

# **ETDs**

Electronic Theses & Dissertations

## **Library Issues and Responsibilities**

and the

## **Networked Digital Library of Theses and Dissertations**

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# ETDs: Library Responsibilities

- ❖ **Improve access to information**
- ❖ **Server: maintenance and archiving**
- ❖ **Public access**
  - **Internet/Web, OPAC**
  - **Internet Workstations**
- ❖ **Introduce faculty**
- ❖ **Future**



# ETD Goals

- ❖ **Students learn about electronic publishing and digital libraries**
- ❖ **Timely technology and knowledge sharing**
- ❖ **Universities unlock the potential of their intellectual property and products**
- ❖ **Improve library services**



# Improve Library Services

- ❖ **Better stocked digital library**
- ❖ **Timely access to information**
- ❖ **Serve more clients with fewer staff**
- ❖ **Cost savings: library and students**
  - **save shelf space, building space**
  - **save staff time: eliminate circulation, shelving, binding**
  - **paper and printing**
- ❖ **Improve online catalog access**



# **ETD: from author to public access**

## **1. Student author submits ETD**

- **goes directly to permanent library/archival server**
- **access/archive fee replaced binding fee**

## **2. Graduate School approves**

## **3. Library generates public access**

- **UMI automatically notified**
- **Public has access through: OCLC/OPAC and Internet/World Wide Web**



# ETD Server

## ❖ Library

- provides
- maintains
- backs-up
- upgrades hardware/software as needed
  - ◆ NeXt 3.3 (running HP: 1989-1997)
  - ◆ Sun Netra (running Solaris 2.5.1, Oct 1997 to date)
- other
  - ◆ training materials
  - ◆ information for potential participants in NDLTD



# VT's ETD Server: Sun Netra

- ❖ **200 Mhz Ultrasparc processor**
- ❖ **128 Mb of RAM**
- ❖ **Gb of disk space for OS, related tools**
- ❖ **ETDs on 4 Gb partition**
- ❖ **Netscape Enterprise Server**
- ❖ **Perl 5.004\_01**
- ❖ **CGI.pm**
- ❖ **Sun 8mm Ultra Wide SCSI tape drive**
  - **170m tapes; 40 Gb compressed storage**






## Virginia Tech Electronic Theses and Dissertations

<http://scholar.lib.vt.edu/theses/>



*VT* ETDs: unlocking access to graduate research

<b>Of General Interest</b>	<i>Primarily for Graduate Students</i>
<a href="#">Browse All Available <i>VT</i> ETDs</a>	<a href="#">Introductory Workshops</a>
<a href="#">Search <i>VT</i> ETDs</a>	<a href="#">Submission Information</a>
<a href="#">National Digital Library of Theses &amp; Dissertations</a> <i>NDLTD</i>  flier	<b>Form:</b> Committee Approval <i>draft</i> Library-friendly Approval Form
<a href="#">Data about <i>VT</i> TDs and ETDs</a>	<b>Form:</b> Submit an ETD to the Graduate School


[VT ETDs and the US Copyright Law](#)

 flier

[Preparing Your ETD at Virginia Tech](#)

 flier

[ETDs: Library Issues, Responsibilities, and Data](#)

 slide show



# 730 VTETDs

as of February 17, 1998

## ❖ 589 ETDs available online

81% of approved ETDs

### ➤ 389 unrestricted access

53% of approved ETDs

### ➤ 204 Virginia Tech community access only

28% of approved ETDs

## ❖ 137 withheld from all access

19% of approved ETDs



# VTETDs with Multimedia

## ❖ 435 still images

➤ 225 GIF

➤ 121 JPG

➤ 89 TIF

## ❖ 25 movies

➤ 8 Quicktime

➤ 6 AVI

➤ 11 MPEG

## ❖ 42 sound files / WAV parrot calls!

## ❖ 1 Macromind Director

➤ 378 Mb ETD

➤ 85 VRML / WRL



# Server Log Files Reveal

- ❖ 247,573 successful requests
- ❖ 5,357 distinct files requested
- ❖ 22,725 distinct hosts served
  
- ❖ 34.6% requests for .pdf
- ❖ 61.7% requests for .html
- ❖ .35% requests for 'media'

January - December 1997 at [scholar.lib.vt.edu](http://scholar.lib.vt.edu)



