

***Making the Transition from  
Print to Electronic Serial  
Collections: a New Model for  
Chemistry Libraries?***

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# **Brief Outline**

- **What is current model?**
- **What is the proposed model?**
- **What data support the move/transition?**
- **What are the benefits to the new model?**
- **What are the obstacles to the new model?**
- **Summary and Conclusions**

# ***Environment /UIUC Chemistry Library***

- **Biochemistry, Chemical Engineering and Chemistry subjects covered**
- **90 faculty, 500 graduate students in primary clientele**
- **All departments rank consistently in US top 10**
- **Approximately 90,000 volumes in UIUC Chemistry Library**
- **Chemistry serials budget \$598,103 in 2002**
- **Chemistry Library presently occupies about 7,500 sq. ft.**
- **E-journals located at:**  
**<http://www.library.uiuc.edu/chx/ejournals.asp>**
- **Approximately 500 currently-received print and 500 accessible electronic chemistry journals**

# ***What is the current model for academic Chemistry Libraries?***

- Large, print based serial collections covering long time periods housed on site.
- New, unbound issues available for browsing, then bound and placed on shelves.
- When needed, articles from journals copied on photocopiers.
- Distributed access to electronic journals.
- Distributed access provided to databases in Chemistry or other online science indexes.

# ***What is the NEW model proposed for the UIUC Chemistry Library?***

- Large print serial collections covering long time periods housed off site (remote storage) when fully available online in full text.
- New, unbound issues available for browsing for one year; are sent to remote storage; are not bound.
- When needed, articles from journals are printed from online full text.
- E-journal backfiles are purchased and made accessible whenever possible, allowing their print counterparts to be sent to remote storage.
- SciFinder Scholar and other online science indexes available for remote searching.

# **Factors Influencing the New Model at UIUC**

- Physical use of print collection showing steady decrease.
- Virtual use of all electronic resources showing rapid increase.
- Landlord needs space for other purposes (laboratories and classrooms).
- Users propose and vote on new model.
- Library builds first remote storage facility.
- Publishers produce e-journal backfiles.
- \$\$\$\$\$\$\$\$



# **“Feasibility Studies” Conducted**

- **Calculated space saving possibilities**
- **Researched extent of online publications available; made predictions on stability, quality, quantity.**
- **Surveyed faculty**
- **Confirmed remote storage facility on track**
- **Examined library management data for trends**
- **Examined usage data**
- **Realigned staffing for transition to new model**

# ***“Feasibility Studies”***

## **Calculated space saving possibilities**

- Estimated that we may no longer need to plan for a 100% expansion of the library (to over 16,000 square feet).**
- Agreed that a non-expandable 8,000 square foot chemistry library might suffice, with Stacks and Remote Storage locations used for peripheral materials and with the focus on online access to core journals.**
- Also agreed the Chemistry Library could “return” space to School of Chemical Sciences for use as labs and/or classrooms.**



# *Initial Volumes Proposed For Remote Storage*

	Linear Feet of Journals	Percent of Total
Total UIUC Chemistry	2,279	100%
ACS Journals	483	21%
Elsevier Organic Package	178	8%
All Elsevier Backfiles in Chemistry	804	35%
Science, PNAS, Phys Revs	300 (est)	13%
Science Citation Index	48	2%
Wiley Polymer Package ( '03)	?	?

# Remote Storage Planned at UIUC



# ***“Feasibility Studies”***

**Researched extent of online publications available; made predictions on quantity, quality, stability.**

- In 2000 the UIUC Chemistry Library had access to approximately 100 electronic journals; by June 2002, the number has grown about 500 chemistry-related titles.**
- “Downtime” very limited; outages under 1% of total availability. Exceptions exist, but usually for single-title publishers, not packages.**
- Backfiles with missing articles or illegible figures very limited and no worse than the print collection. Good response when reported.**
- Ultimately determined the model “had legs.”**

