists of a departmental

office and a personal study at home. In some cases, senior faculty of long standing also occupy small studies in Green Library. Junior faculty, by contrast, have little alternative other than working at home or in their department. Every department knows about the mandate to reduce the size of tenure-line faculty offices on the central campus to 160 square feet, or the equivalent of 10 by 16 feet (*Stanford University Space Planning Guidelines*, rev. July 2007, p. 11). For humanities faculty the libraries are important extensions of seriously constricted working space. Naturally, any plan to move large numbers of books from central campus constitutes a real threat to their research: where will one put several hundred books that might be recalled from Livermore? One answer, as suggested by several departments, would be to begin treating the library more like a laboratory building, with modular research centers assigned to faculty for the duration of specific research projects and then reassigned when those projects are completed. We will have more to say about this suggestion in our recommendations.

- Faculty are not happy that students, especially undergraduates, think “research” means running a series of Google or Wikipedia searches from their dorm room the night before a paper is due. They need and want to work more closely with libraries and librarians to ensure that students are introduced to the tools and rewards of research using the rich store of primary materials that might never become part of a database. The physical and technological changes occurring in research libraries do not simply solve problems, they also create new ones. New working environments require new services for library users that include: new levels of technical assistance, new ways of introducing students to the vast resources of the library, new ways of incorporating these resources into the classroom. Faculty expect the libraries to provide pedagogical support for both print media and electronic resources, not one at the expense of the other.

#### **4. Review of the Sub-committee Discussions**

Given its charge and goal of providing the faculty a voice in discussions about the libraries at Stanford, the sub-committee began deliberations by reading closely the departmental replies and notes from our meetings with faculty, and by formulating the synopsis outlined in Part 3 of this report. In the course of those discussions, the sub-committee began to think laterally about some of the larger issues implicit in the themes generated by the departments. Further discussions brought these issues into sharper focus. They are listed below in an order of importance that clarifies their interdependence.

- Technological change in the structure of libraries raises an important question: does technology drive research in every discipline? No one doubts that electronic research tools are already mainstream in science and engineering, and rather less so in the humanities. Why is this? Research in science and engineering consists mainly of articles, often written in collaboration, and published in an environment of intense competition. Timely publication of results is of the essence. In such an environment, the speed of electronic publishing, and the reach of automated cross-indexing,

establish claims for the originality and importance of ongoing research. The intellectual life of these disciplines depends upon tools very much in step with the ambitions of vast search engines like Google and with large databases like MedLine. The question is whether the same ambitions ought to shape the entire library system of a university like Stanford. Are they appropriate to fields of study with different traditions of research? Consider disciplines that work with historic materials, and where scholarly publishing consists mainly of synthetic monographs. Faculty in such fields should not be made to reinvent themselves to conform to changes in technology at the heart of the library, which is their basic tool of research. Tools should not dictate practice; rather, tools and practice evolve over time within a process of trial and error. This process has certainly begun in all of the humanities, but it should not be “speeded up” in some artificial way. Nor should we assume, when making policy for the future, that the endpoint of this evolutionary process has already arrived.

The sub-committee does not doubt that evolving information technologies will eventually alter the conduct of research in every discipline. To cite a key line from the important Ithaka study: *“Different disciplines have dramatically different needs, interests, and priorities. An understanding of these differences must guide campus information strategy: a ‘one size fits all’ solution will not, in fact, fit all.”* We believe an engineering library cannot serve as model for the research facilities of a humanities and social science faculty. Changes in research tools ought not to be driven by information technology, but by changes within the faculty itself as it renews over time. Young humanities scholars trained from the outset to use electronic materials will eventually move them into the mainstream of disciplinary practice. The sub-committee believes it will require at least two generations of faculty renewal—something like 50 years—before electronic media take precedence over paper support in some fields of inquiry. Even then, serious research libraries will need to be hybrid institutions, able to fulfill seamlessly, and at the highest level, the needs of scholars working on both sides of the electronic/paper divide.

- If, as we believe, a protracted time-frame of coexistence is at issue a second question arises: how should we proceed? Keeping in mind that personal computers first appeared only 25 years ago, how can we make decisions that will remain viable for at least half a century? The partnership between Stanford Libraries and Google Books incarnates a decision of that importance and magnitude. The sub-committee does not question the wisdom of that partnership, but we do worry that Stanford’s commitment may blind the library to thinking about alternate long-term solutions. Google is certainly the current leader in web-searching technology, and it does have deep pockets with which to fund its book project. Yet those positive virtues should not prevent us from pointing out that Google’s book scans are not free of errors. What would we be doing—and with whom—if Google did not exist?

