Archives and History Office Program Review Committee – 2007 Report

The SLAC Archives and History Office (AHO) is part of the Technical Information Services (TIS) organization and is a coordinate archive to the Stanford University Archives. The TIS Department is part of the research Division of SLAC. Its mission is to support SLAC's research, education, and communication efforts and to provide rapid, accurate, and user-friendly access to particle physics information. TIS includes the Archives and History Office, the Library, the SLAC Web Information Manager, the SPIRES-HEP Databases, Technical Publications, the Unix-SPIRES Collaboration, responsibility for coordinating the Web at SLAC, and for managing the Lab's scientific and technical information. Pat Kreitz serves as the Director of TIS.

A program review of the SLAC Archives and History Office was held on 14-15 September, 2007. The program review committee membership represented the Laboratory and the major external constituencies of the Archives and History Office. The members possessed a broad and diverse background with extensive experience in archiving and record management, as well as in scientific training in High Energy Physics and Photon Science. The members have experience in a variety of working environments, including universities, national laboratories and scientific societies. The 2007 Archive Review Committee members were:

- JoAnne Hewett, chair, SLAC, Theory Group
- R. Joseph Anderson, AIP, Center for the History of Physics
- Elliott Bloom, SLAC, Experimental Particle Physics Group
- Mark Conrad, National Archives and Records Administration
- Magaret Kimball, Stanford University, Archives Office
- Cathy Knotts, SLAC, Photon Science Directorate
- John Stoner, LBNL, Information Technologies and Services
- Zuoyue Wang, Department of History, Cal State Polytechnic

Charge to the Committee

The SLAC Archives and History Office advisory committee is a standing committee charged with advising SLAC management on the goals, policies, and activities of the SLAC Archives and History program. This review process offers the opportunity to refine the program and to assist in establishing a clear sense of priorities for both SLAC management and the archive staff. While the Advisory Committee's emphasis may change over time, its current efforts include the following areas:

- Review the current archives and history program and assess how well it is fulfilling its mission and meeting DOE requirements.
- Evaluate SLAC's near-term (1-2 year) archival needs and recommend needed changes.
- Evaluate SLAC's longer-term (8-10 year) needs and strategy.
- Review and comment on the Office's mission, goals, policies, and activities.
- Prepare a report on these points and any other subject which may arise during the Committee's deliberations.

The SLAC Archives Review Committee met for 1 and 1/2 days on 14-15 September, 2007. On the first day, Jean Deken, the Head Archivist at SLAC, and Pat Kreitz spoke to the committee on the archival program, its operations and operating procedures, as well as progress on archiving electronic records. Proposals for bringing SLAC into compliance with the looming Federally mandated deadlines for storage requirement and processing of backlog were presented by Laura O'Hara, AHO, SLAC. This was followed by an executive session of the program review committee, where the committee drew up a list of questions for the Head Archivist. The second day began with Jean Deken responding to these questions, followed by an executive session of the committee where issues for the committee report were formulated and discussed. The committee's main recommendations were then communicated verbally to Jean Deken and Pat Krietz in a close-out session and followed up with this report.

Overall Appraisal

Jean Deken has created a remarkable archives and history program at SLAC with limited help and resources. Working with a half-time assistant, Laura O'Hara, until this year when Laura was extended to full time, she has carried out a program that has successfully managed the multiple priorities that confront all institutional archives and has established the SLAC program as a national model for DOE laboratories and one that is recognized internationally. Until she arrived, the archives was a part-time operation. Her first priorities were to establish an effective balance between appraising and accessioning new records, processing existing collections so that they can be used by researchers, and meeting the reference demands of users, especially for the much-used SLAC photo collection.

She has skillfully managed the difficult process of balancing competing demands against limited resources. Among other means, she has been especially effective in utilizing and working with the Archives and History Office Advisory Committee as a way of setting priorities that are acceptable to the SLAC administration. As one example, with Jean's guidance the Committee established that the Archives should not do extensive photo reference work for other SLAC offices, instead letting them do the research on their own. This had become a major time drain for Jean and Laura, keeping them from accomplishing other critical work. A few other examples of developing an effective program include:

- Producing a pamphlet and website for SLAC staff on what records to preserve and how to preserve them, and both answers routine questions about preserving records and encourages staff to contact the archives when they have historically valuable materials.
- Working personally with W.K.H. Panofsky and other senior staff to preserve their histories and to establish the role of the archives.
- Implementing DOE's new (1998) records retention schedule for science records.
- Producing a photo history of SLAC for its 40th anniversary, a relatively quick project that further strengthened the AHO without dominating all of Jean and Laura's time.
- Establishing an ongoing program to process the records backlog.
- Finally Jean deserves recognition for recruiting and retaining Laura O'Hara, a professionally trained archivist who has worked as a half-time paraprofessional until her promotion to a full-time professional position this year. Laura's extensive knowledge and skills complement Jean's.

