Smithsonian Institution

Office of Sponsored Projects

6 January 2011

Maxmillian Angerholzer III
Executive Director
Richard Lounsbery Foundation
1020 19th Street, NW, Suite LL60
Washington, DC 20036

Re: Proposal for Project Entitled, "Biodiversity Heritage Library: Life and Literature
          Conference 2011"
          Thomas Garnett, Principal Investigator, Smithsonian Institution Libraries

Dear Mr. Angerholzer:

On behalf of the Biodiversity Heritage Library and Thomas Garnett of the Smithsonian Institution Libraries, we would like to submit the enclosed proposal for your consideration. This proposal requests $89,171 to organize and manage a conference with a working title *"Life and Literature"* that will convene librarians, biologists, computer scientists, students, publishers, and other stakeholders to set the agenda for biodiversity literature digitizing and its networked environment for the next four to five years.

We are grateful for your past and continued support of our programs and thank you for your consideration of this request. Should you decide to fund this project, please send all pertinent award documents to my attention at the address at the bottom of this letter.

If you have questions of a business nature, please contact Ahoua Twitty of my staff at 202.633.7116 or TwittyA@si.edu. Programmatic questions should be addressed to Thomas Garnett at 202.633.2238 or GarnettT@si.edu. Thank you for your consideration of this very important project.

Sincerely,

J. Scott Robinson, CRA
Director

Enclosures

cc: Thomas Garnett
        Katherine Hill
        Kristen Louk

Proposal to Richard Lounsbery Foundation
Biodiversity Heritage Library: Life and Literature Conference

Summary

On behalf of the Biodiversity Heritage Library, the Smithsonian Institution proposes to organize and manage a conference, *Life and Literature,* that will convene librarians, biologists, computer scientists, students, publishers, and other stakeholders to set the agenda for biodiversity literature digitizing and its networked environment for the next four to five years. The Conference will advance the integration and interoperability of digital biodiversity literature with major biodiversity databases and digital library programs. It will leverage the shared lessons learned for new funding proposals.

Background

The initial precipitating event for the Biodiversity Heritage Library (BHL) was a conference titled "Library and Laboratory" held in February 2005 at the Natural History Museum in London where librarians, zoologists, botanists, information technologists, and others discussed the relations of taxonomic literature and biology. A strong consensus emerged from the conference to digitize the older taxonomic literature. After the conference several of the librarians representing major natural history and botanical libraries met to create an operational plan and begin to seek funding sources. At the time there were a few scattered examples of core taxonomic literature digitized and made available on the web, often in incompatible formats not easily integrated with other biological resources. The BHL member libraries collectively held a substantial part of the world's published knowledge on biological diversity. Yet, this wealth of knowledge was available only to those few who could gain direct access to these collections. This body of biodiversity knowledge, in its current form, was unavailable to a broad range of applications including: research, education, taxonomic study, biodiversity conservation, protected area management, disease control, and maintenance of diverse ecosystems services.

Much of this published literature is rare or has limited global distribution. From a scholarly perspective, these collections are of exceptional value because the domain of systematic biology depends upon historic literature. The "cited half-life" of natural history literature is one of the longest in the scientific domains. The so-called "decay-rate" of this literature is much slower than in other fields such as biotechnology. Additionally, mass digitization projects at large research libraries lack the discipline-specific focus of the Biodiversity Heritage Library Project.

The BHL received most of its funding through a larger project, the Encyclopedia of Life from the John D. and Catherine T. MacArthur Foundation. Additional funding to move it to a global level was provided by the Gordon and Betty Moore Foundation.

Prior Key Role of the Richard Lounsbery Foundation

Prior to receiving funding from these sources, the BHL (represented by the Smithsonian Institution) received key funding from the Richard Lounsbery Foundation in May 2006 The Richard Lounsbery Foundation awarded $50,000 to the proposal titled, "A Union Catalogue of the Holding of the Members of the Biodiversity Heritage Library." The problem that the BHL faced at that early time and that the Lounsbery proposal addressed was that library catalogs, even online library catalogs, were insufficient to do any concrete long-range collection planning for the nascent project. Online library catalogs, usually heavily derived from converted card catalogs, served fine for in-house retrieval and traditional library access points searching. The online catalogs were not useful in projecting what materials should be scanned or in clearly indicating which libraries had which types of materials and were virtually useless in handling data about articles with in journals. For any specific title it was easy to determine which BHL member library had copies. But for providing collections data about classes of texts spread across all the BHL member libraries, e.g. South Pacific brachiopods or micro-lepidoptera of North America or even something as simple as marine species the metadata and architecture of the catalogs were inadequate. Better tools and techniques were required. The funding was applied primarily in two ways:

