Mount Holyoke College Digitization Center

Annual Report 6/28/07

Coordinator: James Gehrt

The position of Digitization Center Coordinator at Mount Holyoke College was first established as a full-time position in the fall semester of 2006. Along with the Digi-Center's daily production of imaging materials, defining the role it will play and the services it will provide within Mount Holyoke is an ongoing project.

Throughout the past year an evolving process has been established, not only for the production of work, but also the project tracking and information needed to assess the center's work load and direction. Project tracking methods through Microsoft Access have been refined and updated as the software becomes more familiar. As a result, more accurate and useful data has been produced as the year has progressed. New techniques in scanning and post production are learned through investigation and collaboration with professionals in the field, as well as professional development workshops and conferences. The Digi-Center has greatly benefited from past professional contacts that have lent advice and knowledge that continues to grow as the field constantly expands.

The Digi-Center has also played an important role in reexamining how electronic reserve materials are distributed and accessed through the implementation of ella. The center works closely with faculty in a one on one basis for teaching the expanded resources available through ella's e-reserve system. This method is also changing as new processes are discovered through feedback from faculty and students. The file naming and saving structure for e-reserve material has been reformatted for easier access and will continue to change if better solutions are discovered.

The Digi-Center has an important roll in conversations regarding the Corridor Project. Because of this renovation, the Digi-Center will be a prominent point of service within LITS, for faculty and staff. The staffing and the Digi-Center's physical location within the corridor will make its role even more important for the expansion's success.

As a member of the CTS team James Gehrt has also worked on services outside of the Digi-Center's roll. (Help Desk coverage, installs, location support, etc) As time permits, these outside services will increase the general computing knowledge for support of the Digitization Center.

This document will provide the information, that will explain what the Digi-Center has produced, what knowledge has been gained, and the overall outlook of the center's roll.
The Mount Holyoke College Digitization Center's roll can be broken into 5 areas of interest.

1. Electronic reserves scanning, posting, and support
   a. 8.5 x 11 copies scanned and saved as pdfs
   b. Electronic files downloaded and linked
   c. Quality control
   d. Eila upload and problem solving
   e. Faculty consultation (fair use, submission tips, previous semesters, etc)

2. Faculty Projects
   a. Image scanning for publishing projects
   b. Scanning for presentations
   c. Scanning for research

3. Campus Projects
   a. Archives
      I. High resolution scanning and jpeg conversions
      II. Meta data logs
   b. Museum
      I. High resolution scanning and jpeg conversions
      II. Meta data logs
      III. Uploading into network space.
   c. Other (Alumni, Weisman, Disabilities, Academic Departments, etc)

4. Administrative Streaming

5. Campus outreach and group associations
   a. LITS Cultural Programming Council (Museums 10, Bookmarks Fall 07)
   b. 5 College Disabilities Collaboration
   c. NITLE conferences (Digital Asset Management, Digital Video Production)
   d. NERCOMP conferences (Graphic Design Poster Development, Streaming Media)
   e. Student workshops taught for work study program
   f. Disabilities Department and LITS collaborative internship
Digitization Center Workflow
Electronic Reserve

Electronic Reserves ella course needed

Leave in Drop Box
Campus Mail
Circulation Desk
Brought by Digi-Center
E-Mail

Check source point daily

Go to on CD

Original Hard Copy
Consider: copyright/fair use laws, legibility, double sided

Books, not at semester beginning
Newspaper/Journals
8.5 x 11 Copies

Scan on Epson 10000 tabloid
See e-reserves oversize scanning script for settings
Scan on Cannon 3080 multi feed
See e-reserves scanning script for settings

Save pdf. (example "turner_compare_literature") on external hard drive. Folders: e-res,sem/year,faculty,course
Create link to webpage on the reading list
Save on ext. hard drive. Folder: e-res,sem/year,faculty,course
Print to pdf in word

Upload e-reserves into ella site. Upload reading list. Link readings to list. Quality control links and readings. Log e-reserve into Digi-Center data base. Notify faculty.
Digitization Center Workflow
Image Scanning

**Original Materials**
Scanned on Epson 10000 with Silver fast Ai software. Dust off scanner, wipe with anti-static cloth, clean any fingerprints. Load images into holders if needed (emulsion down) and dust off both sides of image.

**Working High Resolution Scans**
Example: Faculty Projects
300dpi @ 12" on long dimension. Adjustments in scan: auto sharpen, set endpoints, auto dust and scratch. See individual scanning scripts for step by step procedures.

**Archival Scanning / Long Term Storage**
Resolution based on user's needs, Maximum bit depth, Minimal adjustments in raw scan (no sharpening, set endpoints). See individual scanning scripts for step by step procedures.