The sub-committee worries that companies and their technologies come and go, while the library must always think in the very long term. Will Google exist 150 years from now? Surely we expect that Stanford and its libraries will be alive and well.

Will the data currently being gathered by Google be readable 150 years from now? Relative to the proven life span of printed books, electronic storage has barely taken two steps, and yet one discovers that supposedly “permanent” media, such as tapes and CDs, disintegrate and have become unreadable within decades rather than centuries. Even if Google successfully completes its projected scan of 15 million volumes, who will continue the project, and using what technologies and catalogue protocols? How will bibliographic order and hierarchy be brought to the flattened field of vast knowledge assembled by the Google project, and who will do this work? The sub-committee believes that libraries must not leave this specialized task to the automated search engines of Google.

- A modern research library cannot avoid distributing its energy among core campus collections, off-site storage, and online electronic resources. Therefore, the sub-committee came to realize that the quality of the library’s catalogue is of central importance. Our discussions were originally motivated by faculty complaints with the present state of Socrates—both its user interface and its underlying indexing. It became increasingly clear that the catalogue is the binding agent able to join all of the library’s resources into something like a vertically integrated whole. An important conclusion of the Ithaka report is that faculty and students are bypassing libraries as their principal gateway to information in favor of search engines like Google, without reflecting on how their reach is defined by commercial interests and copyright laws. We want to ensure that the SUL system—driven by a commitment to acquiring proprietary materials—remains the portal of preference for Stanford researchers by offering seamless methods of searching and browsing across its vast holdings of print and digital media. Consequently, we will make several recommendations about improving the catalogue (see below).
- The topic of integrating the library’s different components led the sub-committee to consider three interconnected issues. The first was inspired by faculty dissatisfaction with the criteria for moving books from campus to off-site storage. We were generally convinced by the faculty’s observation that serials could be more easily accessed—and paged when necessary—than books, and so agreed to recommend changes in those criteria (see below). The second topic discussed concerned the relationship between Green Library and the two on-campus storage facilities SAL1 and SAL 2. The sub-committee wondered why, in the context of contested GUP space, the two auxiliary libraries already on campus were not more fully integrated into the core collections.

We believe that shifting the role of SAL1 and SAL 2 offers a temporary to mid-term solution to the crisis of the East Asian Library and will recommend several measures to that effect. Finally, these discussions led the sub-committee to consider an optimal size for the on-campus collection of books, in light of the projected loss of book space with the demolition of Meyer Library and the inherently temporary nature of SAL1 and SAL2. The sub-committee looks quite unfavorably upon any net loss of on-campus book shelf space. Our rationale for recommending a state-of-the-art book

stacks of compact shelving accessible to users, built contiguous to Green Library and possibly underground, is discussed below.

- Faculty use of the analogy between libraries and laboratories stimulated lengthy discussion within the sub-committee about the range of services that should be part of the research library environment. One crucial component is a range of discrete architectural spaces where books called from storage might be placed and used during specific research projects. We realized that such spaces are mirrored by their complements in the virtual space of electronic media. Since few library users have the technical expertise to design specialized research portals, there will be a growing need for this type of support from the libraries. Once electronic material is found, one must have disk space to store it and database tools to retrieve it when needed. All of which requires resources—both physical storage and technical assistance—that the libraries should be able to offer both faculty and graduate students in support of their research.

## **5. Recommendations: Guidelines for a Transition from Paper to Electronic Resources**

Items under this rubric signal general objectives based on two working premises. The first is that for a period of at least 50 years the library will be comprised of both print and electronic support, and will need to deliver both at equal levels of competence. The second is that one goal during this period is to simulate the vertical integration of resources characteristic of a research library environment where browsing is both possible and productive.

The sub-committee recommends adoption of the following initiatives:

- *Project for Catalogue Renewal*  
A broad-based initiative to incorporate as quickly as possible both non-Roman characters and non-textual media materials into the catalogue with meaningful layers of indexing. The development of a new Graphical User Interface based on Web 2.0 protocols (e.g., Lens). Every catalogue entry should include scanned and searchable images of the title page, table of contents, and index (if it exists). Catalogue entries for older books originally listed on paper cards must be revisited, updated, and completed by library professionals. Entries for multi-volume sets and series must be regularized and completed so that users are given a full snapshot of the entire contents. This is particularly important when paging volumes from whole sets or series housed in off-campus storage. The sub-committee realizes that remedial work on the catalogue is expensive and time-consuming: nonetheless, the catalogue renewal project should become a constant, long-term budget item supported by appropriate levels of additional funding.
- *Research Modules*  
The constitution of architectural spaces devoted to research modules assigned to

classes or research projects, where off-site books can be stored and consulted, and where faculty and staff are able to work with the materials close at hand. These spaces should become part of any future architectural programming for the libraries.