# ***“Feasibility Studies”***

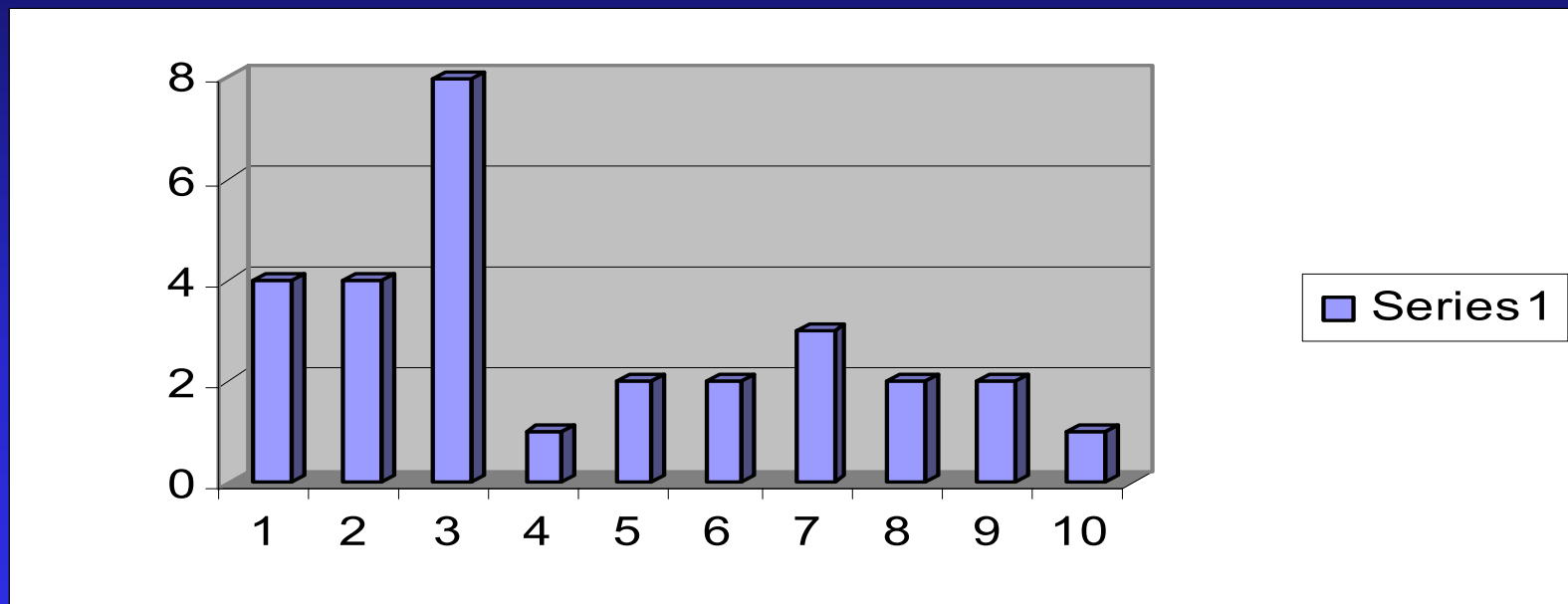
**Asked the SCS faculty if the new model was acceptable and workable.**

- While survey response rate was low, it was typical.**
- Positive reaction to new model was confirmed.**
- “No news is good news” library management model.**

# Survey Question 1:

**SURVEY CONDUCTED SPRING 2001**

The Chemistry Library now provides most of my journal library needs through electronic access to library materials.

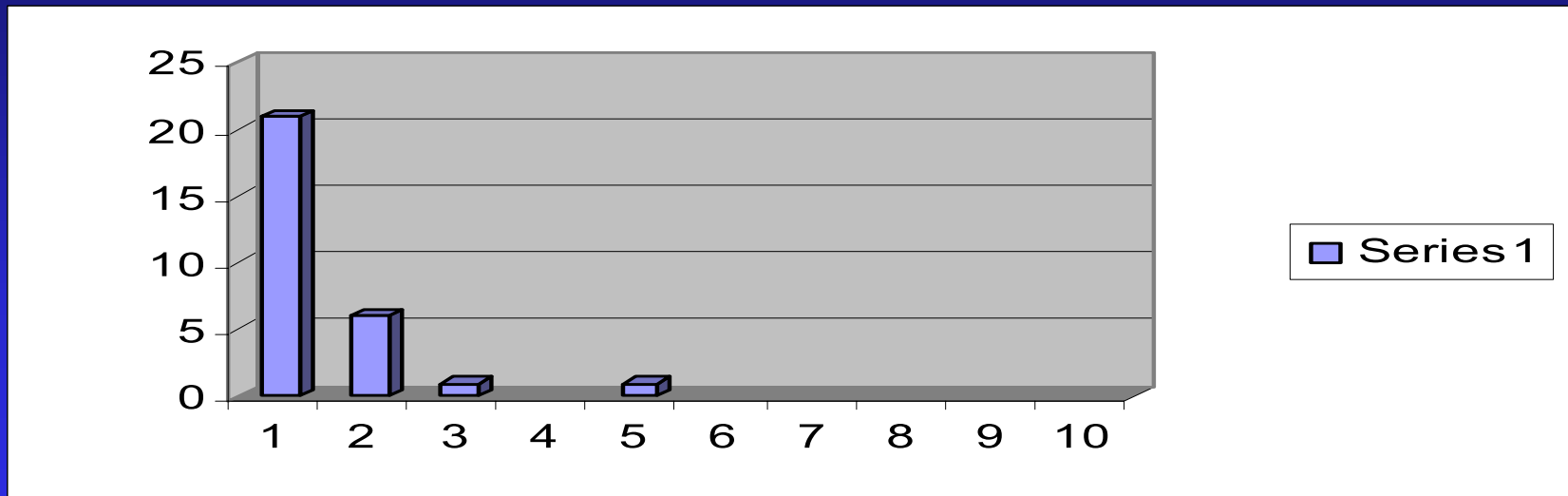


**Strongly Agree.....Strongly Disagree**

# Survey Question 2:

**SURVEY CONDUCTED SPRING 2001**

Acquisition of journals in electronic full-text format, building a collection accessible from any location, should be pursued.