**Prints:** Reflective top on Scanner
- B&W 16-bit grey
- Color 24-bit rgb

**Negatives:** Transmission top on scanner
- B&W 16-bit grey
- Color 24-bit rgb

**Positives:** Transmission top on Scanner
- 35mm 24-bit rgb
- 4"x5" 24-bit rgb

**Prints:** Reflective top on Scanner
- B&W 16-bit grey
- Color 24-bit rgb

**Negatives:** Transmission top on scanner
- B&W 16-bit grey
- Color 24-bit rgb

**Positives:** Transmission top on Scanner
- 35mm 24-bit rgb
- 4"x5" 24-bit rgb

Save all images as Tiffs, no compression. Save files in Project folder on the external hard drive. Folders: Projects, Faculty or department name, Project Title, Date

Open files in Photoshop CS2 (or current version). Post Production Adjustments: Adjust color, range and contrast, (highlight = 242 shadow = 12). Sharpening, Quality Control (clean up dust or scratches). Make derivative files (jpg files for presentations (100 dpi @7") or prints (300 dpi @10") ), contact sheets, etc based on the project's needs. Save derivatives and contact sheets on external hard drive with the rest of the project in properly labeled folder. See individual scanning scripts for step by step procedures.

Output project to proper media, based on projects needs (CD, DVD, network space, ella, Content DM, prints, etc). Log project into Digi-Center data base and notify user.
Electronic Reserves and Imaging Projects,
General Statistics
Comparative E-Reserve Statistics

Spring and Fall 2006, best estimates. Results may not take into consideration, electronic forms of readings in all cases. There is some incomplete data.

<table>
<thead>
<tr>
<th>Semester</th>
<th>Number of Readings</th>
<th>Number of Courses</th>
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<tbody>
<tr>
<td>Spring 2006</td>
<td>628</td>
<td>98</td>
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<tr>
<td>Fall 2006</td>
<td>914</td>
<td>120</td>
</tr>
<tr>
<td>Spring 2007</td>
<td>1443</td>
<td>90</td>
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</table>

I am confident with spring 2007 numbers. I am surprised that there were more courses in fall 2006.
## Faculty and Departmental Project, General Statistics

<table>
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<tr>
<th>Project</th>
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<td>Alumni Office</td>
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<tr>
<td>Archive</td>
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<td>Bataglia</td>
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<tr>
<td>Benfey</td>
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<tr>
<td>Blaetz</td>
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<tr>
<td>Boliva</td>
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<td>Bubier</td>
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<td>Ciztron</td>
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<td>Coleman</td>
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<td>Dyar</td>
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<tr>
<td>Economics</td>
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<td>EHS</td>
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<td>German Studies</td>
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<td>Hanson</td>
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<td>Healy</td>
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<td>Lee</td>
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<td>Rachooten</td>
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<td>Scotto</td>
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<td>Sinha</td>
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<td>Sinith</td>
<td>136</td>
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<td>Smith-Crooks</td>
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<td>Taylor</td>
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<td>Taylor</td>
<td>25</td>
</tr>
<tr>
<td>Tucker</td>
<td>5</td>
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<td>Weisman Center</td>
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## Electronic Reserves Spring 07

<table>
<thead>
<tr>
<th>Department</th>
<th>Course</th>
<th>Faculty Name</th>
<th>Number of Readings</th>
<th>Paper</th>
<th>Electronic</th>
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<tbody>
<tr>
<td>5 college womens stud</td>
<td>5 Col Wome</td>
<td>Ham, Maryanna</td>
<td>5</td>
<td>5</td>
<td>0</td>
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Summary for 'Department' = 5 college womens studies (1 detail record)

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<th>5</th>
<th>5</th>
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<tbody>
<tr>
<td>Standard</td>
<td>0.36%</td>
<td>0.65%</td>
<td>0.00%</td>
</tr>
</tbody>
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### American Studies

| AMST 201 | Tiongson, Antonio | 60        | 60        | 0          |
| AMST 301 | Tiongson, Antonio | 35        | 3         | 32         |

Summary for 'Department' = American Studies (2 detail records)

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<th>63</th>
<th>32</th>
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</thead>
<tbody>
<tr>
<td>Standard</td>
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<td>8.22%</td>
<td>5.86%</td>
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### Anthropology

| ANTHR 105 | Battaglia, Debora | 5         | 5         | 0          |
| ANTHR 105 | Battaglia, Debora | 11        | 0         | 11         |
| ANTHR 105 | Battaglia, Debora | 1         | 1         | 0          |
| ANTHR 105 | Battaglia, Debora | 4         | 4         | 0          |
| ANTHR 105 | Heller, Chaja     | 34        | 4         | 30         |
| ANTHR 105 | Morgan, Lyn       | 26        | 0         | 26         |
| ANTHR 105 | Zibbell, John     | 25        | 25        | 0          |
| ANTHR 105 | Zibbell, John     | 3         | 0         | 3          |
| ANTHR 216 | Heller, Chaja     | 9         | 0         | 0          |
| ANTHR 275 | Battaglia, Debora | 7         | 7         | 0          |
| ANTHR 275 | Battaglia, Debora | 1         | 1         | 0          |
| ANTHR 275 | Battaglia, Debora | 11        | 0         | 11         |
| ANTHR 275 | Roth, Joshua      | 1         | 0         | 1          |
| ANTHR 316 | Morgan, Lyn       | 24        | 0         | 24         |