1. Purchasing and applying a collections development tool for library consortia developed by OCLC the largest library services provider and host of WorldCat containing combined metadata from libraries in 112 countries.   This allowed clear metadata analysis by the BHL developers, which was directly applied in the design and implementation of the BHL Portal <http://www.biodiversitylibrary.org/>. Applying this tool also allowed the BHL respond to broad collection questions required by our later funders.
2. Pilot project research in the analysis and extraction of metadata from digitized biodiversity journal texts at the article-level. This analysis and exercise was used in the requirements specifications for the new BHL article module, CiteBank, released in December 2010.

In both cases the Richard Lounsbery Foundation provided seed funding for much larger developments that would otherwise have taken far longer with many false starts.

Current Situation

The Biodiversity Heritage Library is now a consortium of 12 natural history and botanical libraries that have worked together to digitize the legacy literature of biodiversity in support of research and science. Today the BHL Portal serves approximately 86,375 volumes consisting of more than 32,228,000 pages. BHL has become an accepted tool for serious taxonomists, zoologists, botanists, and many others (see BHL Testimonials attached). The resulting unparalleled digital collection created by the BHL is an indicator of the success of the project to date. This very success has posed challenges and opened new opportunities that could not have been imagined at the beginning of the project. This success combined with the rapidly changing landscape of organizations and technology open new avenues of content gathering and delivery which could have an even more profound impact on science and policy. This effort however will require a new level of planning and cooperation.

BHL Delivery of Content and Services

Six years on, the entire biodiversity research landscape has changed with the advent of major integrative programs such as the Encyclopedia of Life, the Global Biodiversity Information Facility, Global Names Architecture, Virtual Biodiversity Research and Access Network for Taxonomy (ViBRANT), etc. Because of the BHL success in digitizing a significant mass of biodiversity literature, the scientific documentation of the study of living organisms since the time of Linnaeus has became easily accessible. The BHL Portal (http://www.biodiversitylibrary.org/) allows users to search the entire corpus by multiple access points, read the texts online, or download selected pages or volumes as pdfs. Because of its commitment to true open access users are able to transfer source data files to their own servers for research purposes. Using taxonomic services, researchers can bring together publications about even very rare species and find links to such services as the Encyclopedia of Life. Tools for services and APIs are openly provided to users. (http://biodivlib.wikispaces.com/Developer+Tools+and+API). Many of the texts digitized by the BHL have until now only been held in a few European or North American libraries. Now scientists and student in the developing world have access to them thereby accelerating biodiversity research.

To acquire additional important content and promote open access the BHL has obtained permissions from publishers for over 110 important biodiversity journals and series allowing the BHL to digitize their backfiles including those backfiles still under copyright, mount them on the BHL, and make them available for re-use to the wider community thereby promoting the emerging scientific commons.

Life and Literature Conference

We propose a conference to evaluate the work to date and to plan for new directions within the wider circle of users, contributors, and related projects. This will set the agenda for the next four to five years. The purposes of the Life and Literature Conference are:
1. Engagement of current and future constituencies concerned with biodiversity literature.
2. Integration and interoperability with major biodiversity and digital library programs.
3. Further innovative integration of digitized literature with biodiversity databases.
4. Setting the agenda for the BHL for the next 4 – 5 years.
5. Leveraging the shared lessons learned for new funding proposals.

BHL needs to engage the following constituencies in planning the strategic agenda for the next 4 to 5 years.

1. Biodiversity researchers: zoologists, botanists, taxonomists, etc. What priorities are needed in services development to assist their critical work?
2. Librarians: the emerging digital library commons applied to biodiversity; national and international scientific literacy initiatives.
3. Biodiversity informatics: integration with current and future biodiversity information infrastructure, e.g. EOL, GBIF, ViBRANT, Atlas of Living Australia, etc.
4. Applied biodiversity disciplines: forest managers, conservationists, fisheries management, natural park preserves, ecosystems services, etc.
5. Natural history and botanical artists.
6. Publishers.

7. Students and educators
8. Computer Scientists; The BHL presents a set of technical challenges that make it an ideal "guinea pig" for a number of research programs.

Sessions to be covered:
1. Intellectual property, knowledge commons, and open access.
2. Publishing models: What does publication of taxonomic work mean in a digital networked environment? What is an author? What should the relationships be between legacy backfiles and born digital works?
3. Biodiversity literature as a component of a revised humanities and general education curriculum.
4. Large scale digital preservation in a global environment.
5. Biodiversity informatics and the published text – how can it be "cracked open?"