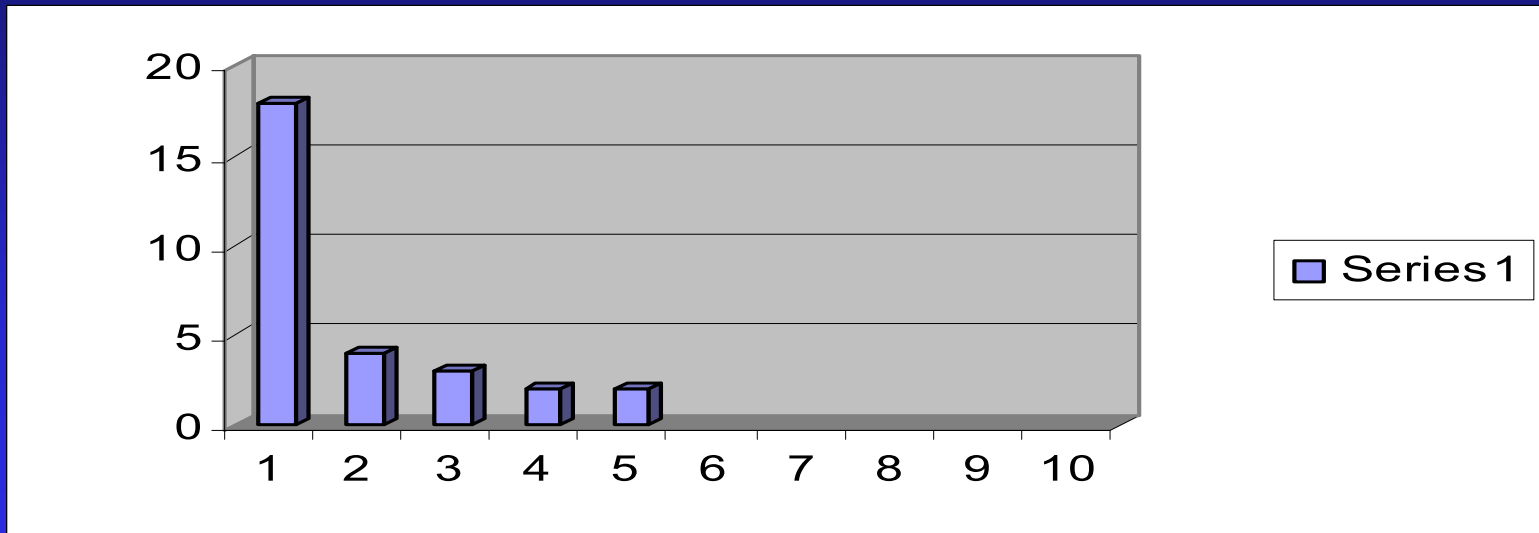


**Strongly Agree.....Strongly Disagree**

# Survey Question 3:

*SURVEY CONDUCTED SPRING 2001*

Acquisition of backfiles of digitized older journals and indexes should be pursued.