Summary for 'Department' = Anthropology (14 detail records)

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<tr>
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<th>47</th>
<th>106</th>
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</thead>
<tbody>
<tr>
<td>Standard</td>
<td>11.76%</td>
<td>6.14%</td>
<td>17.43%</td>
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</table>

### Art History

| ARTH 266 | Sinha, Ajay | 1         | 0         | 1          |
| ARTH 266 | Sinha, Ajay | 15        | 2         | 13         |
| ARTH 270 | Sloan, Anna | 34        | 0         | 34         |

**Thursday, June 28, 2007**
<table>
<thead>
<tr>
<th>Department</th>
<th>Faculty Name</th>
<th>Course name</th>
<th>Number of Readings</th>
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<tr>
<td></td>
<td>Devlin, J.</td>
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<tr>
<td></td>
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<td>theat 215</td>
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<tr>
<td></td>
<td>Freedman, T.</td>
<td>dance 241</td>
<td>8</td>
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<td></td>
<td>Rundle, E</td>
<td>theat</td>
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<td>Skiles, S.</td>
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<tr>
<td></td>
<td>Skiles, S.</td>
<td>theat215</td>
<td>1</td>
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</table>

Summary for 'Department' = Theater (10 detail records)

Sum 49
Standard 5.36%

Grand Total 914
Supporting Material and Documentation Created for the Digitization Center
The Digitization Center

The LITS Digitization Center's main function is to help support Mount Holyoke's curricular needs, by converting and creating digital multimedia instructional materials. The Digitization Center will answer your questions, analyze your options, and help you meet your goals in the following areas of digital production.

- Electronic Reserve material scanning and posting
- Scanning for presentations and Web use
- High resolution image scanning
- Scanning of materials from Mount Holyoke's archive
- Project Consultation
- Streaming Audio and Video

The Digitization Center can plan, create, organize and archive images and information for Mount Holyoke's faculty and staff. Projects at the Digi-Center can range from converting a faculty slide collection into an online resource for global research to digitizing readings and images for a single class. The digital resources that the Digi-Center creates are easy to use, manage and share while the procedures are explained in a friendly and easy to understand manner.

The Digitization Center is a point of service for the Mount Holyoke's digital imaging needs. Electronic reserve materials can be dropped off weekdays from 9:00 – 5:00, or an appointment can be scheduled for project consultations. For after hours drop off, there is a locked drop box, or materials can be left at the library's circulation desk.

The Digitization Center
Coordinator: James Gehrt
Ext.3346
digicenter-d@mtholyoke.edu
Overview:
From the "NINCH Guide to Good Practices"

Digital Asset Management involves:

- Creating an efficient archive that can hold digital resources and the meta-data that describe them.
- Implementing an infrastructure to ensure that these electronic data are managed and preserved in such a fashion that they will not become obsolete;
- Implementing search facilities that enable users to identify, locate, and retrieve a digital object.

The benefits of implementing a Digital Asset Management program include:

- Centralizing discovery and access;
- Coordinating disparate projects as a part of a coherent whole;
- Centralizing authorization, security, and tracking systems;
- Reducing duplication of effort and resources;
- Saving time for the creators and users through organizational structure and centralization of data.

One message that seemed to be repeated throughout the symposium was… there is no easy or single resource for creating and implementing a Digital Assets Management System. The following two examples will demonstrate some of the tools and steps in creating a digital repository.

At Mount Holyoke we have implemented similar repository projects as the examples that were demonstrated at the NITLE symposium. The Archives and the Art Museum have established searchable electronic media projects that are not only campus driven, but were created by collaborating within the 5 colleges. However, much like the Nitle presenters, these projects have not been based on a central repository model to be accessed for a variety of future uses. They have been created according to their individual project goals. The standards and workflows established in these projects will be a valuable outline for starting a Central Digital Assets Repository.

The idea of a central depository accessible to a variety of campus disciplines, for the storage and use of digital media, has been a struggle for many institutions. If we intend to create such a repository, we will need to look across departments, identify who the stakeholders are, and discover who will benefit. Such a repository needs to be supported with strong management, interdepartmental cooperation, set standards, and a clear list of desired outcomes.

The two presentations that I will give an overview for, are the following:

- Digital Asset Management in Cooperation: One Size May Not Fit All, Tri-College Library Consortium; Bryn Mawr, Haverford, Swarthmore
- Making Digital Repositories Matter, The Crossroads to Freedom Project at Rhodes College

The Tri-College Library Consortium presentation, demonstrated some of the tools and workflows needed for creating a digital repository across three campuses. Their presentation was based on the specific tools and techniques used to achieve their projects goals.

