

# **Library Services and Resources for University Communities**

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Scholarly Communications Project

University Libraries

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# Students and Universities: Relationships will change, but how?

- ◆ Will students enroll in networked courses regardless of institutional affiliation?
- ◆ Will courses continue to be institution-centered?
- ◆ Will credit-for-contact hour continue?
- ◆ Who will award the degree in networked environment?
- ◆ Will one institution provide an entire program of study?
- ◆ What about tuition payments?
- ◆ What about residency requirements?

# Factors Which Make Change Inevitable

- ◆ decreased resources
- ◆ increased costs
- ◆ pressure for more accountability and productivity
- ◆ changing patterns of scholarly communications
- ◆ asynchronous and off-campus instruction
- ◆ information explosion
- ◆ network-based information delivery
- ◆ paramount importance of computer and telecommunications expertise

# VIVA Budget

- ◆ 1994/1996
  - ◆ 1996/1998
  - ◆ **1998/2000:**
  - ◆ 1998/1999
  - ◆ 1999/2000
- ◆ \$5,238,221
  - ◆ \$4,991,000
  - ◆ 2,015,000
    - \$250,000
  - ◆ \$2,015,000
    - \$520,000
  - ◆ Plus \$555,700 per institution per year

# VT Degree Programs

- ◆ College of Agriculture and Life Sciences
- ◆ College of Architecture & Urban Studies
- ◆ College of Arts & Sciences
- ◆ Pamplin College of Business
- ◆ College of Engineering
- ◆ College of Forestry & Wildlife Resources
- ◆ College of Human Resources & Education
- ◆ Virginia-Maryland College of Veterinary Medicine

# Tuition and Fees 1997/98

- ◆ \$4,147 (undergraduate, in-state)
- ◆ \$11,111 (undergraduate, out-of-state)
- ◆ \$4,769 (graduate, in-state) \$7,199 (graduate, out-of-state)
- ◆ \$4,626 (graduate, off-campus studies, in-state)
- ◆ \$7,092 (graduate, off-campus studies, out-of-state)
- ◆ \$7,620 (Veterinary Medicine, Virginia and Maryland residents)
- ◆ \$20,086 (Veterinary Medicine, out-of-state)
- ◆ \$3,420 (room and board, residence hall occupants)

# IDI Goals: Faculty Development

- ◆ Motivate teaching faculty to investigate, create, use alternative instructional strategies
- ◆ Access to state-of-the-art instructional technology

# IDI Goals: Student Access

- ◆ Advice about computer technology
- ◆ Access to computing resources and software unique to disciplinary areas
- ◆ Network-based training materials



# IDI Goals: Course Development

- ◆ Support faculty
- ◆ Electronic libraries of scholarly materials
- ◆ classroom and presentation facilities

# VTOonline

- ◆ Support student enrollment in electronic courses through links to services
- ◆ Support faculty development of online course materials
- ◆ Recruit and retain international students

# VT Library Holdings

◆ <b>Volumes</b>		<b>2,005,765</b>
– <i>vols. added 1996/97</i>	70,066	
– <i>vols. withdrawn 1996/97</i>	43,170	
– <i>monographs purchased</i>	34,639	
◆ <b>Serials</b>		<b>18,774</b>
– <i>Serials --purchased</i>	13,024	
– <i>Serials--deposited</i>	5,750	
◆ <b>Microforms</b>		<b>6,010,711</b>
◆ <b>Computer Files</b>		<b>5,679</b>
◆ <b>Maps</b>		<b>129,613</b>
◆ <b>Audio Tapes, Cassettes, CD's</b>		<b>8,418</b>
◆ <b>Photographs</b>		<b>64,520</b>
◆ <b>Film &amp; Video</b>		<b>8,238</b>

# VT Library Activity

◆ Circulation	382,787
–Renewed materials	67,501
◆ Reserve	842,806
–Manual and electronic	
◆ InterLibrary Loan	
–Provided to others	26,494
–Received	16,565

# VT Library Personnel

◆ Professional staff 37 FTE

– \$1,415,803

◆ Support staff 97 FTE

– \$2,056,817

◆ Student assistants 69 FTE

– \$583,307

◆ Total salary and wages: \$4,055,927

# VT Library Materials Expenditures

◆ Monographs	1,037,818
◆ Serials	4,058,774
◆ Other formats	48,772
◆ Other materials	515,774
◆ Contract binding	179,248
◆ <i>Total expenditures 1996/97</i>	<i>1,781,612</i>

# Resources available through VIVA

- ◆ **Electronic titles** **310,000**  
Cambridge Scientific (54), First Search (50), GaleNet (5),  
MathSciNet (2), statistical reports, books (300,506),  
full text poetry/verse (9,738)
- ◆ **Electronic subscriptions** **8,700**  
Academic Press (174), Business ASAP (460), Dow Jones  
(5,496), Expanded Academic Index (858), General  
Business Files (563), etc.