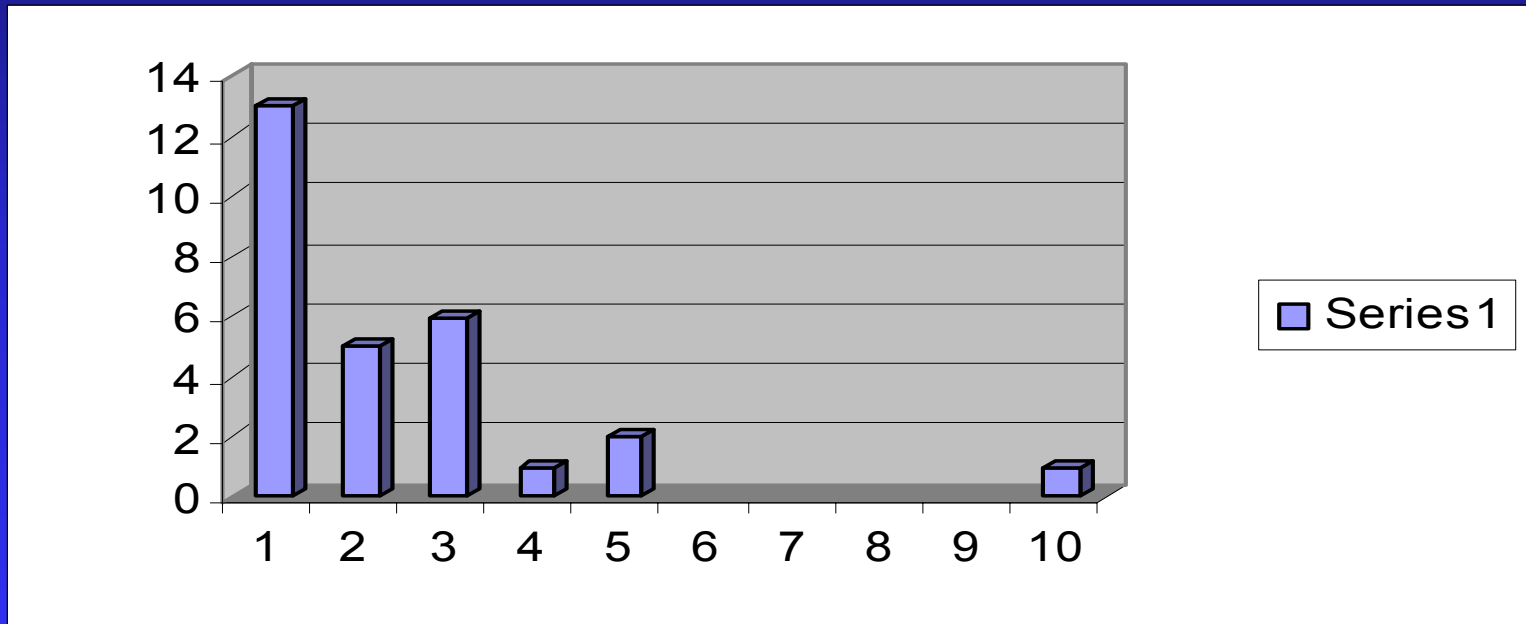


**Strongly Agree.....Strongly Disagree**

# Survey Question 4:

**SURVEY CONDUCTED SPRING 2001**

The SCS should support a new model for the Chemistry Library that focuses on print access to current unbound journals, electronic access to all journals (where available) and remote access to duplicated print journals with 24-hour recall.



**Strongly Agree.....Strongly Disagree**



# **Survey Question 5:**

**SURVEY CONDUCTED SPRING 2001**

A remodeled chemistry library should have the following features and provide the following services:

“I strongly agree that the library could put most of its holdings in storage, or even dispose of them soon. For example, J. Phys. Chem. will have all back issues to the 19th century available electronically next year & this will be the standard model soon. I have used the library 100s of times in the last months—but 99.5% of the time from my desktop!”

# **Survey Question 5:**

**SURVEY CONDUCTED SPRING 2001**

A remodeled chemistry library should have the following features and provide the following services:

“Expand electronic access, but preserve immediate access to older print journals where no web access is available.”

“I think this model makes sense in terms of services/space, but we are not there yet.”

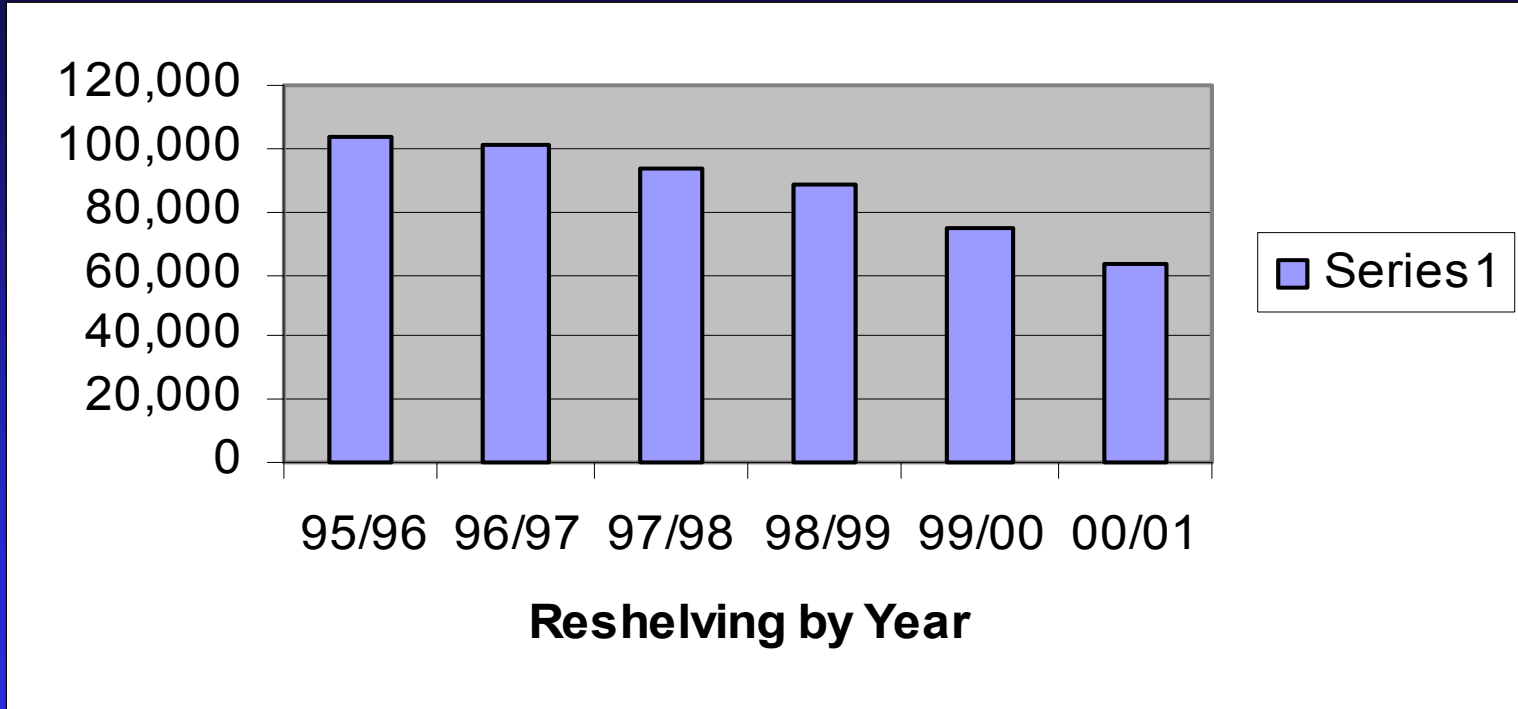
“Convenient display of current journals, ample space for use of collection and student use of library, sufficient terminals for electronic searching on site without waiting. Bound print journals for five past years.”