The Cross Roads to Freedom project showcased aspects of planning and the organizational steps and structure involved in implementing a digital repository.
Accessibility Discoveries from Johanna Fernandez’s Post Grad Internship

On June 25, 2007 Johanna Fernandez spent most of the day at the Digi-Center investigating accessibility issues with pdf’s, tiff’s, and rtf files. This was just one aspect of her Post Graduate Internship at LITS. Johanna is visually impaired and uses JAWS software to read files on her personal laptop. I found the day to be great learning experience for my self. I shared some of the technical information on the creation of files with Johanna and she gave me a perspective on the obstacles that are encountered by the end user with visual impairment.

Discoveries:

1. During Johanna’s studies she would come across numerous occasions when a pdf would not read properly through JAWS. Some sentences would read properly and others would not. We tried to find commonalities that would trigger these jumbled sentences. It did not seem to be a problem with the text (size or font) or the file quality. Clean downloaded pdf’s had the same occurrence of random sentences that would not read properly. OCR was run on the text by either Adobe Acrobat or by the supplier of the online resource. I seemed to be some random issue between JAWS and the pdf format. In Johanna’s experience she found that she did not have problems with Word files when using JAWS. We then experimented with different ways of converting the pdf to a Word file. The easiest solution was to simply cut the desired text from the OCR pdf file and paste it into a blank word document. JAWS could then read each file with out problems.

2. The next issue that we investigated was a discovery that some downloaded pdfs would not read at all. I then opened two downloaded pdfs in Adobe Photoshop CS2, (one file that Jaws could read and one that it could not) After comparing the two files as an image, since ocr software looks for recognizable shapes that can be converted to text, I discovered a great difference in image resolution. The files that were accessible had a resolution of 200dpi. The files that were inaccessible had a screen resolution of 72 – 100dpi. As a work around to fix the low res files, I resized the image up to 200dpi. The resized up files looked awful. I then increased the contrast from the paper white to the text. Next I applied a filter to soften the edges of the pixilated text, and then a sharpening filter to render the text clearer. The file was then saved as a tiff. I opened the file with ABBYY Fine Reader 5.0 software and ran OCR which then saves the file as a Word document. As a result JAWS was able to read the document.

3. The above procedure was also found to be the best fix for bad quality photo copies of readings. I took the worst copied reading I could find. The copy was crooked and dark at the spine of the book, with a strange darkened border around most of the text. I first scanned the article with Adobe Acrobat and ran Adobe’s OCR. The text was not recognizable at all. Next, I scanned the reading through Fine Reader. This time the text was recognized however the software highlighted many letters that would need to be edited. As a final solution I scanned the reading as a high res tiff image into Photoshop. I cropped and straightened the image and ran the same procedure as in #2. As a result the reading had a few small errors at the end of the reading where the text went into the spine. There was minimal editing that needed to be done. This is not a solution for faculty that have bad photocopies of their readings. The time involved in this editing procedure would not be practical on production basis. However this is a useful tool for students with disabilities that can not access a particular document.

4. Johanna had issues with foreign language readings. While taking a French course many translations were wrong. I discovered when the OCR was run on the file that English was selected. There are numerous languages to choose from when running the OCR, which will help in recognizing the appropriate characters.

5. The final aspect that we explored was searching through the online electronic files within the archives. Johanna was amazed at the sheer quantity of information available. Many of the letters in the archive did not have electronic content available. This is an ongoing process and the material will be slowly added. However, Johanna found it easy to search through the metadata to find letters or articles of interest. The high resolution file could then be sent by request if needed, I did run the same procedure as in #2 on the screen res jpeg. It also worked well in this case. The file we tested was an image of a typed letter from the early 1920’s. The paper was yellow and the text was from a typewriter and faint. After converting the file to grayscale and running the procedure the file could be read with out error. We then went down to the archives and the receptionist explained the process of accessing materials from the archive.

6. In conclusion I highly recommend other departments that work with visually impaired users to spend some time brainstorming with the user on their specific issues. The information that I learned went beyond the problem at hand and will help in recovering many documents used for other projects. I felt Johanna had an opportunity to direct her questions in person and together we could some problem solving. It was a win, win, win situation. The user gets to work on direct issues pertaining to their daily usage of the media. The production department gains useful information that may not have been otherwise explored, and the institution gains on a whole by advancing the access to information to all of its users.
Accessing Electronic Reserve Materials

- Point your browser to https://ella.mtholyoke.edu/portal/
- Log in to ella using your Mount Holyoke account and password.
- Select the course that you wish to view.
- Select the eReserve tab in the left hand column.
- Choose the desired material from the reading list.

The Digitization Center
Coordinator: James Gehrt

Dwight 109 • Ext. 3346 • digicenter-d@mtholyoke.edu

Library, Information and Technology
Digitization-Center helpful tips for using the E-reserve system

- **Make sure readings follow fair use of the United States copyright law.** See the “Fair Use of Copyrighted Materials for Electronic Reserve” guideline sheet.

- **Include an electronic form of the readings list.** The reading list should be in the form of a word document and e-mailed to the Digi-Center (digicenter-d@mtholyoke.edu). This list will be used for linking the readings to an index page. The reading list will also provide proper bibliographic information and proper spelling on the index page.