# EJournals from SCP

- ◆ **ALAN Review**
- ◆ **Journal of Computer-Aided Environmental Design and Education**
- ◆ **Journal of Fluids Engineering**
- ◆ **Journal of Industrial Teacher Education**
- ◆ **Journal of Technology Education**
- ◆ **Journal of Technology Studies**

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- ◆ **+5 journals mirrored from commercial scholarly publishers**

- ◆ **Journal of the International Academy of Hospitality Research**
- ◆ **Journal of Vocational and Technical Education**
- ◆ **Journal of Youth Services in Libraries**
- ◆ **Society for Philosophy & Technology**
- ◆ **Women in Literature and Life Assembly**

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- ◆ **+3 “dead” titles**



# Ejournals at <http://scholar.lib.vt.edu/ejournals/>

<i>title</i>	<i>availability</i>	<i>issues online</i>	<i>coverage online</i>	<i>formats</i>
✦ ALAN	e+paper	11	Winter 1994 -	HTML
✦ Catalyst	e+paper	1	Summer 1991-Spring 1995	HTML
✦ CJTCS	e only	14	June 1993 -	DVI, PS, PDF
✦ JCAEDE	e only	3	Fall 1995-Fall 1997	HTML
✦ JDC	e only		Fall 1998 -	HTML
✦ JCN	e only	7	May 1996-March 1997	HTML
✦ JFE	e+paper	26	1993 -	ASCII
✦ JFLP	e only	11	1995 -	DVI, PS
✦ JIAHR	e only	9	Nov. 1990 -	HTML
✦ JITE	e+paper	13	Fall 1994 -	HTML
✦ JTE	e+paper	18	Fall 1989 -	HTML & PDF
✦ JMSEC	e+paper	17	1994 -	PS, PDF
✦ JTS	e only	4	Summer 1996 -	HTML
✦ JVME	e+paper	2	Spring 1997-Fall 1997	HTML
✦ JVTE	e+paper	6	Fall 1996 -	HTML
✦ JYSL	e+paper	10	Spring 1995-Fall 1997	HTML
✦ Modal	e+paper	26	Jan. 1986-Jan. 1993	Bitmaps, HTML
✦ Phil & Tech	e only	8	Fall 1995 -	HTML & PDF
✦ SNDE	e only	5	Apr. 1996-Apr. 1997	PS, PDF
✦ WILLA	e+paper	4	Fall 1992 -	HTML

# How are ETDs done at Virginia Tech?

- ◆ Produced using standard word processing packages
- ◆ Delivered as portable document format (PDF) files to library/archive server
- ◆ Reviewed by the Graduate School
- ◆ Cataloged and archived by the library
- ◆ Downloaded by UMI from the library

# 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

# Additional Goals of the VT ETD Project

- ◆ Graduate research results become more readily and more completely available
- ◆ Graduate education improves by sharing ETDs
- ◆ Universities unlock intellectual property
- ◆ Graduate students learn about electronic publishing
- ◆ Graduate students save money
- ◆ Continuous online access

# What are the long term goals?

- ◆ 400K students/yr getting graduate degrees are exposed to e-publishing
- ◆ ETDs become rich hypermedia works
- ◆ Graduate education is more effective, students are more productive
- ◆ University publishes its scholarship
- ◆ Knowledge, technology transfer are faster and better

# How has usage changed?

- Virginia Tech theses submitted 1990 - 1994, combined average circulation per copy is 2.24/yr
- Virginia Tech dissertations submitted 1990 - 1994, combined average circulation per copy is 3.2/yr
- There were 4600 requests for ETDs (PDF files) in 1996
- 74,028 ETDs requested in 1997
- 244,987 ETDs requested Jan.-Sept. 1998

# Usage of ETDs in VT Collection

	1996	1997	1998 Jan. - Sept.
✦ Total Requests	37,171	247,537	440,142
✦ Requests/Day	102	685	1,627
✦ Requests for PDFs/ETDs	4,600	72,854	244,987
✦ Requests for Abstracts/HTMLs	25,829	112,633	177,647
✦ Hosts Served	9,015	22,725	28,022

