

LITRE Grant Pre-Proposal Submission Form

Submit by e-mailing to litre@ncsu.edu as PDF or RTF document by October 1, 2004. Form and RFP available at <http://litre.ncsu.edu>. Receipt of your proposal will be confirmed within 24 hours.

(Use whatever space you need for inserting the requested information, i.e. expand each text area to whatever size you need.)

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1. Project Title: Remote Learning of Disease and its Presence in Animals: Expanding Access to Veterinary Histology and Pathology Slides

2. Project Coordinator:

Name: Laura M. Osegueda
Campus Address: Veterinary Medical Library
E-mail address: laura_osegueda@ncsu.edu
Campus Phone: 513 6218
Unity ID: lmosegue

3. Other Participants (List any persons other than yourself who will be participating in this project): Dan Tucker, Jim Holland, Dr. Donald Meuten, Dr. Carol Grindem

4. College or Unit: NCSU Libraries and College of Veterinary Medicine

5. Department: NCSU Libraries

6. Project Description (Describe what you plan to do.): We will be digitizing and indexing analog images and slides used in the first year histology, VMA914, and second year pathology courses, VMM941 and VMM942. Veterinarians studying for the veterinary pathology board exams also use the pathology images. After being digitized, they will then be made available online using the Luna Insight software, acquired by the library in 2003. These images are currently only viewable on laser disk players set up on three workstations located in the Veterinary Medical Library using an old version of Microsoft Windows 98. Students are not able to browse or search for images by subject categories or keywords. Currently, students can only access the images using a cumbersome laser barcode reader with barcodes printed in a syllabus created many years ago by the now retired Pathology professor. An important part of the project will be to catalog/index each image, making it retrievable by keywords and also through an

established subject schema provided by the CAB Thesaurus. Once online, the images will be viewable via PDA or computer.

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7. Estimated number of students affected (If your proposal is for a small pilot project, you may want to distinguish between short term and long term impact): 300 students will be affected by this project. This is a pilot project that starts with important courses that would have a significant and long-term impact, as the images being converted will be usable for many years. These are high-quality images that are suitable for conversion for ongoing use in teaching and study.

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8. Project Objectives (Describe what you hope to accomplish via this project, i.e. what are your goals? In particular, explain why you think this will enhance student learning. If it is successful, what long-term impact will your project have on your department or college or the university?):

Online access to the thousands of pathology slides would allow the students to study the slides much more easily.

Subject groupings created by the library would provide logical access points for students to access slides for each week's lectures, review slides for tests, and learn cell and tissue types.

Students would be able to access images from any computer 24/7.

Students would have the ability to browse for images and compare images to learn about cells, tissues, and disease patterns that are helpful for later clinical diagnostic work.

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9. Projected impact on NCSU (Describe possible ways in which you feel your project outcomes could be used to benefit NCSU.): As a pilot project providing images for course lecture and study, it serves as a test bed for the many other courses on campus that rely heavily on images for their course content in any college or department. The indexing schema used, CAB Thesaurus, can be used for other agricultural or life science digitization projects. The use of the software will be a good trial for usability for other courses.

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10. Project Assessment (Describe how you plan to measure whether the project achieves your goals. This should include how you will know about effects on student learning.):

A. Database quality assessment: There will be several measures used to assess database quality.

- Digital images must meet pre-determined standards for quality, size, and enduring subject value
- While the database is being built, usability tests will be performed using both faculty and veterinary medical students in the NCSU Libraries Usability Research Laboratory. The LUNA software, the subject heading structure, terminology, cross-references, and keyword searching will be tested.

- Database performance testing will be done as images are loaded in batches and also several large tests will be done at midpoints and prior to rollout of the database.
- B. Effectiveness of database as replacement for slides (real-time use by both faculty and students) will be assessed by review of search logs, interviews, and class monitoring for the following parameters:
- Ease of use in classroom environment
 - Use for different student learning modes and environments
 - Accessibility to material by different access points, database structure and maneuverability, ability to limit or broaden search,

Follow-up surveys given to students will assess the same factors listed in B above. The results will be compared.

In addition, we will monitor and investigate the ways in which online access to these image collections may facilitate learning the course material.