- **Consider if your materials may be accessible from other online services.** This is of importance when the readings are poor quality copies. Any information on the periodical name, article name, author, date, etc. is helpful to locate readings on the web.

- **Consider if any of the readings were used in previous semesters for E-reserves.** Instead of re-scanning the hardcopy we can pull them up from a past semester's course. If you have any information on when the reading was offered, and which course, please indicate this at the time of dropping off the materials.

- **Double check all course names and course numbers before dropping off your material,** making sure that spelling is correct and everything is properly labeled. Feel free to leave detailed instructions regarding titling, reading order, author's names and dates.

- **Drop off materials to the Digi-Center,** or at the circulation desk in the library.

- **After you have been notified that your readings have been posted,** please review the readings online. You will be notified that your e-reserves have been posted, via e-mail. We will review our work, however it is important for faculty to review for missing pages, proper spelling and make sure the links work properly. If glitches can be caught early they are easier to fix.

- **If you are adding readings to a course,** please indicate the course name that they will be added to. Also, indicate the proper placement of the new readings into the existing reading list.

**The Digitization Center**  
Coordinator: James Gehrt

Ext. 3346 • digicenter-d@mtholyoke.edu

Library, Information and Technology
Fair Use of Copyrighted Materials for Electronic Reserves

The Digitization Center must comply with the United States copyright law (Title 17), when electronic copies are produced from copyrighted materials. Fair use is an established aspect of the copyright law. It can be found in Section 107 of the Copyright act. Fair use is recognized as an important part of teaching, research, and scholarship through the use and access of copyrighted materials. The law establishes fair use protection for disseminating or copying copyrighted materials without permission form the owner if certain circumstances are met.

Purpose of Use:

- Comment, Criticism, Scholarship, Research, Teaching

Limit Electronic Reserve Materials to:

- Single chapters
- Single articles from periodicals
- Several illustrations, graphs or charts
- A portion that is not central to the entire work as a whole

The Nature of Copyrighted Material:

- Published work
- Factual, nonfiction, news (less favorable: creative or consumable)

The Effect on the Market for the Copyrighted Material:

- No significant effect on the current or future market
- No longer in print or absence of licensing
- Restricted and limited access (limited to students in a class with password protection)
- Materials are no longer available after the course is finished

Other Important Considerations:

- Permission should be obtained for materials that are repeatedly used by the same instructor for the same class.
- All copies (electronic or hard copies) should include copyright notices and proper attribution.

The Digitization Center
Coordinator: James Gehrt
Ext. 3346 • digicenter-d@mtholyoke.edu

Library, Information and Technology
Electronic Reserve Intake Form

- Readings must be in 8.5" x 11" format.
- Readings must follow the fair use provision of the United States Copyright law.
- Packets of readings must include an electronic reading list. The list should be a word document that is emailed to digicenter-d@mtholyoke.edu

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<td>Intake Date:</td>
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The Digitization Center
Coordinator: James Gehrt

Ext. 3346 • digicenter-d@mtholyoke.edu

Library, Information and Technology
Mount Holyoke College Digitization Center Standards

The following information will outline the digitization standards that will serve as benchmarks for scanning and/or capture of materials in the Digitization Center. The following guidelines will serve as recommendations for the minimum standards for a project. They can not account for all variables involved in a specific project.

The Digitization Center's goal is to create digital files that will:
- Reflect the original material's characteristics as much as possible.
- Serve as quality archival surrogates for preservation
- Allow for quality derivative files to be used for specific project needs.
- Have functionality across different platforms to ensure proper access.

Archival or Master file

The archival or master file is scanned or captured from the original material at a high resolution. The file is unedited and uncompressed to match the original's characteristics as much as possible. The TIFF format will be used because of its flexibility, large data capture and its lack of proprietary usage. As a result of the amount of data captured in a TIFF file, consideration should be given to adequate storage for each collection or project.

Derivative Files

Derivative files are created from the archival file. A copy of the archival file can be altered by using Photoshop, to acquire different versions of the original image. The image can be resized, cropped, color and tonal characteristics adjusted, retouched or saved in a different format. Depending on the projects needs, the derivative file will not be the same quality as the archival file; however the file size will be smaller and more manageable.

Factors that affect decisions made in the size, quality and type of image capture:
- What types of materials need to be scanned?
- What is the quality and condition of the original?
- What specific need does the user have for the final project?
- How will the final project be used?

Scanning Philosophy

Scanning procedures can range from no image manipulation at the time of scanning to altering the image's color balance, sharpening, cop or tonal range within the scanning software. The Digitization Center recognizes the need to maintain an archival file. However, due to workflow efficiency there is a need to automate some of the necessary image adjustments during the scan. The Digitization center will do a minor amount of adjustment to the image in the scan in order to minimize post scan adjustments, while maintaining as much of the original properties without manipulation.