All of these activities and many others have been a key to establishing a robust and effective archives and history program within SLAC. Equally impressive is the extent to which Jean has created a program with a strong and growing national and international reputation. Jean has participated in national and international archives activities, presenting papers at the Society of American Archivists (SAA) annual meetings, the Future Proof conferences held by the Cooperation of Archives of Science in Europe, and elsewhere, and she's been active on SAA and other committees. She has also completed a second master's degree in Library Science/Archives Administration, and AHO has participated in the cutting edge Transcontinental Persistent Archive Prototype (TPAP) Project funded by the National Archives and Records Administration to develop a permanent means of preserving volatile electronic records. As a result of these and other activities and projects, SLAC is seen within the archives community as a model program among Federal science agencies. The Committee hopes that the larger Stanford University community recognizes the importance and impact of the program, and that SLAC will fully fund the AHO.

Priorities

The mission of the SLAC AHO is defined as providing SLAC with a reliable, accessible, and dynamic institutional memory that captures its scientific history while meeting DOE and NARA contract requirements. The core work of an archivist falls into four areas: Finding and Appraising, Organizing, Assisting Users, and Providing Intellectual Capital. The archive staff should divide its time appropriately amongst these areas.

Recommendations

The recommendations of the Committee are listed below. They lie within the areas of core archival work.

1. **Reduction of Backlog:** The 2004 report of the AHO Program Review Committee recommended that the AHO study options for a long-range strategy to handle the looming Federal requirements for storage and the elimination of backlog and present viable options to SLAC management.

   In the 2004 AHO Program Review, the committee noted that the "backlog of unprocessed material is about 5,000 cubic feet and growing." As of 2007, the backlog had been reduced to 3,000 cubic feet but continues to grow and presents AHO and SLAC with several federal compliance issues that must be addressed immediately.

   In 2008, the U.S. Department of Energy will require in DOE Directive, O243.1 that all permanent records be indexed at the file folder level. In 2009, the National Archives and Records Administration (NARA) will require that all storage facilities housing federal (and federal contractor) records meet the specifications outlined in 36 CFR Part 1228, Subchapter B, Part 1228, Subpart K. Currently the backlog is not indexed at the file folder level and the off-site storage facility where the backlog is stored does not meet the NARA specifications and has indicated it will not make any effort to do so. Compliance in these areas is integral to SLAC getting a good management "report card."

   AHO's priorities in approaching the backlog are:

   - To meet DOE's and NARA's 2008-2009 requirements.
   - To gain intellectual control (an important benefit with the 50th anniversary coming up).
   - To reduce the amount of non-record material stored.

   In the 2004 Program Review, the committee suggested the following 3 options for management's consideration:

- Continue status quo, adding new accessions to off-site storage.
- Pull the backlog back for box level processing.
- Gradually retrieve the backlog for thorough folder-level processing and then transfer to the Federal Records Center or NARA.

Since the 2004 Program Review, AHO Archivist Laura O'Hara completed an exhaustive review of archival theory and best practices as regards records processing. Based on her research and a cost benefit analysis she came up with a fourth option:

- Gradually retrieve the backlog for a combination of box-level processing with return to off-site storage and thorough folder-level processing with transfer to FRC or NARA.

This option was implemented on a trial basis in 2005, resulting in the processing of 123 accessions (275 cubic feet). An analysis of the results of the trial implementation showed that it provides a balance of benefits without spending time on unnecessary activities. Full implementation would require the addition of 1.5 FTE to the AHO for the next 5 years. The 1.5 FTE should be at the professional archivist level. Previous AHO staffing with students has meant increased training and supervision time for AHO staff. The hiring of professionals to address the backlog will reduce this burden on existing AHO staff and will ensure that they are not presented with a situation where all other work must stop in order to deal with the backlog by the 2008-2009 deadlines.