# ***“Feasibility Studies”***

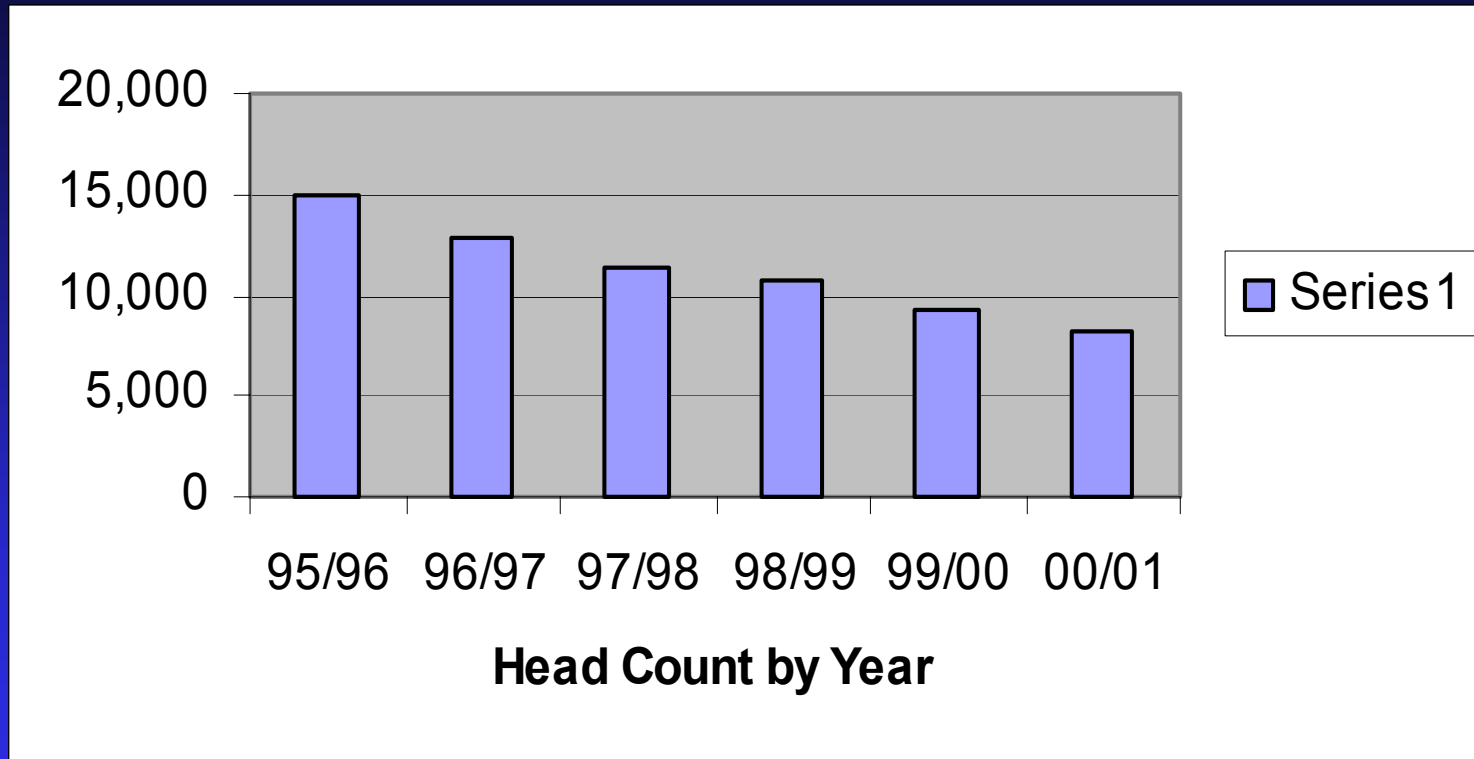
**Examined library management data for trends**

- Data collected beginning in 1988**
- Data show trends as predicted by environmental changes.**