Scanning or Image capture

There are three modes for capturing an image digitally.
- **Bitonal**: Used for printed text, line drawings or halftones. Documents such as e-reserve readings, reports or other strictly black and white images.
- **Grayscale**: Used for continuous tone documents such as; black and white photos, drawings and prints. Consideration should be given for subtle color casts, whether grayscale should be used during the capture process.
- **Color**: Documents or images with continuous color tone. (color photographs, paintings, prints and drawings)
Resolution

The terms; dots per inch (dpi) and pixels per inch (ppi) are used when discussing resolution. Dots per inch, refers to the frequency of a dot in a printed format. Pixels per inch, refers to the sampling frequency of a camera or scanner. The term pixels per inch, is used by the Digitization Center, because the scanner is used for most digitizing and as for now, there is little demand for printing.

The higher the resolution used in the capture of the image, the more accurately the characteristics of the original will be reflected in the file. This happens because more information or pixels have been captured. Since the physical size of specific items in a collection vary, it is important to consider the ppi for each image to optimize results. To ensure consistent results the following formula is used to determine the ppi resolution for the scan.

\[ \text{The desired long side in pixels} \div \text{the length of the original's long side in inches} = \text{ppi of scan} \]

Example: What is the scanning ppi needed to scan an 8\"x10\" photograph that has a desired long side of 4,000ppi?

\[ 4000\text{ppi} \div 10\" = 400\text{ppi} \]

Bit Depth

The number of bits used to define each pixel determines the bit depth of a file. The higher the bit depth, the more tones, in color or grayscale, can be seen in the file.

Bit depths include:

- 1 bit or bitonal (black and white)
- 8 bit equals 256 colors or shades of gray
- 24 bit equals 16 million colors or shades of gray

Imaging Hardware and Software

The Digitization Center uses Silverfast Software on an Epson 10000 flatbed scanner and Nikon software for the Nikon Coolscan V. A Canon DR 3080C is used along with Adobe Acrobat 7 for scanning text and OCR files. In addition, Adobe Photoshop is used for post-scan processing of files.

Image Quality Control

The purpose of implementing a quality control procedure is to ensure that consistent, high quality images are produced. The Digitization Center uses the following guidelines:

- Control and calibration of scanning environment. A calibrated system of monitor, scanner and printer is important in maintaining consistency.
- A clear, consistent and tested workflow is established to ensure quality results.
- Pilot tests at the beginning of each project to determine optimum settings that will meet the user’s needs for the final images.
- A final review of all material to ensure accurate and consistent results.
# Resolution and Bit-Depth Guidelines

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<tr>
<th>Original Material</th>
<th>Bit-Depth</th>
<th>Long Side Resolution</th>
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<td>Printed Text</td>
<td>8-bit grayscale</td>
<td>400ppi</td>
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<td>Manuscript or Handwritten</td>
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<td>Black and White Negative or Positive</td>
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<tr>
<td>Black and White Photograph</td>
<td>8-bit gray or 24-bit color</td>
<td>4000-6000ppi</td>
</tr>
<tr>
<td>Color Photograph</td>
<td>24-bit color</td>
<td>4000-6000ppi</td>
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Digitization Center Workflow
2007
35mm Batch Scanning Script for Faculty (High Resolution Working Scans)

Loading and Scanner Preparation

Epson 10000 scanner
Remove the reflective sheet from the transmission cover and slide into top of lid.
Load two 35mm slide holders:
1. Load emulsion down (dull side down, slide should read correctly)
2. Load up to 30 slides, 2 sheets of 15.
3. Turn power on, second button down.
4. Wipe surface of glass with anti-static cloth and spritz with air.
5. Clean any fingerprints with cleaning kit.
6. Place the black plastic positioning guide by the edge of the glass, furthest from the user.
7. Spritz the front and back of each slide to remove dust.
8. Match the arrow in the upper left of slide holder with the arrow on the guide.
9. Place second holder next to the first.
10. Close cover.

Silver Fast Ai Scanning Software

Open Silver Fast Ai (shortcut on desktop)
General set up

1. Select the “General” tab on the control panel.
2. Select “Batch Mode”
3. Select “Transparency”
4. Select “Positive”
5. Select “save” under “Frame set”

Frame set up

1. Select “Frame” tab on control panel.
2. Select “Pre scan”
3. If there are marques on the preview panel select a marquee and press delete until they are gone.
4. Click on “yes” to the warning on deleting all marques
5. Select “Pre scan”
6. Create a marquee by clicking and dragging over one frame.
7. Roughly adjust the marquee to the frame.
8. Select the histogram button (looks like a profile of a mountain) at the top of the control panel.
9. Click on “Reset” and “OK”
10. If the “Curves” button (line graph going up) is highlighted red, select it.
11. Click “Reset” and “OK”
12. “Scan Type” = “48 to 24 Bit Color”
13. “Filter” = “Auto Sharpen”
14. “Image Type” = “Standard”
15. Don’t worry about the name of the file yet.
16. Do not change the original size and scale settings. Only change the long dimension of output to 10.0 inches.
17. Do not change the “Q-factor” and “Screen”
18. Set DPI to 300
Image setup

1. Click on the magnifying glass in the upper left of the control panel.
2. Move the marquee into the edges of the image frame.
3. If needed, reset the long dimension on the control panel to 10.0 inches.
4. On the “Densitometer” box click on the horizontal double arrow. This will properly flip the image.
5. On the tool bar next to the preview click on the sixth button up from the bottom. It looks like a medical box. This is the auto dust and scratches removal tool.