The conference will be structured with some plenary sessions and some split concurrent sessions. The conference will run for two full days. The conference will be a high-profile event with advance notice in the popular and professional media. There will be at least one well know speaker for a keynote address. The location will be in a city with a major international airport such as Chicago or London to ensure access to an international audience. To improve the attendance from developing countries and to ensure certain key speakers there will be a travel/lodging subvention offered to some participants. A modest charge will be levied to recoup some but not all expenses to the rest of the attendees. The conference will be structured to integrate social networking and new media as to allow everything from tweets to web casting to access a larger audience.

Venue

The Field Museum in Chicago, Illinois operates the Biosynthesis Center (http://synthesis.eol.org/), a component of the Encyclopedia of Life. The Biosynthesis Center hosts workshops and conferences that advance research that addresses fundamental questions in biodiversity science. They have an administrative structure and staff to handle the logistics and organization of complex conferences. Chicago is centrally located for domestic participants and has a major international airport for international visitors. It is a cosmopolitan city with many food, hotel, and entertainment options for participants. Hotels are within easy walking distance (0.4mi) of the museum. The Field Museum can provide the venue without a rental fee, has wireless internet, a library on site, and a staff at BioSynthesis Center that has organized more than 30 domestic and international meetings in the last four years. These meetings have included more than 800 participants from 40 countries. The museum is an active partner in the BHL. The Museum will not charge the BHL for the use of Field Museum rooms. This will allow the Richard Lounsbery funding to be used to support additional attendees especially students or researchers from developing countries for whom the BHL is their primary access to taxonomic literature.

To increase interest and participation the conference will include:

1. A BHL mash-up competition. Prior to the conference developers will be invited to develop innovative and research-enhancing uses of BHL content. A review panel will develop submission guidelines and will judge the submissions. An award will be announced at the conference.

4

2. An ARTLIFE session. Presentation/reuse/display of art works incorporating BHL texts or images including painting, drawing, sculpture, or electronic media.
3. Poster sessions for graduate students and post-docs to encourage next generation involvement.

The Life and Literature Conference will be minuted and an outcomes report for the Richard Lounsbery Foundation and the wider biodiversity community will be circulated within 60 days of the conference.

The planning, coordination, negotiation for the Life and Literature conference will be done by staff at the BHL member libraries but will require travel and per diem reimbursements for planning meetings, travel, and related lodging. The conference planning committee will also require per diem reimbursements for two days immediately before and one day immediately after the conference.

Attendees:

The Life and Literature Conference will seek to include the following types of attendees:
1. Directors of major North American libraries, e.g. Deanna Marcum, Library of Congress; members of the Steering Committee of the Digital Public Library Planning Initiative http://cyber.law.harvard.edu/newsroom/digital_public_library.
2. Leaders in the biodiversity informatics community, e.g. Biodiversity Information Standards http://www.tdwg.org/ Dr. Roderick Page, University of Glasgow; Roger Hyam, Natural History Museum.
3. Staff from major biodiversity integrator projects such as the Encyclopedia of Life, the Global Biodiversity Information Facility, etc.
4. Practicing biologists, such as Dr. Brian Fisher, California Academy of Science (http://www.discoverlife.org/who/CV/Fisher,_Brian.html).
5. Natural history artists such as Alice Tangerini, National Museum of Natural History.
6. Deans or faculty of graduate schools in Information Management or Library Science such as Bryan Heidorn, Dean of the University of Arizona School of Information Resources and Library Science.
7. Computer scientists in the field of data mining such as Dr. Lee Giles, Pennsylvania State University. (http://clgiles.ist.psu.edu/).
8. Open Access publishers such as Dr. Suzanne Skomal, Executive Director of *BioOne (*http://www.bioone.org/*)*
9. Commercial publishers such as Wiley Blackwell (http://www.wiley.com/WileyCDA/)

Outcomes and Next Steps for the Life and Literature Conference

Though the specific agenda for the future will be determined at the Life and Literature Conference, it is envisioned that the Conference will lead to the following next steps for the Biodiversity Heritage Library and related projects:
1. A plan for advancing the digitized literature of biodiversity to new levels for the next 4 years.
2. One or more sustainability scenarios for the BHL.
3. Buy-in for responsibilities and commitments from BHL stakeholders.
4. Preparation of one or more large funding requests to advance the content and services of the BHL to the levels articulated in next step 1.

