

The role of publishing in the research process

Carol Tenopir
University of Tennessee
ctenopir@utk.edu

1. What are the roles of scholarly publications in research?
2. What is the value of scholarly publications and how does value change with roles?
3. How have things changed?

Carol Tenopir,
Use and Users of Electronic Library
Resources: An Overview and
Analysis of Recent Research Studies
[www.clir.org/pub/reports/pub120/pub
120.pdf](http://www.clir.org/pub/reports/pub120/pub120.pdf)

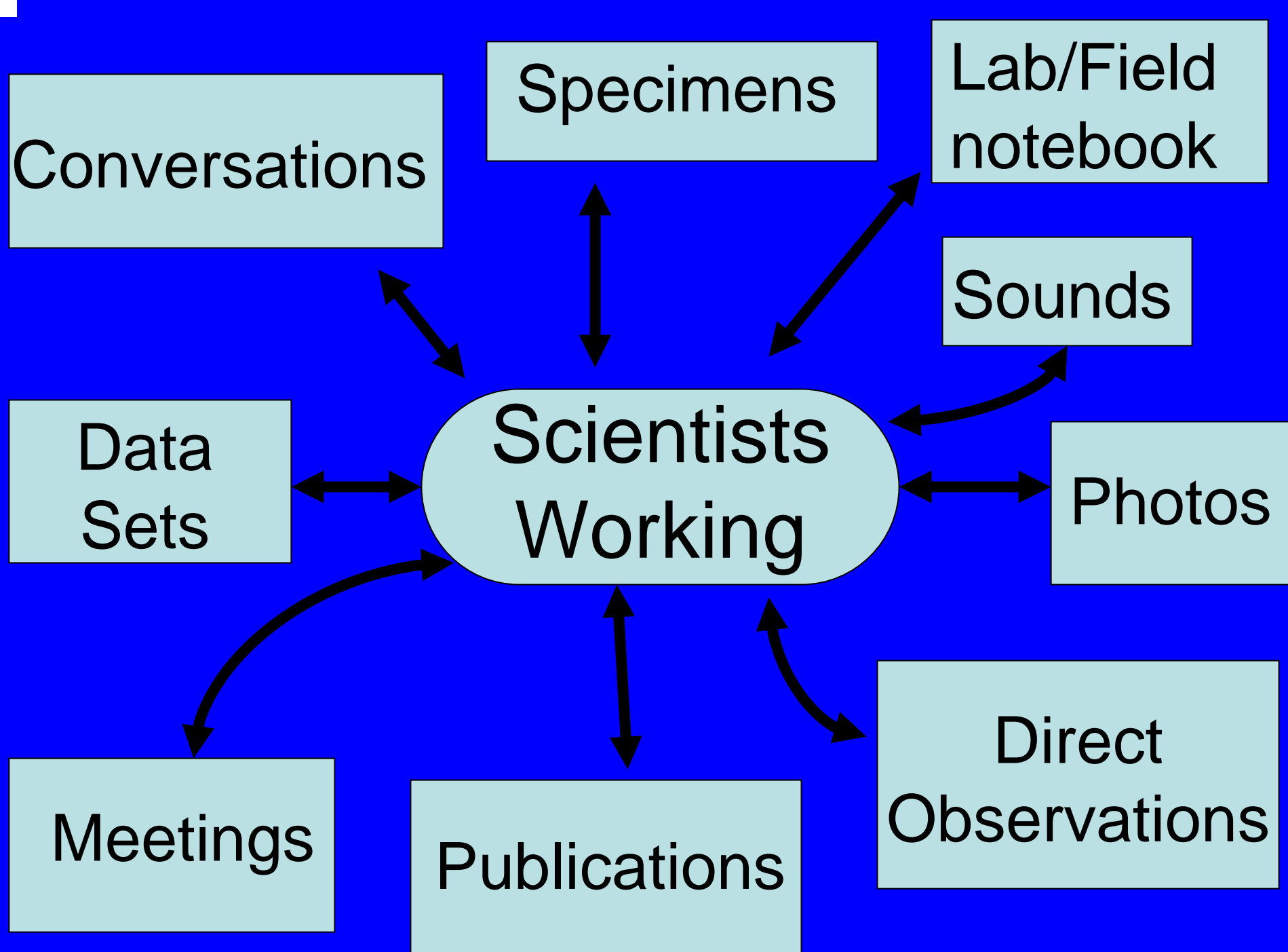
Some Important Research Studies

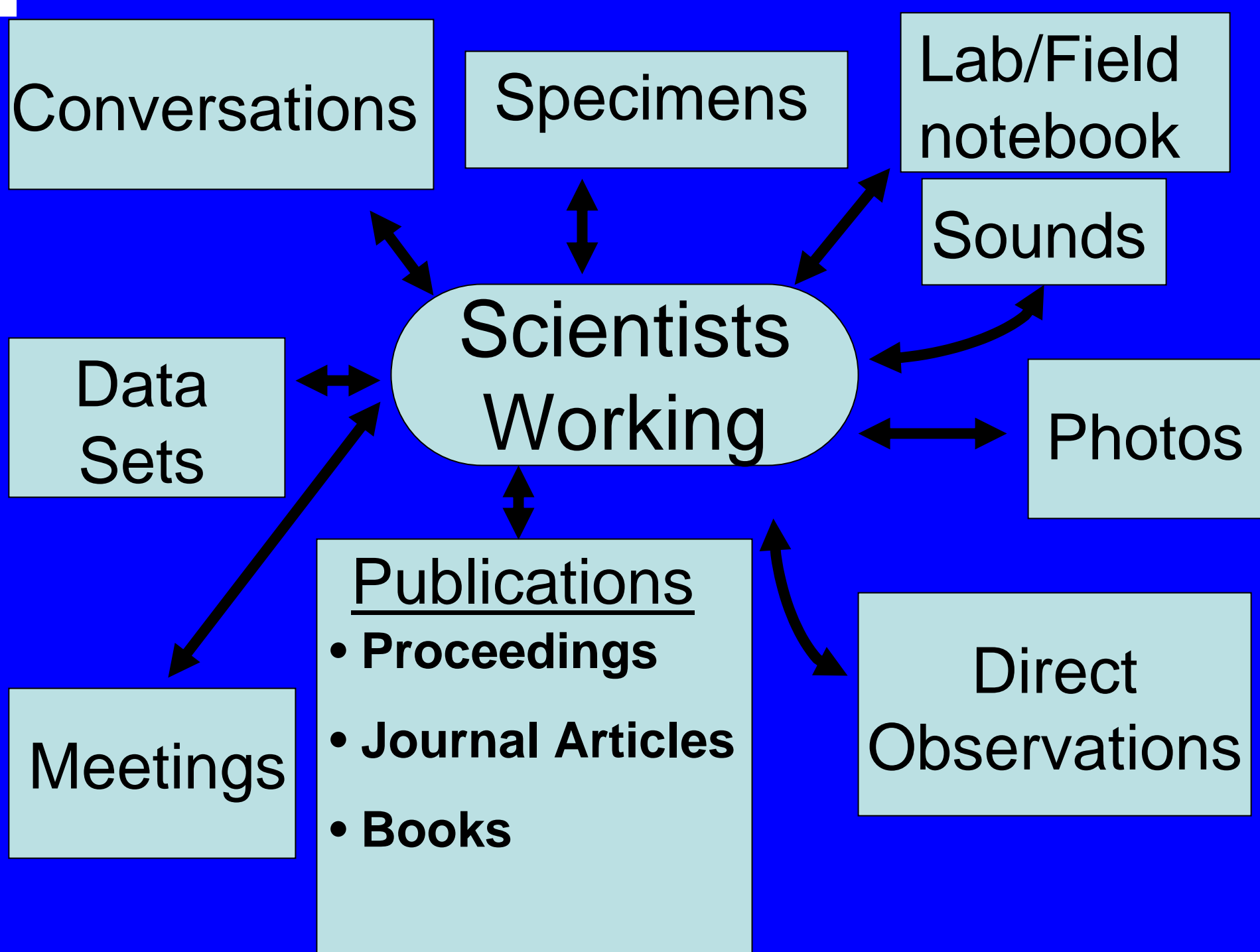
- SuperJournal (late 1990s)
- HighWire eJUST
- OhioLINK
- CIBER
- Outsell reports
- Tenopir & King