- *Research Portals*  
The constitution of virtual spaces devoted to research center modules comprised of research portals customized to specific projects, on-line data storage for the materials gathered, and database design for accessing the material in complex ways. Part of this might involve developing templates that could be modified for specific purposes. We envision staff support similar to the current program of ATS working in departments, but on a much larger and more highly personalized scale.
- *Browsing Model Project*  
Fast-track development of a working model in which the experience and intellectual yield of physically browsing books are replicated in an environment comprised of both paper and electronic materials. This will probably involve intense graphics and three-dimensional imaging. We believe that building such a model will convince skeptical faculty about the potential of working with new technologies, and force the library to deliver services that have, up to now, been mainly promises for the future. Budget for developing the model should be supported by incremental funding.
- *Faculty/Library Interaction*  
The sub-committee believes that faculty will more readily adapt their research and teaching habits to the evolving technologies if encouraged to work in close cooperation with library professionals. We want to encourage faculty to engage librarians and ATS personnel when designing courses so that students understand the many dimensions of research beyond a Google inquiry. To this end, we want to emphasize that library professionals should remain on center campus and not be caught up in the exodus to off-campus offices.

## 6. Recommendations: Policy Revisions and New Directions

Items under this rubric signal recommendations that do not tally with current policy and imply either a reversal or modification of established practice. The first four items modify in some way policies set out in the SULAIR document *Guiding Principles and General Plan* (revised April 2005). Citations in the recommendations below are from this document. The final two items address policies adopted or implied by the administration of the university.

- Given the expression of faculty dissatisfaction with the established criterion that specifies “*lowest use material will be candidates for SAL3,*” we recommend that serials become the first candidates for transfer to Livermore from Green, SAL1 and SAL2. We estimate that almost 700,000 volumes can be removed quickly from the campus center. Details about exceptions to this policy can be worked out between the library and interested faculty or departments.

- We recommend that SUL modify its emphasis when explaining its primary mission. We believe it is not “*to maximize desktop access to content*,” but to provide the most supple and flexible support in a hybrid environment of print and electronic materials.
- It is not sufficient that “*all materials housed in SAL3 will have records in Socrates*,” nor adequate that one will “*strive to enhance bibliographic and table of content access to materials in SAL3*.” We believe it is absolutely essential that the title page, table of contents, and index of any book moved off-site be scanned and searchable from within the online catalogue, and that the catalogue entry is itself robust. We thus recommend the following principle:

*No book is to be transferred to SAL3 (Livermore) until its cataloging has been updated and deepened when necessary, nor before its title page, table of contents, and index are scanned and fully searchable. As a corollary, any book recalled from SAL3 for use on campus must pass a catalogue review and scanning of its title page, table of contents, and index before being returned to off-site storage.*

- We recommend rethinking the whole issue of auxiliary libraries. Given the center campus space constrictions currently in place under the GUP, we recommend repurposing the on-campus auxiliary libraries (SAL1 and SAL2), since they already possess the precious quality of being part of the core campus. We believe they will more usefully serve the research needs of faculty and students if more closely integrated with the collections of Green. This means treating them less as auxiliary libraries and more as part of the core-campus collection. To that end, accommodating larger parts of the Green collection also implies shifting more of their present holdings to SAL3 (Livermore), increasing the paging service between SAL1, SAL2 and Green—probably to four or more times a day using golf carts or bicycles—and keeping SAL1 and SAL2 open on the same schedule as Green. Finally, we recommend a strenuous effort to improve the integration of SAL3. It is not sufficient to have “*a goal of 24-hour turnaround and direct delivery*” from Livermore to Green. A one-day turnaround must be delivered by whatever means, and paging must be maintained during periods of holiday and intercession.
- We have already stated that the sub-committee strongly objects to any reduction in the amount of space allotted to books on center campus. The planned demolition of Meyer Library will displace approximately 550,000 volumes. We cannot accept this loss. Indeed, we recommend rethinking the size of the on-campus collection. Globally, our calculations are guided by the following statistics:

Green Library	contains about	3,001,800 volumes
East Asian Library	contains about	516,000 volumes
SAL1	contains about	300,000 volumes
SAL2	contains about	1,026,000 volumes

These center campus collections comprise about 4,840,000 volumes

Over the next ten years, that is, until the demolition of Meyer, the library will acquire books at the rate of about 60,000 per year for a total of 600,000.