The Committee recommends to management that the AHO staff be increased by 1.5 at the professional archivist level for 5 years to deal with the backlog, gradually retrieving the backlog for a combination of box-level processing with return to off-site storage and thorough folder-level processing with transfer to FRC or NARA. This will show a good faith effort on SLAC's part on both the DOE and NARA regulations. If, after one year, the Laboratory Archivist and Lab management determine that enough progress has not been made, then the Committee recommends increasing the effort on the backlog to 2.5 FTE.

Based on Ms. O'Hara's report, the Committee estimates yearly costs for the backlog project at 1.5 FTE (including labor, records retrieval and return, and supplies) may range from $47K to $75K. Since the current offsite storage facility does not and will not comply with NARA requirements, capital costs of record withdrawal from the present commercial storage must be budgeted for. The Committee recommends that the AHO apply to the American Institute of Physics (AIP) for a $10K grant (with 50% matching funds from SLAC) to deal with the backlog.

2. **Electronics Records:** The AHO has been involved in electronic records research since 2004. AHO, with support from the National Archives and Records Administration (NARA), the National Science Foundation (NSF), and the Department of Energy (DOE), participated in the Persistent Archives Testbed (PAT) project (http://www.sdsc.edu/PAT/index.html). The PAT project was a collaboration involving the AHO, several state archives, and the San Diego Supercomputer Center (SDSC). The purpose of the collaboration was to test the suitability of data grid software to partially automate

archival functions for the management of electronic records. With additional support from NARA, NSF, and DOE, AHO has participated in a collaboration with NARA, SDSC, the University of Maryland Institute for Advanced Computer Studies (UMIACS), Georgia Tech Research Institute (GTRI) and others to establish and test the Transcontinental Persistent Archives Prototype (TPAP). The TPAP is a data grid that currently holds 5.5 million files containing examples of electronic records created across the Federal government. AHO has provided examples of important federal records from SLAC - primarily from the SLD experiment. AHO has also tested tools for the packaging and transfer of electronic records from SLAC to NARA. AHO should be congratulated for its groundbreaking research.

The AHO electronic records efforts should continue. SLAC produces many important records in electronic form that cannot be reduced to hard copy and still be useful. For many of these electronic records the technology does not exist today to provide for their long term preservation. These issues are not just issues for SLAC to address, but our society as a whole. Two recent documents highlight White House awareness of the critical need to address electronic records issues. These documents specifically mention scientific and engineering data.

- The Networking and Information Technology Research and Development (NITRD) Program Supplement to the President's Budget for Fiscal Year 2008 has been released. (See http://www.nitrd.gov/pubs/2008supplement/08Supp_FINAL-August.pdf).

  The Annual Supplement to the President's Budget, which is required by law, lays out the President's priorities for networking and information technology research and development investments for the coming year and highlights recent accomplishments. The NITRD agencies coordinate their investments of over $3 billion in research and development. The Department of Energy is one of the members of the NITRD and is the lead agency for addressing some of these priorities. AHO has been contributing to the types of research highlighted in this document.

  Among the highlights in the FY 2008 addition:

  - Next-generation methods, technologies, and tools are needed to fully integrate and efficiently manage massive stores of distributed, heterogeneous information (e.g., science and engineering research data, Federal records).

  - Data interoperability and integration of distributed data; usability; provenance and integrity (metadata); generalizable ontologies; accessibility.

  - Efficient integration, maintenance, and access to complex, large-scale collections of heterogeneous data; scalable technologies; integration of policies (differential sensitivity, security, user authentication) with data; integrated distributed data repositories; long-term curation, data preservation; testbeds for evaluating approaches; sustainability and validation of complex models

- Decision-support technologies, including rules-oriented systems, for high-confidence processing of large collections (e.g., Federal records)

- The White House has released the President's Council of Advisors on Science and Technology (PCAST) report entitled, Leadership Under Challenge: Information Technology R&D in a Competitive World. (See http://ostp.gov/pcast/NITRD%20Review.pdf)

  The report serves as both the legally prescribed periodic assessment of the NITRD program and also as the platform for PCAST recommendations to the President concerning specific priorities for future federal technology research. Of particular interest are the recommendations found on the pages numbered 35-37 (pages 45-47 of the pdf file) labeled, DATA, DATA STORES, AND DATA STREAMS.