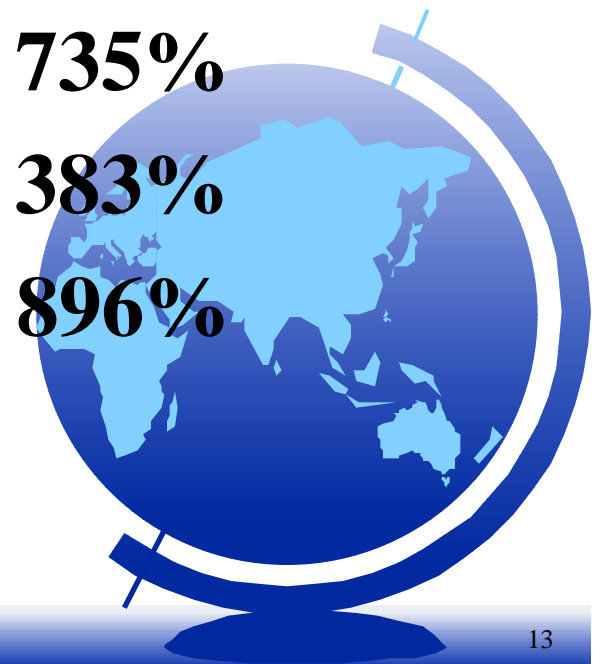
# International Access to VT ETDs

<i>country</i>	<i>1997</i>	<i>1996</i>	<i>increase</i>
<b>UK</b>	<b>2922</b>	<b>850</b>	<b>244%</b>
<b>Australia</b>	<b>2501</b>	<b>608</b>	<b>311%</b>
<b>Canada</b>	<b>2367</b>	<b>713</b>	<b>232%</b>
<b>Germany</b>	<b>2378</b>	<b>346</b>	<b>587%</b>
<b>South Korea</b>	<b>1264</b>	<b>387</b>	<b>227%</b>
<b>France</b>	<b>1161</b>	<b>463</b>	<b>151%</b>
<b>Brazil</b>	<b>1130</b>	<b>183</b>	<b>517%</b>
<b>Thailand</b>	<b>967</b>	<b>22</b>	<b>4295%</b>
<b>Greece</b>	<b>958</b>	<b>83</b>	<b>1054%</b>
<b>Netherlands</b>	<b>876</b>	<b>191</b>	<b>359%</b>



# ***VT ETD Access by US Domains***

	<b>1996</b>	<b>1997</b>	<b>increase</b>
<b>.edu</b>	<b>15,314</b>	<b>112,876</b>	<b>637%</b>
<b>.com</b>	<b>5,309</b>	<b>48,540</b>	<b>814%</b>
<b>.net</b>	<b>2,522</b>	<b>14,026</b>	<b>456%</b>
<b>.org</b>	<b>375</b>	<b>3,132</b>	<b>735%</b>
<b>.gov</b>	<b>282</b>	<b>1,362</b>	<b>383%</b>
<b>.mil</b>	<b>188</b>	<b>1,872</b>	<b>896%</b>



# Library Provides Access to ETDs

## ❖ Internet workstations

### ➤ for students

- ◆ computer labs and classrooms
- ◆ New Media Center (software and assistance)

### ➤ for library users: local and remote

- ◆ OPAC
- ◆ World Wide Web



# Library Internet Workstations-- for Student ETD Authors

## ❖ New Media Center -- Newman Library

- 22 Macs
- scanners, digital video/audio production, etc.
  - ◆ Netscape, Acrobat, Word, PowerPoint, Photoshop, and much more
- helpful staff
- <http://www.nmc.vt.edu>



# Library Internet Workstations-- Public, On-Campus Access to ETDs

- ❖ **locate ETDs through**
  - **OPAC and World Wide Web**
- ❖ **circa 350 workstations (mostly Macs)**
- ❖ **throughout University Libraries**
  - **Newman (main) Library**
    - ◆ **Media Center (50), throughout the building**
  - **Branch libraries**



# Library Introduces Faculty to ETDs

## ❖ Overview of process and access

- from student's submission to public access
- virtual tour of ETD Web sites

## ❖ Faculty concerns

- Now: Future publication potential, copyright
- Previously:
  - ◆ Does the Library have enough online storage space?
  - ◆ Network response time might be too slow



# **Library Issues: Cataloging**

## **Current Improvements and the Outlook for the Future**



# ETD Cataloging

- ❖ **Professional catalogers developed policies and procedures**
- ❖ **Catalogers' workstations**
- ❖ **Cataloging from submission form**
- ❖ **Copy/paste and direct keying**
- ❖ **Input in OCLC, download to OPAC**



# ***VT ETD Cataloger's Workstation*** **HARDWARE**

- ❖ **originally**

- **PC compatible 486s, 8Mb RAM**

- ❖ **now**

- **Gateways w/PentiumII processors, 32Mb RAM**

- ❖ **variety of printers**



# ***VT ETD Cataloger's Workstation SOFTWARE***

- ❖ **OCLC Passport for Windows**
- ❖ **Simultaneous VTLS (opac) sessions**
- ❖ **Catalogers Desktop -- networked CD-ROM**
  - **cataloging rules, manuals, and formats**
- ❖ **Netscape 3.0**
- ❖ **Acrobat Reader 3.0**



# VT ETD Cataloging

- ❖ **same as current cataloging policies, except:**
  - **author-assigned keywords (not LCSH)**
  - **generic (not LC) call no.**
  - **fields/subfields as required for computer files**
  - **full abstracts**
- ❖ **time savings**
  - **cataloger now familiar with computer files**
  - **better equipment/software for word processing**
  - **5 minutes avg. (10-15 minutes for paper TDs)**