Adding the current number of books on center campus to the number of new books projected gives a total of slightly more than 5.4 million volumes

We believe that 5.5 million volumes is a useful and practical figure for the size of a core collection based on center campus.

*To house this collection, we recommend building a structure in close proximity to Green, possibly underground, featuring state-of-the-art compact shelving with books arranged by call number and accessible for browsing by users. It should hold about 4 million volumes, including all of East Asian, all of the capacity of the present SAL1 and SAL2 and about one-half of the present contents of Green. Staff offices and reference areas for the East Asian Library could well find a place in this new structure, along with the research modules we have projected and increased faculty studies.*

We believe a campus collection of this size, along with good paging procedures with Livermore and increased online electronic resources, will convince faculty and students across the schools and departments that Stanford's commitment to their research is deep and abiding.

- The sub-committee, as noted earlier, was shocked to discover that book storage is counted towards the GUP building area cap while housing and parking structures are not so counted. We were also dismayed that the University negotiators agreed to these terms which are so detrimental to the well-being of the campus libraries.

*We recommend therefore, that when GUP comes up for re-negotiation in 2010, Stanford strenuously and adamantly insist that areas devoted to book storage be removed from the counted building area cap.*

## **7. Recommendations: Proposed Sequence of Events to Mitigate the Demolition of Meyer Library**

Items under this rubric outline a specific number of steps that could be taken to defuse the crisis mentality set in motion by the announced demolition of Meyer Library, especially with regard to the East Asian Library. The sub-committee divided its thinking into two parts: steps that it recommends to prepare for the eventual disappearance of Meyer Library; steps that it recommends at the time of the demolition. It should be emphasized that the measures noted below are part of a comprehensive view of the libraries over the next 10 years, and should not be read in isolation without taking the full context into account. Finally, we note that our recommendations have been discussed with and among the Asian Studies faculty, who have endorsed them as both practical and beneficial for the well-being of their program.

**a. Before the Demolition of Meyer Library**

- Continue with dispatch the planning and construction of a second high-density storage module in Livermore (SAL3). Much of what we recommend in the following stages is predicated on there being adequate space for the transfer of books to the Livermore facility.
- Move as many serials as possible from Green, SAL1 and SAL2 to SAL3 storage. This will involve about 543,000 volumes from Green, 172,000 from SAL1 and about 5,200 volumes from SAL2. The total number could approach 720,000 volumes.
- Move as quickly as possible sufficient volumes from SAL1 and SAL2 to clear space for approximately 550,000 volumes to be displaced by the destruction of Meyer. This move involves about 375,000 volumes over and above the serials targeted by the previous point.
- Move the contents of the Meyer mezzanine and basement (about 550,000 volumes) to SAL1 and SAL2. Consolidate the East Asian Library holdings of about 530,000 volumes in SAL1 and SAL2, and make cosmetic improvements to those buildings to house temporarily the East Asian Library staff and to accommodate faculty and student users.
- Augment the integration of SAL1 and SAL2 with Green Library by increasing the number of daily page runs to at least four per day.
- Begin a pilot program of “research modules” within Green by modifying some of the floor space opened up when the serials are moved to SAL3.
- Plan and begin construction of a new compact shelving facility in proximity to Green destined to hold approximately 4 million volumes, and perhaps to house East Asian Library staff along with a number of research modules and faculty studies.

**b. Concomitant with the Demolition of Meyer Library**

- Move East Asian Library from SAL1 and SAL2 to the new compact shelving storage facility.
- Move remaining volumes of the core collection from SAL1 and SAL2 to the new compact shelving storage facility.
- Move remaining, non-core volumes in SAL1 and SAL2 to SAL3 in Livermore.
- Move approximately 1.5 million volumes from Green to the new compact shelving storage facility.
- Destroy Meyer Library, SAL1 and SAL2.

- Remodel Green to convert the space freed by the removal of 1.5 million volumes into a large number of research modules for use by faculty and graduate students, and to provide offices for an expanded staff of ATS-like research support.

## 8. Conclusion

The measures outlined in this report fall generally under the heading of infrastructure. The sub-committee recognizes that attention to infrastructure is not terribly “sexy” but is essential to the long-term well-being of any institution. Several years ago, when the streets around campus were torn up by the project to install fiber optic networks underground, many of us were temporarily annoyed. Today, when we log on to the internet with blazing speeds, how many of us remember that annoyance? All that matters is that our connections are fast and dependable, and those buried fiber cables guarantee that we are not disappointed. Most of the recommendations we have made in this report qualify as improvements to infrastructure—improvements that are desperately needed because, in our view, the libraries at Stanford have not been funded with the largesse and vision showered on the research laboratories of the scientists and engineers in our midst.