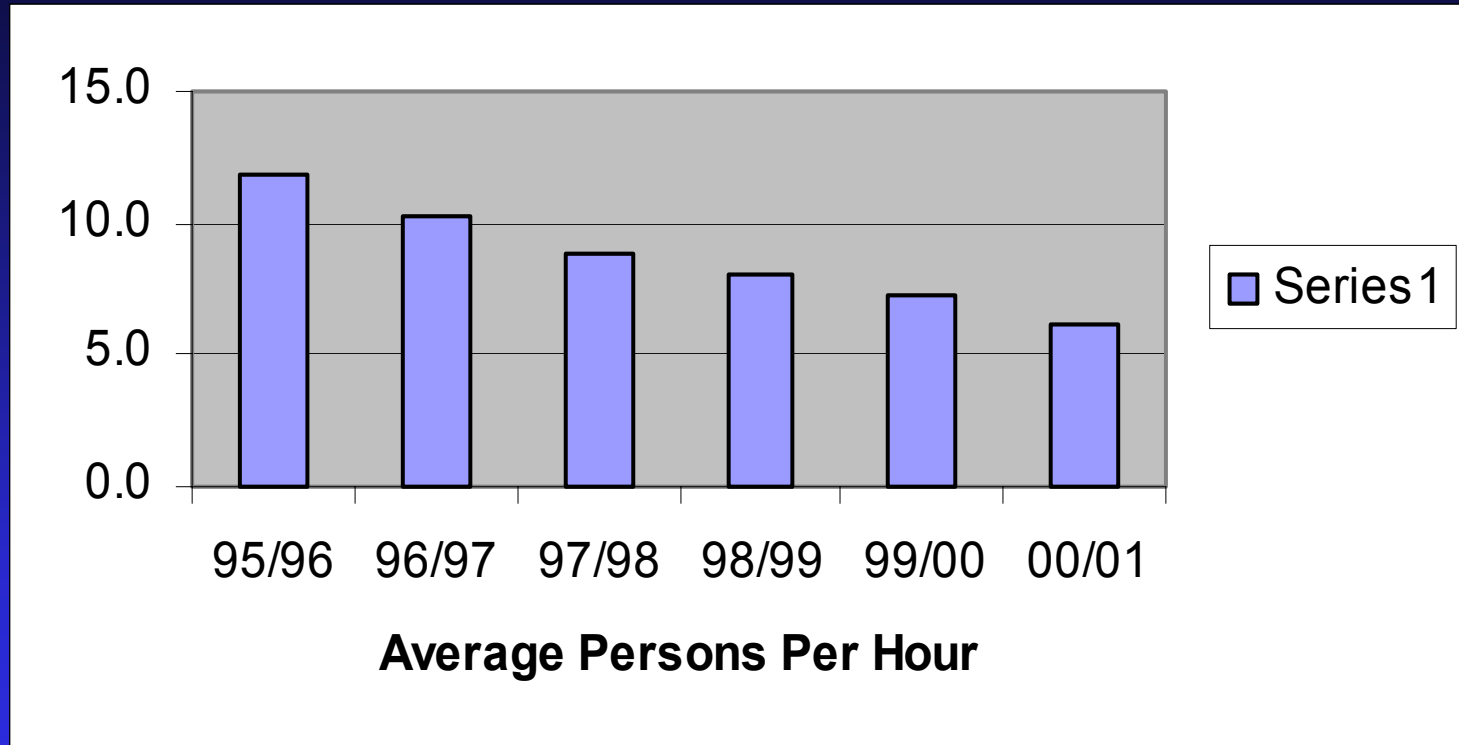
# *Other Data Showing Changing Model*



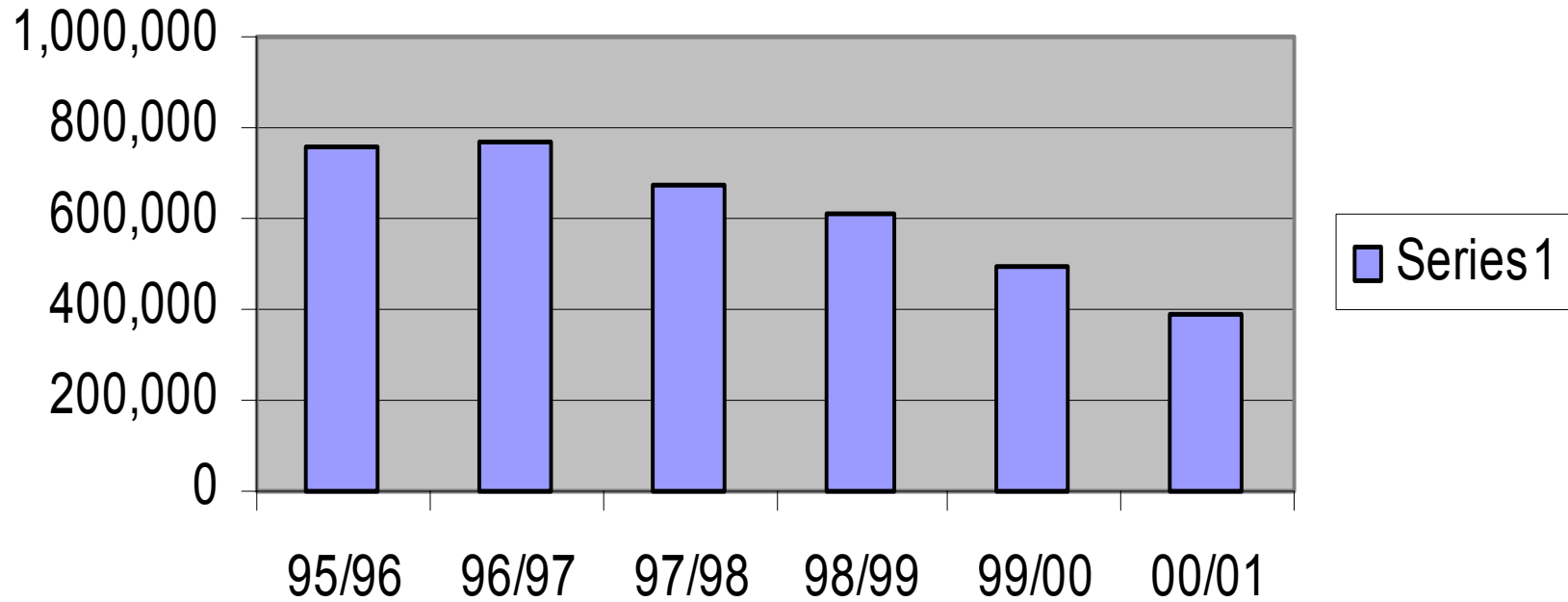
# *Other Data Showing Changing Model*



# *Other Data Showing Changing Model*



# *Other Data Showing Changing Model*



**Copier Statistics by Year**

# ***“Feasibility Studies”***

## **Examined usage data**

- **Print use measured in 1988, 1993, 1996, 1998, 2000 and 2002.**
- **Electronic use measured in 2000 and 2002.**
- **“Flip-Flop” from print to electronic as primary access took place between 2000 and 2002.**



# ***Definition of “Use”***

- **Circulation of bound and unbound journals**
- **Use of journals within the library determined through reshelving**
- **Interlibrary lending**
- **Interlibrary borrowing**
- **Electronic Use (statistics provided by vendors for 64% of e-journals in 2002 - cannot measure 100% of e-journal use)**
- **In later years, use studies were conducted for 3 months and doubled in order to compare to previous 6 month studies.**

# *UIUC Chemistry Library Journal Use-study Results (Print and Electronic Use for 6 months)*

	1988	1993	1996	1998	2000	2002
Library Use	28,357	45,632	41,178	43,342	30,108	18,944
2-hr Circ	1,689	476	276	298	108	124
ILL Lending	1,445	716	812	818	554	898
<b>Subtotal</b>	<b>31,501</b>	<b>46,824</b>	<b>42,266</b>	<b>44,458</b>	<b>30,770</b>	<b>19,966</b>
ILL Borrowing	202	160	224	192	534	532
E-Journal Use	0	0	0	0	51,368	323,146