# NDLTD Participating Universities

- ✦ Air University, Maxwell AFB, AL
- ✦ Chungnam Uni. (Korea)
- ✦ Clemson University
- ✦ College of William and Mary
- ✦ Concordia University (Illinois)
- ✦ Curtin University of Tech. (Australia)
- ✦ Darmstadt University of Tech. (Germany)
- ✦ Florida Institute of Technology
- ✦ Griffith University (Australia)
- ✦ Gyeongsang Nat Uni. (Korea)
- ✦ Michigan Tech
- ✦ Nanyang Tech Uni. (Singapore)
- ✦ National University of Singapore (CS)
- ✦ Naval Postgraduate School, Monterey
- ✦ North Carolina State University
- ✦ Rhodes University (South Africa)
- ✦ Rochester Institute of Technology
- ✦ St. Petersburg State Tech. U. (Russia)
- ✦ Uni. de las Americas Puebla (Mexico)
- ✦ Université Laval (Québec, Canada)
- ✦ University of Florida
- ✦ University of Georgia
- ✦ University of Guelph
- ✦ University of Hawaii, Manoa
- ✦ University of Maine
- ✦ University of New South Wales (Australia)
- ✦ University of Oklahoma
- ✦ University of Queensland
- ✦ University of South Florida
- ✦ University of Sydney
- ✦ University of Tennessee, Knoxville
- ✦ University of Tennessee, Memphis
- ✦ University of Texas, Austin
- ✦ University of Virginia
- ✦ University of Waterloo
- ✦ University of Wisconsin, Madison
- ✦ Vanderbilt University
- ✦ Virginia Tech
- ✦ West Virginia University
- ✦ Wilfrid Laurier University



# NDLTD Goals

- Provide scholars with access beyond their host institutions
- Improve timely access to the information
- Links to related works and resources on the Internet
- Libraries serve more users without additional staff
- Reduce the need for additional shelf space in libraries
- Save students money producing their final research projects
- Students can be more creative in documenting their final research
- Students learn about electronic publishing

# What are some of the challenges?

- ◆ Training students and faculty
- ◆ Explaining importance to publishers
- ◆ Managerial and technical steering
- ◆ Evaluating at national scale and over research career of graduate students
- ◆ Improving digital library technology
- ◆ Scalability, sustainability, usability
- ◆ Expanding the concept to other universities
- ◆ Developing the infrastructure for the NDLTD

# Why might your university want to be involved?

- ◆ To improve graduate education
- ◆ To unlock university information
- ◆ To save money for students and for the university
- ◆ To build an important digital library that will help other digital libraries get built

# Help Available to Others

- ◆ WWW site with information you might need
- ◆ Free automated submission system
- ◆ Student guidelines, style sheets, training materials, FAQs, PR info
- ◆ Word processor templates and converters
- ◆ Multimedia educational materials
- ◆ Workshops for pilot institutions at Virginia Tech

# How can your university get involved?

- ◆ Organize a planning/implementation team
  - Graduate School
  - Library
  - Information Technology
- ◆ Adapt the Virginia Tech solution
- ◆ Parallel development
  - Build interest and consensus
  - Start trial/allow optional submission

# 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)
- Ed Fox, Computer Science (fox@vt.edu)
- Gail McMillan, Library (gailmac@vt.edu)

# Electronic Archiving

- ◆ Retain all works online and available all the time from a single, stable server.
  - If secondary server, apply age and/or usage criteria
- ◆ Uniform Resource Numbers
  - PURLs (OCLC)
  - Handles (CNRI)

# Archiving and Security

## ◆ Data:

- Back up: hourly and weekly
- Programmatic transfer between servers
- Copies: 4 month cycles
- Annual copy

## ◆ Content

- Works cannot be modified or replaced by authors or readers
- System administrators reluctantly modify
  - ◆ Change access restrictions
  - ◆ Activate e-mail addresses



# SCP Staffing

- ◆ Director
  - librarian, faculty member
  - half- then full-time from Technical Services
- ◆ Technical Director
  - programmer then upgraded to systems analyst
  - half-time shared with Library Automation
  - Fall 1998 - full time in SCP
- ◆ Programmer
  - half-time “Adds Clerk” from Serials/Technical Services
  - evolved into full-time HTML markup
  - upgraded from grade 5 to grade 10 - spring 1997

# SCP's 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