Testimonials

(in most cases names removed for confidentiality)
Thursday, October 7, 2010
.... I maintain a Website that describes the plant genus Opuntia (prickly pear cacti). There is no way I could maintain such a site without access to literature from 100-200 years ago. Most of the cactus species were discovered long ago; I find it invaluable to put up PDF files to document each species in the literature as I document them photographically. I am a botanist, but I work in the pharmaceutical field (not so many botanical jobs out there). Your library makes it possible for me to continue working with plants in a meaningful and scientific manner.

Sent: Thursday, June 17, 2010
...I am a huge fan of BHL and use it every day. I recently took a faculty position in Spearfish, South Dakota (population about 8,000). The resources available through BHL played an important role in deciding to accept this position given that without BHL I would have virtually no easy access to historical taxonomic literature. Thank you and keep up the good work.

Sent: May 19, 2010 via Gemini
Dear Sir/Ms: I wish to commend you for this amazing bibliographic service. I am currently producing a Catalogue of Newfoundland and Labrador lichens. Much of the early lichenological literature on NL is published in 19th century Austrian and German literature. Through the Biodiversity Heritage Library I have been able to download some significant literature which would have been difficult to obtain otherwise.

This is an incredibly useful initiative - literature availability has always been a problem for us scientists in Africa and it is wonderful at last to be able to get easy access to some of the old literature. Keep on scanning!

Sent: Thursday, April 8th, 2010
…. the BHL website is an extremely valuable resource and has helped me greatly to locate and access old botanical literature that is so crucial to my research. It's one of the first places I look when seeking old literature and searching for references to my study group. I find the website easy to navigate and generally easy to search for publications (some old serials with titles that have changed or with somewhat vague foreign-language titles are the only problems I have encountered). I began my present research project in 2003 and being based in a small town in Africa made accessing literature especially difficult, but I no longer feel so disadvantaged with the advent of the BHL and similar websites. Everyone involved in developing, maintaining and funding the Biodiversity Heritage Library can be extremely proud and I hope it continues to grow and develop in the future.

BHL provides access to critical biodiversity literature, including initial species descriptions, historical ranges, habitats, and taxonomic name changes. A vast proportion of all species are known only through a single publication. Prior to the BHL, researchers would have to search through multiple databases and catalogs, and likely travel to many different libraries to access information that they can now get in a few keystrokes.…
Senior Programme Officer, ECAT Work Programme; Global Biodiversity Information Facility

Principal Investigator

Thomas Garnett will be the principal investigator for this proposal. Mr. Garnett is the Program Director of the Biodiversity Heritage, a consortium of 12 natural history and botanical libraries organized to digitize the biodiversity texts in their collections and make it openly available. He has organized partner projects in Europe, Brazil, Egypt, and with the Chinese Academy of Sciences. He has over 25 years experience creating, scoping, implementing, and managing major digital library projects and most recently served as the Associate Director of the Smithsonian Institution Libraries. Mr. Garrett's interests include networking biological data, literature, institutions, and projects to enable investigation of complex systems; Knowledge Commons policy and theory; application of ecological models to complex knowledge domains. Tom holds an MLS from the Catholic University of America.

BUDGET

Expenses Details-Description	Dollar Amount
Rental of venue (2 days)	$0
Venue services (water, coffee tumblers, name tags, etc.)	$1,300
Attendees with subventions (40 people: 15 full subventions for speakers, 25 partial subventions for students & Developing World attendees). Subvention amount averaging domestic & international.*	$42,000
Registration staff **	$9,500
Awards	$4,000
Refreshment (coffee, tea): 90 people @ $18/day for 2 days	$3,240
Catering/Lunch: 90 people @ $25/day for 2 days)	$4,500
Publicity/Advertising	$8,000
Planning staff expenses (covers pre-conference travel to & from Chicago & per diem for five BHL staff)	$5,000
Total Direct Costs	**$77,540**
Overhead/Management Fee @ 15%	**$11,631**
Total Support Requested	**$89,171**
Note: * Attendees are responsible for lodging expenses, dinners, flights except for the 40 with subventions.	
** 1) Coordinate logistics in Chicago (venue, catering, set up and break down, audio-visual, information technology, security, housekeeping), 2) purchase on behalf of the meeting and 40 participants receiving subventions (including booking flights, ground transport, hotels), 3) receive and process all registration requests for the meeting, 4) provide onsite support during the meeting, and 5) provide BHL with detailed financial reports on all expenditures pre and post meeting.	