<b>TOTAL USE</b>	<b>31,703</b>	<b>46,984</b>	<b>42,490</b>	<b>44,650</b>	<b>82,672</b>	<b>343,644</b>



# *Print/Electronic Use Ratios*

	1998	2000	2002
Print Use	44,458	30,770	19,966
Electronic Use	0	51,368	323,146
Total Use	44,458	82,138	343,112
Percentage Split	Print 100%	Print 37%	Print 6%
	E 0%	E 63%	E 94%

# Collection Cost-Use Ratios

	1988	1993	1996	1998	2000	2002
Chemistry Collection						
Journal Costs (Annual)	\$223,823.18	\$313,356.19	\$373,693.98	\$455,422.89	\$540,665.94	\$657,913.30
Print Use (6 mo)	31,501	46,824	42,266	44,458	30,770	19,966
Electronic Use (6 mo)	0	0	0	0	51,368	323,146
<b>TOTAL</b>	<b>31,501</b>	<b>46,824</b>	<b>42,266</b>	<b>44,458</b>	<b>82,138</b>	<b>343,112</b>
Cost/Use Ratio	\$3.55	\$3.35	\$4.42	\$5.12	\$3.29	\$0.96
					** Added 10% for E journals	

**C/U Ratio = Annual cost divided by 2x(6 mo use)**

# Does E Access Change Print Use?

*A look at three ACS journals' use over 14 years*

	1988	1993	1996	1998	2000	2002
JACS						
Print Use (6 mo)	3176	5334	5094	5266	2894	2860
E Use (6 mo)	0	0	0	0	7674	13,066
TOTAL	3176	5334	5094	5266	10,568	15,926
	1988	1993	1996	1998	2000	2002
<u>Analytical Chem</u>						
Print Use (6 mo)	402	630	540	570	524	236
E Use (6 mo)	0	0	0	0	3564	3444
TOTAL	402	630	540	570	4088	3680
	1988	1993	1996	1998	2000	2002
Biochemistry						
Print Use (6 mo)	540	906	958	1018	804	294
E Use (6 mo)					3940	5822
TOTAL	540	906	958	1018	4744	6116