Highlight and shadow adjustment

1. The Third button up on the image tool bar next to the preview, shows you where your darkest and lightest values are in the image. (It looks like a half black and half white pill)
2. Hold down the shift key and click on the black portion of the button.
3. A #1 and a small circle target should appear where the darkest value of the image appears. (a low number) If this does not happen try again. You need to hold the shift key down just a little longer.
4. Repeat step 2 above for the highlights. (white portion of button)
5. Click on the histogram (mountain profile) button again on the top of the control panel.
6. Move the left arrow to the right until the lowest value (R,G,B), for the shadow, is at or near 12 on the “Fixed Pipette” dialog box. If one of the values is already lower than 12 do not adjust. The shadows are blocked in the original.
7. Move the right arrow to the left until the highest value (R,G,B), for the highlight, is at or near 242 on the “Fixed Pipette” dialog box.
8. The outside range of all images is 0 – 255. 0 being completely black, with no detail. 255 being completely white, with no detail. 12 – 242 will give the image nice highlight and shadow separation.
9. Readjust the highlight and shadow values as needed. They may move a bit when adjusting the other side.
10. Once highlight and shadow values are set click “OK”
11. Double check the settings and click the magnifying glass button to go back to the overall scan preview.
12. Repeat at the “Frame set up” section of this script until all of the images are ready for scanning.
13. Double check that “Batch Mode” is selected in the “General” tab on the control panel.
14. Click “Scan”

File naming and saving

1. When you click scan a saving dialog box will open. Find or make the appropriate folder on the external drive under project. Projects > Faculty or department > Project name > Date
2. Select to save the files as Tiffs
3. Save file by the professors last name
4. Select “4 digit index”
5. If starting from the beginning of the project start index at 1, if continuing scanning from a previous session select the next image number.
6. Select do padding with zero
7. Select ignore existing frame names
8. Click “Save” and walk away.
Items to Consider for Administrative Streaming Video Projects

Project Objectives

- What administrative needs are being met with this project?
- What knowledge should the audience obtain to demonstrate the objective was met?
- How will this knowledge be evaluated?
- How are the current needs of this project being met?

Project Factors

- What administrative factors need to be considered?
  - Scheduling
  - Finances
  - Meetings
- What college resources need to be considered?
  - Technology staff
  - Equipment availability
  - Post production work
  - Training
- What external factors need to be considered?
Conclusion and the Digitization Center's Future

It is my impression, and the statistics from this past year support, that the Digi-Center will continue to grow in faculty use and in satisfying the Mount Holyoke campus digital imaging needs. As the recognition of high quality, professional imaging services achieved at the Digi-Center increases, faculty will look to the center as a valuable resource for assisting in academic, research, and publishing needs. The Digi-Center has also developed a reputation as a friendly informational resource for faculty to seek solutions to imaging questions. A collaborative spirit has developed between specific researching needs and what may be available through digital imaging. Impromptu brainstorming sessions have resulted in unique solutions regarding ancient texts, faded images, and image manipulations and alterations.

The Digitization Center will be moving forward into the new corridor space this fall. As a result the center will be more visible and increased traffic will result in further access to the services available. The Digi-Center plans on taking advantage of the 20 hours of student work that is available. In the past work study hours were only used in a time of need, such as the beginning of semesters with help on e-reserve production. To fill in the use of time for work study students, I will look into furthering the plan to scan articles from the archives, the slide library, art museum, and possible music collections. Long term continuing projects would allow a pool of students to continue scanning and duplicating material by following specific job oriented scripts. The use of scripts along with detailed scan logs, will allow one student to pick up where the last one left off, allowing for a long term production cycle to be implemented. Faculty e-reserves, projects and departmental work would always take precedence over the long term projects. This plan would benefit the college in three ways.

1. Time and money would be saved in hiring of technicians for the long term projects.
2. Students would be a point of direction for users in the Corridor during some of the daytime hours.
3. Important archival projects that would otherwise sit by the wayside can get the attention that they need.

With the success of the merging of ella and electronic reserves, more faculty members will be taking advantage of the ease of use and access that ella provides. As a result file management and organization becomes more important. I would like to review with LITS colleagues the current naming and saving structure that the Digi-Center uses. I will discuss best back up practices and look for ways to improve the organization and ease of file location. This process has been evolving over the past year. As old files are needed they are renamed and saved in identifiable folders. Discovering the best practice now before the more files are saved needs to be a priority for the coming semester.