In his annual report to the Senate of 29 May 2008, Provost Etchemendy remarked that the Capital Plan for the years 2009 through 2011 is the largest in Stanford’s history and offers *“an infrastructure that has revitalized our science, engineering and medicine infrastructure; improved the arts facilities; and improved faculty, staff, and student housing. It also includes the North Campus development.”* Our sub-committee believes that all of this is good for Stanford, but laments the fact that the libraries had no place in the Provost’s litany of accomplishments to expect in the next several years. We also believe that any talk of increasing the size of the student population at Stanford is premature if the libraries are not first brought up to a new level of excellence. We point, in this regard, to the example of Yale, which has embarked on building a new undergraduate library to coincide with their new undergraduate college and larger student body.

The set of proposals put forth in this report may not be perfect. They are an attempt to think our way through the next fifty years of research at Stanford. We have not grasped at the attractive straws of a “quick fix,” nor untested technologies promised for sometime in the future. We believe, on the contrary, that the principal value of the library is continuity, stability, and dependability upon which scholarship can build. The promised “bookless” library for all but a few disciplines is, in our view, at least two generations away. In the meantime, Stanford has an opportunity to lead the way on managing new research technologies without hindering or alienating large parts of its faculty. In our view, a comprehensive program for the perfection of a hybrid library—with paper and electronic materials existing in a seamless research environment—will be the strongest possible magnet for attracting to Stanford the top students and the best faculty in every field.

APPENDIX A

Charge to the CLIB Sub-Committee

## CHARGE

### C-LIB Subcommittee on Digital Information Technologies in the Research Library Environment at Stanford

The C-LIB subcommittee will recommend principles and procedures to manage an orderly transition at Stanford from traditional research library facilities to those incorporating new technologies of storing information in digital form, electronic access to this material, and maintaining an effective program for retrieving research materials on conventional paper support.

The aim of the C-LIB subcommittee's activities is to ensure that faculty and students, regardless of their department or school, will be able to maintain the consistent and uninterrupted programs of research that are universally acknowledged as the life-blood of academic and intellectual excellence at Stanford.

The C-LIB subcommittee will first of all attend to the diverse research requirements of faculty and students by canvassing departments across the schools. A primary goal of this phase of its work will be to draw up guidelines reflecting the overlaps and divergences amongst different disciplines, with special attention to identifying the needs of those fields whose primary languages or documents are not easily encompassed by existing catalogue strategies designed for Roman character sets.

A second focus of attention in the early stages of the C-LIB sub-committee's work will be to formulate principles by which parts of the book collection might be moved to off-campus storage without disrupting the normal research practices of faculty and students. This phase of the committee's investigation will solicit recommendations about selection criteria for off-site storage, paging, delivery, and the on-campus storage of recalled books that might best support a range of research programs. The C-LIB subcommittee expects to recommend any such principles to the C-LIB committee for consideration and debate before they are passed to the Faculty Senate.

The C-LIB subcommittee will gather ideas and input relative to two key issues that ultimately will determine the shape of the research libraries at Stanford for the next century. First, the general plan to reduce the amount of shelf space for books on the center campus. The subcommittee will want to learn how faculty and students perceive this plan as a long-term solution to center-campus space limits, and whether they feel it will enhance or detract from Stanford's ability to attract and retain the best faculty and students. Second, the subcommittee will want to gather information from a wide range of users about what mix of alternate modes of electronic access—from completely digitized and indexed texts to so-called "virtual stacks"—might best compensate for the reduced shelf space allotted to books on campus.

Finally, the subcommittee will collect ideas about what might constitute the range of necessary "library services" in the proposed digital environment. The subcommittee's analysis of this body of ideas and information will be presented to the C-LIB committee for discussion, and ultimately passed to the Faculty Senate as recommendations for planning what has sometimes been called the "cybrary" of the future.

The C-LIB subcommittee is committed to the idea that any strategic planning for a future "cybrary" must be shaped by listening carefully to the research and teaching needs of faculty and students across the University.

The C-LIB subcommittee proposes to conduct its faculty survey and consultations with the SUL professional staff during the Winter and Spring terms of 2008. It will aim to present a set of conclusions and recommendations to the C-LIB committee by the end of the 2007-08 academic year.

APPENDICES B & C

Please note that these attachments have been  
deleted from this electronic version of the report