Hypotheses to test include:

1. Ease of access via keywords leads to increased use of histology and pathology images.
2. Increased use of these images increases student performance on quizzes.
3. Organizing images by standardized and structured terminology improves course knowledge and understanding.

11. Staffing and Support (Who will receive funds dispersed under this grant and what will they do?): Graduate library students will be hired to perform the indexing and cataloging of the images under the project director's supervision.

12. Financial Support Requested (Dollar totals are all that is required here. All funds must be used by June 30, 2005):

EPA salary total: None

SPA salary total: None

Other salary (consultants, student assistants, etc.): \$4500

Equipment (including hardware and software):

Costs associated with assessment (if any): None

Other financial support requested: \$1500 to license some of the images for use at NCSU. Some of the images belong to institutions other than NCSU.

Additional Explanation of how funds will be used (You may leave this blank if you feel you have already provided this information.):

13. Staff Support and/or Technical Support Requested (Describe any technical and/or staff support that you are requesting under this grant, i.e. how many hours of staff time and for what purpose? Do not include here staff time for staff you plan to hire yourself. If you plan to do your own hiring, include that cost under item #12.):

14. Total support requested (Add costs from item #12 and item #13 converting the hours requested in item #13 @ \$40/hr): \$6000

15. Timetable for Implementation (When will the various stages of your project will be completed?):

- Spring 2005 Database design and building. First testing for usability and database performance.
- Fall 2005 VMA914 Histology and VMM 931 Pathology I: Images available as first trial
- Spring 2006 Continue database building, do performance checks, usability testing
Rollout for VMM 941 Pathology II course use. Full implementation, testing, review and evaluation.

Jan 2005

- Begin conversion of images and loading onto server.
- Load CAB Thesaurus on server and set up local subject headings to augment and enrich thesaurus headings.
- Hire graduate assistant to begin working 20 hrs per week.
- Initial testing of CAB Thesaurus linking and library software is performed.

Feb. 2005- Mar. 2005

- Assistant continues work of indexing and cataloging images, working with faculty and project coordinator.
- Images for VMA 914 and VMM 931 are loaded for Fall semester trial.
- 50% of images should be loaded by the end of March.

Apr. 2005

- Usability testing #1 with VMA 914 database and volunteer veterinary students and faculty.
- Digitization and cataloging continues.

May-June 2005

- Complete digitization and cataloging.
- Perform quality and performance checks of histology database to assure that response time is satisfactory for rollout for Fall 2005 semester.
- Quick user guides are provided to assist students.

August 2005

- System introduced to students in VMA 914 and VMM 931.

September 2005

- Faculty experiment with using the online system for class quizzes/tests.
- Usability testing of pathology images with Dr. Meuten and Grindem.

Oct.-Nov. 2005

- Continued assessment of system and project. Faculty and project coordinator will ask students for their feedback regarding the database, access points, indexing schema, response time, etc. Final report completed for VMA 914 and VMM 931 users.
- Prepare for Spring 2006 pathology courses to come online, as these will be heavy use compared to histology and pathology I.

Dec 2005

- Set up access for VMM941 and VMM 942 for Spring 2006
- Jan.-Feb 2006

Provide orientation sessions to the system for students with hands-on training.
Provide assistance for faculty to incorporate images into lectures, quizzes, and tests.

Mar.-Apr 2006

Work with faculty to prepare a survey to measure overall success of project. Since both the database and slides will be available, the survey will measure how well students moved to using the online access from the slides, which features worked best for them, if they used the subject thesaurus or just keywords, assessment tool that measures whether increased learning, knowledge gained about pathology due to system hierarchy, browsability, taxonomy, etc.

May-June 2006

Project Wrap-Up and Final Report

16. Human Subjects Protection (If your proposed project involves research using human subjects, you will need approval from the Institutional Review Board for the Protection of Human Subjects in Research (IRB) prior to final approval. IRB information is available at <http://www.ncsu.edu/sparcs/irb/>.)

17. Release: By submitting this proposal the applicant grants the LITRE Advisory Board permission to make this proposal available as an example for future grant applicants. All personal information will be removed if this proposal is used as an example.