  For example: "Recommendation: The Interagency Working Group on Digital Data, in cooperation with the NITRD Subcommittee should develop a national strategy and develop and implement an associated plan to assure the long-term preservation, stewardship, and widespread availability of data important to science and technology. Collaborators in this national planning process should include academia, professional and scholarly societies, curatorial institutions, national laboratories, foundations, and industry. As part of this effort NITRD Program agencies should develop a multiagency R&D plan for managing and using data, which would include technologies and tools for data curation, trustworthiness assessment, data organization, usability, and interoperability; and user-oriented tools for mining, synthesis, fusion, analysis, and visualization."

Clearly SLAC and the AHO are in a unique position to contribute to this research. The committee's recommendations are:

- AHO should seek additional funds from NARA and/or other sources to continue their electronic records research collaborations.

- In order to continue its important work with electronic records AHO needs substantial IT support. Wilko Kroeger has provided outstanding support, as did Adil Hasan before him. However, AHO does not have sufficient financial resources to acquire all of the IT support services that they need. SLAC should provide AHO sufficient resources to acquire the services of a lower-level programmer to meet most IT support needs with additional resources for occasional consultation with Wilko Kroeger.

- AHO should continue to be actively involved with SLAC personnel to ensure new activities generate adequate records and that those records are kept in a form that meets SLAC/DOE/Federal record keeping requirements.

3. **SLAC Document Management System:** In line with recommendation # 3. under Electronic Records Activities above, SLAC management needs to understand the importance of having AHO involved

early in the process of developing the requirements for and implementing this system. This system could have a major impact on how well SLAC documents its activities and how easily and effectively it can access the knowledge in that documentation.

Among other things, AHO can serve as a resource to:

- Identify the types of documents that are created across SLAC
- Identify who creates those documents
- Identify optimal arrangement(s) of the documents
- Provide insights into the information-seeking behaviors of the SLAC community
- Determine how long documents need to be stored in the system
- Arrive at initial load estimates for the system
- Develop strategies for minimizing E-discovery liabilities
- Ensure compliance with Federal record keeping requirements

The committee also notes a wider concern that the end-users of the document management system across SLAC are not playing a larger role in establishing requirements for the system. End-user acceptance is a key to the success of any system development project. If SLAC is to provide "world class support for world class science," it is essential to ensure the scientists' requirements are incorporated early in the process.

4. **Collection Development:** acceptance is a key to the success of any system development project. The SLAC AHO has identified several areas of collection development that will need to be addressed and supported in the near future. These are areas of critical important to SLAC and proper documentation of the lab's history. The recent departure of Jonathan Dorfan as director of SLAC signals an appropriate time to collect his papers, as director of the lab and those of his longer career at SLAC. The areas of Photon Science and the Linac Coherent Light Source (LCLS) have not been addressed adequately to this point. Ensuring that SHO staff can devote sufficient time to developing archival requirements for these areas is very important.

   The visibility of the AHO should be increased to make lab staff aware of the programs of the office. Notification of retirements and campus moves should be alerts to involve AHO staff of possible records of interest and lab staff should be educated about programs and interest of the Archives. The operations director can assist with getting out the word.

KIPAC is one area where SLAC and Stanford's main campus intersect. This is a collection development opportunity where the SLAC AHO and Stanford University Archives should collaborate on collecting appropriate documentation. The Review committee recommends that the AHO explore the topic with the University Archivist and begin developing a collection development strategy.

In addition to dealing with an existing backlog, it is important that the AHO have sufficient resources to continue appropriate collection development. The areas outlined present opportunities and challenges given the current staffing of the Archives. Adding to the backlog should be avoided, but not at the cost of not collecting important records.

5. **Photograph Collection:** The extensive photograph collection documenting events and people at SLAC created by Diana Rogers is recognized as an important historical resource. However, the collection has not been weeded, and has only minimal identification assigned to the photographs. The Review committee recommends that the collection be accepted by the SLAC Archives and History Office (AHO) and that appropriate online storage be allocated to the AHO for the collection. The committee recognizes that the costs to properly catalog the collection for ease of access and use would be prohibitively high. Therefore the recommendation is that only minimal work be done on the collection after it is received by the AHO. This treatment will preserve the collection, but will impact the accessibility of the collection. The committee urges the SLAC administration to have photographers work with the AHO to develop proper procedures for documenting SLAC photographs as they are created to ensure a more accessible resource in the future.