# Cataloging completed (OCLC>>OPAC)

**ETD available on the World Wide Web**

- ❖ **Programmatic notification e-mailed to UMI**
- ❖ **Browsable title/author list**
  - **additional access points are coming**
- ❖ **OpenText LiveLink search engine**



# Library Costs

- ❖ **\$12/vol. for paper thesis processing**
  - catalog, bind, security strip, label, shelve
  - @950 vols./yr. = \$11,466
- ❖ **\$3.20/vol. ETD processing**
  - cataloging @950 vols./yr. = \$3040
- ❖ **\$.07/vol. shelving**
- ❖ **\$.04/vol. circulation**



# Library Savings

## Processing New Titles

- ❖ **73.3% savings NOW (\$8360/yr.)**
- ❖ **Future: cataloging costs = \$0/title**
  - **to generate MARC record**
    - ◆ **\$3.65 credit w/OCLC for original bib record contributed**
  - **OCLC access costs remain**
- ❖ **Generate MARC from ETD**
  - **Use tagged elements within e-text to generate bibliographic record: SGML ETD DTD>>MARC**



# **Savings for Libraries can be Realized when ETDs are Available**

- ❖ **Circulating from the general collection**
  - **/month: 1997**
  - **148/month: 1996 (16% from Storage)**
- ❖ **Retrieved from off-site storage (pre-1984)**
  - **57/month: 1997 (19% fewer)**
  - **70/month: 1996**
- ❖ **TDs out through interlibrary loan**
  - **79/month: Jan. 1998 (45% fewer)**
  - **175/month: Feb. 1996**



# Library Issue: Archiving ETDs

- ❖ **Every 15 minutes back-ups made of not-yet-approved submissions**
- ❖ **Hourly back-ups of newly approved ETDs**
- ❖ **Weekly back-ups of entire ETD collection**
- ❖ **Periodically write to CD-ROM**



# Issue: Availability of Library Resources

**In a typical month**

**❖ 81% of VT ETDs available**

**➤ 54% available without restrictions**

**➤ 27% available to VT only**

**❖ 19% unavailable**



# New Concerns for Libraries

- ❖ **Authors limiting access to some ETDs**
  - **all VT ETDs unavailable through InterLibrary Loan**
  - **Contact authors for copies?**
  - **Distribute authors' e-mail addresses?**
- ❖ **Multiple formats (paper and electronic) approved**
- ❖ **URLs >> PURLs and Handles**
  - **maintaining links to VT ETDs**
  - **maintaining links to external sites**



# Anticipated Changes for ETDs

## ❖ Redesign of submission form

- ◆ data for analysis and to generate bibliographies, etc.

## ❖ ETDs in dual formats: PDF and SGML

- ◆ Portable Document Format
- ◆ Standard Generalized Markup Language

## ❖ MARC derived from SGML (ETD DTD)

- ◆ MACHine Readable Cataloging
- ◆ ETD Document Type Definition

## ❖ Distributed searching of NDLTD

- ◆ Networked Digital Library of Theses and Dissertations



# Universities Officially Part of NDLTD

- ❖ **Clemson University**
- ❖ **Concordia University**
- ❖ **Darmstadt U. of Tech.**
- ❖ **Florida Institute of Tech.**
- ❖ **Michigan Tech**
- ❖ **Naval Postgraduate School**
- ❖ **North Carolina State U.**
- ❖ **Rhodes U. (South Africa)**
- ❖ **Rochester Institute of Tech.**
- ❖ **University of Florida**
- ❖ **University of Georgia**
- ❖ **U. of Hawaii, Manoa**
- ❖ **Laval University (Quebec)**
- ❖ **U. of New South Wales (AU)**
- ❖ **U. of South Florida**
- ❖ **U. of Tennessee, Knoxville**
- ❖ **U. of Tennessee, Memphis**
- ❖ **U. of Virginia**
- ❖ **U. Wisconsin - Madison**
- ❖ **Vanderbilt U.**
- ❖ **Virginia Tech**
- ❖ **West Virginia U.**



# Join the NDLTD Initiative

## Networked Digital Library of Theses & Dissertations

### ❖ Browse

- <http://scholar.lib.vt.edu/theses>
- [www.ndltd.org](http://www.ndltd.org)

### ❖ Share your ideas, questions, concerns, experience

### ❖ Contact

- John Eaton, Graduate School ([eaton@vt.edu](mailto:eaton@vt.edu))
- Ed Fox, Computer Science ([fox@vt.edu](mailto:fox@vt.edu))
- Gail McMillan, Library ([gailmac@vt.edu](mailto:gailmac@vt.edu))



# The *VT* ETD Library

<http://scholar.lib.vt.edu/theses/>  
from  
University Libraries, Virginia Tech

**Gail McMillan**  
director, Scholarly Communications Project, University Libraries  
<http://scholar.lib.vt.edu>



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