**(Answer: Overtime, Yes)**

# Analyzing Cost Effectiveness of Electronic Journal Packages

## ACS Journals Package (about 33 titles)

	2000	2002	% Change
Print Use*	14,346	12,900	-10%
Print Cost (Annual)	\$ 29,081.00	\$ 35,650.00	23%
Cost/Use Ratio	\$ 2.03	\$ 2.76	36%
Electronic Use*	67,624	110,696	85%
Electronic Cost(Annual)	\$ 4,842.66	\$ 5,197.06	7%
Cost/Use Ratio	\$ 0.07	\$ 0.05	-42%
Total Use	81,970	123,596	67%
Total Cost	\$ 33,923.66	\$ 40,847.06	20%
Total Cost/Use Ratio	\$ 0.41	\$ 0.33	-28%

**\*Use data corrected to 12 months**

# **Analyzing Cost Effectiveness of Electronic Journal Packages**

**All Elsevier Journals / All Subject Areas (610 titles)**

Cost for All Print Elsevier	\$1,144,662.66
Cost for Electronic Elsevier	\$114,154.00
Total Annual Cost	\$1,258,816.66
Annual Use/Electronic	112,038
Cost (Print + E) / Use (E)	\$11.24

**E Journal Use Data are from 4/01- 3/02**

# *Analyzing Cost Effectiveness of Electronic Journal Packages*

**CHEMISTRY ONLY Elsevier Journals (58 titles)**

	2000	2002
Print Use	10,024	9,248
Print Cost	\$181,244.48	\$205,696.95
Cost/Use Ratio	\$18.08	\$22.24
E Use		30,288
E Cost		\$ 19,541.21
Cost/Use Ratio		\$0.65
Total Use	10,024	39,536
Total Cost	\$181,244.48	\$225,238.16
Total C/U Ratio	\$18.08	\$5.70

**E-Journal Use data not available in 2000**

**E-Journal Use Data “2002” are from 4/01- 3/02**



# ***“80/20 Rule” and the 40/2 Rule”***

- **Trueswell’s “80/20” states that 80% of use will come from 20% of the collection.**
- **My “40/2” rule states that 40% of use will come from approximately 2% of the collection.**
- **These formulas are not as reliable once electronic use becomes part of the equation.**

# ***100 Most-Frequently Used Titles***

***PRINT ONLY***

***(approximately 20% of total collection)***

	1988	1993	1996	1998	2000	2002
Use (6mo)	25,147	38,737	35,578	37,610	24,056	15,692
% Total Use	79.8%	82.7%	84.2%	84.5%	78.2%	79%

# ***Ten Most-frequently Used Titles***

***PRINT ONLY***

***(approximately 2% of total collection)***

	1988	1993	1996	1998	2000	2002
Use (6mo)	10,260	17,776	16,468	16,524	10,310	7,660
% Total Use	33.0%	38%	39%	37%	34%	38%

# Top 10 Titles Print and Electronic 2002 / 6 months of use

## PRINT

1	Journal of Amer. Chem Soc	2,860
2	Journal of Organic Chem	1,736
3	Journal of Chem Ed	580
4	Tetrahedron Letters	560
5	Inorganic Chemistry	344
6	Angewandte Chemie	342
7	Journal of Physical Chem	334
8	Journal of Chemical Physics	320
9	Biochemistry	294
10	Synthesis	290

## ELECTRONIC

1	PNAS	31,706
2	Journal Biol Chemistry	30,162
3	Applied Physics Letters	25,412
4	Physical Review Letters	24,426
5	PROLA	17,720
6	Angewandte Chemie	17,252
7	Journal of Chemical Physics	15,676
8	Physical Review B	14,826
9	Journal of Amer. Chem Soc.	13,066
10	Biochemistry	5,822

(6 months of use)

# ***Possible Barriers to the New Model***

- Speed and accessibility of the Net
- Cost of maintaining print and “e”
- Total reliance on technology
- Patron acceptance of the model
- Cost of storage, remodeling space
- Staff upgrades and retraining
- “Your mileage may differ”
- Eventual choices between print and electronic and the repercussions for resource sharing.

# ***Positive Features of the New Model***

- **Huge increases in use**
- **More cost-effective use of funds**
- **Distributed access is the model of choice for patrons**
- **Backfiles becoming more available**
- **Cost savings in binding and storage**
- **Local physical space used for people needs, not storage needs**

# ***Moving the Model Forward***

- **Unlink print and electronic journal subscriptions**
- **Segment e-journal packages or move to “pick and choose”**
- **Increase access to e-journal backfiles (at a one-time cost!)**
- **Consortial print archiving or regional clearinghouses**
- **Increase access to publisher-based use statistics**

# ***Conclusions***

- ◆ **Data Collection is Critical to Monitor the Progress of the New Model**
  - ◆ Data are important when dealing with scientists and library administration.
  - ◆ Confidence in data = confidence in management.
  - ◆ Data on cost/use can help determine when it's time to move from ownership to access, or can help to address large investments in e-journal packages.



# ***Conclusions***

- ◆ **The UIUC Chemistry Library is moving toward a new model based on a number of monitors. It is better to shape and direct that model than react to it later.**
- ◆ **Making the best use of library resources, from space to dollars, is good stewardship and responsible librarianship.**
- ◆ **Listening to and working with your clientele just make sense. Think “hearts and minds.”**

***Thank You***