6. **50th Anniversary of SLAC:** The year 2012, five years away, will mark the 50th anniversary of SLAC. As an important milestone for the laboratory, it will be a natural occasion for not only celebrations of its many achievements but also thoughtful reflections on its history in the broad context of the development of high energy physics as well American and world history. The review committee strongly recommends that a professional historian be hired, as soon as possible, to conduct research, including both archival and oral history research, and write a book-length scholarly history of SLAC as part of the preparations for the commemoration of the 50th anniversary of SLAC.

   The committee believes that such a study would, among other benefits, bring a focus to the many activities of the AHO and help energize both its archival and oral history efforts. It would also help promote discussion within the lab about its mission, identity, and its place within high energy physics, the DOE, the University, and society in general. It will further help bring scholarly and public attention to SLAC as a unique institution of scientific research. When completed, the book will be a valuable part in the training of future employees about the traditions, tensions, and dynamics that drive both the change and continuity of the laboratory. Below are some information developed in part by consulting with Dr. Peter Westwick, a former member of this review committee who had written a history of the Jet Propulsion Laboratory (*Into the Black*) through a contract with Caltech, which runs the JPL for NASA.

Two factors will be crucial in making this project a success: administrative support and intellectual independence.

- How long and how much will it take to carry out the book project? The process should be started right away. It will take up to a year to find funding and to conduct a search to identify the historian. It will take at least another three to four years for a competent scholar to write a solid, sound history of an institution like SLAC. Then it will take at least another year from the time of the completion of the manuscript to its publication, after peer reviews, by a reputable academic press.

  The total costs for the project will be about between $2-300K for three years. These include direct costs—mid-$50k-$60k per year in salary, plus about $10k for travel and photocopying and equipment (e.g. a laptop)—and indirect costs (health care and retirement benefits) of about 25% of direct costs. It is possible that additional work needed to complete the project may require the renewal of the historian for one additional year beyond the initial three year term. The historian should also have access to some secretarial assistance and to photocopying facilities at Stanford and SLAC.

  We propose that funds for the project be sought from SLAC, Stanford University, Stanford Historical Society, and other funding sources. In Dr. Westwick's case, the funds for the history project apparently came from a discretionary fund granted to JPL director by Caltech, which then was then contracted back to Caltech's Humanities Division, which hired him.

- How can the intellectual integrity and independence of the project be assured? Perhaps the best way to assure intellectual integrity and independence of the project is to run the book project through an academic unit at Stanford University. There are several possibilities in this regard: the Department of History, the Science, Technology, and Society Program, the Program in History and Philosophy of Science and Technology, and the Stanford University Archives. If possible, a faculty member at Stanford should serve as PI for the project, with some compensation, supervising the project historian and providing assistance in dealing with both administrative and intellectual questions. It will add to the attraction of the position if the historian could also be hired as a lecturer in a relevant academic program at Stanford University, teaching one course per term with additional compensations. The department should get some overhead reimbursement.

  On the part of SLAC, it will greatly assist the project historian if SLAC director could issue a letter to the historian expressing support for the project and authorizing full access to archives and people in the lab. Both the current and former directors would be a great resource for the historian as subjects for oral history interviews, but it will be crucial to the intellectual integrity of the project that neither they nor anyone else in the lab intervenes in any fashion in the writing of the book. The head of the SLAC Archives and History Office should be actively involved in the process of the selection of the historian and should be the main support and contact person for the historian at SLAC.

  The historian should be hired as the result of a national search and at the postdoc level. The search should be open to all historians of science and technology or scholars of related

disciplines, not just those who work on lab histories. Finally, the book should be published by an academic publisher on a peer-review basis.

7. **Need for Formal AHO Disaster Protocol:** During the review, Jean Deken told us about a "wet records" incident in 2006 that occurred in SLAC storage of archival records in a Sea-Train container on the SLAC site. Happily after considerable work and some expense the records were saved. This incident brought to mind the need for a disaster protocol for the AHO. The question of employee safety is already well covered in EOESH (SLAC ES&H course #219). However, the special requirements of preserving archival records in the possession of AHO in case of emergency or disaster need the attention of the AHO staff. The records moved offsite after processing by the AHO to facilities that satisfy the 2009 Federal Facility Standards for Records Storage Facilities (such as NARA) will automatically be protected. For the records (temporarily) stored on the SLAC site, the storage will need to meet similar standards, and part of that will be a disaster protocol. An example of a disaster protocol from the AIP AHO (thank you R. Joseph Anderson) is included as an appendix to this section.