The Digi-Center is also the point of contact for Administrative Streaming Media projects. This is the area of the least demand to date. This is good, because time is needed for proper training and understanding of the complete process of streaming media. My history with imaging has always been in the area of still photography. This summer I will be attending a 3 day NITLE course in digital video production. This will increase my knowledge base of working with media involved in streaming. This knowledge will also be a benefit for the corridor. The Digi-Center can become a supplementary resource for questions and training regarding digital audio and video.
The short term goals of the Digitization Center are:

1. Implement a pool of work study students to allow for 20 hours per week of scanning and support.
2. Develop scripts and scan logs for scanning technicians.
3. Research new saving and backup practices.
4. Keep ahead of incoming fall e-reserves while maintaining current long and short term projects.
5. Learn digital video practices and experiment with hardware and software.

The long term goals of the Digitization Center are:

1. Acquire a large format Epson printer for the campus signage and printing needs.
   a. Such a printer could be used at its full potential as a result of my professional background in digital image printing and matching.
   b. Professional large scale Signage across campus will benefit Departments, Workshops, Courses, Faculty, and Administration.
   c. High resolution archival images will benefit the preservation of Mount Holyoke’s most important documents and images for future generations.

2. On numerous occasions a need has arisen for digital copy stand work. These items have included oversized books, rare and fragile books that would be damaged by the handling involved in scanning, and the duplication of large images or blue prints. On these occasions, 5 times in the past year, I have brought in my personal gear (which is not a small process). I would recommend an investment of approximately $3,000.00 for a Nikon digital body, lens, strobes, and copy stand. This is not an immediate need and can be considered under future budget plans.

3. The Digi-Center would like to play a roll in the further investigate how Mount Holyoke College could benefit from a central digital asset repository. I would like to follow up on the initial investigation that was pursued at the NITLE seminar this past spring. This would involve the establishment of meta data intake procedures, which can be difficult to obtain from the large variety of sources that the images come from.

4. The Digi-Center would like to continue its roll in making reading materials accessible to all of Mount Holyoke’s users. This involves interdepartmental and cross campus collaboration, through the 5 college consortium and education of faculty and staff.

I look forward to continuing to make the imaging services, at Mount Holyoke’s Digitization Center, the best quality available. This will be done by setting consistent standards, educating users in best practices, and researching latest techniques and processes. The Digi-Center will continue to grow to meet the needs of the faculty and staff. A lot of ground has been covered in establishing a full time service for the college’s imaging needs. The first steps have been taken; e-reserves, ella, faculty projects, museum and archive projects, the corridor, and file storage and retrieval. New goals will be set to meet future needs. That being said, the most important short and long term goal of the Digi-Center is to have an end product that consists of high quality results on a timely and dependable timetable with friendly and informative advice.
Digi-Center Needs for the Corridor Project
12/01/06

Desk Space: (rough estimate)

- East wall 20' x 3'
- South wall 15' x 3'
- West wall 16' x 3'

Furniture

- 3 - Locking file cabinets
- 1 - Small rolling task tables (3'x3'?)
- 1 - 2 door cabinet (4' x 3'?)
- 1 - Large 3 door cabinet
- 1 - 4'x3' white board / bulletin board
- 5 - Computer chairs
- 1 - Built in drop box

Current Equipment

- 3 – Dell GX620 /w monitors
- 1 – Nikon Coolscan V
- 1 – Canon DR3080C II
- 1 – Epson 10000 scanner
- 1 – Xerox Phaser 8550

Possible Future Equipment

- 1 – copy stand
- 1 – Nikon D200 w/lens
- 2 – Nikon strobes
- 1 – Imac/w 20” monitor
- 2 – external hard drives
- 1 – extra Canon DR3080C II (depending on e-reserve volume)
- 1 – 3’ x 1’ daylight balanced light table
- 1 - Epson 9800 large format printer
Epson 9800 Large Format Printer for Corridor Project
Specifications and Cost Analysis

James Gehrt
Digitization Center

Included in Proposal:

- 3 Price Quotes: Berkshire Westwood Graphics
  Meridian Cyber Solutions
  Epson.com
- Printer Specifications Sheet
- Other institution’s pricing structure
- Media prices

Cost of Material:

9 Ink cartridges needed: 220ml or 110ml
$112.00 each $69.95 each

Paper:

Prices vary on surface and size. Good quality standard matte roll (most versatile)

Epson Enhanced Matte 44” x 100’
$149.00

Ink Cost per Square foot:

Hard to determine; best estimate from Epson and Meridean Cyber Solutions.
Depending on resolution; the in cost is $.50 - $1.00 per square foot.

Other Colleges and Universities Pricing Structure:

- Gustavus Adolphus College

  On Standard paper:
  720 dpi $2.00 / sq ft
  1440 dpi $4.00 / sq ft

- MICA

  On Epson Enhanced Matte: 44” x any” $1.70 / inch (resolution not specified)

- Penn State

  B&W on plain paper (resolution not specified) $2.50 / sq ft
  Color on plain paper (resolution not specified) $4.50 / sq ft
  Gloss / semi-gloss (resolution not specified) $5.00 / sq ft

- More examples attached

Plan to visit a college with 9800 in use, to see the impact it has had on campus.