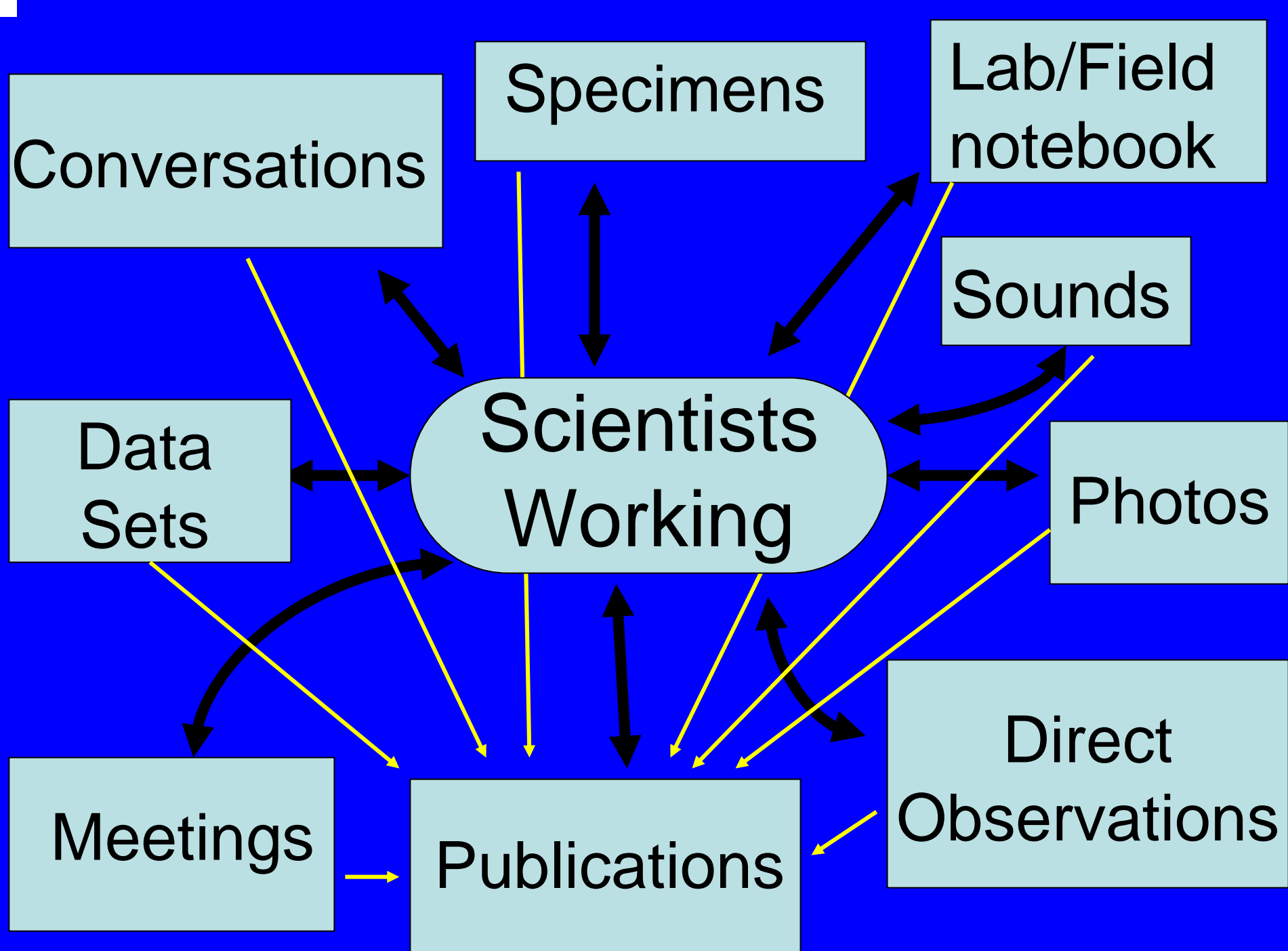
Tenopir & King Data From:

- ~30,000 scientists, engineers, physicians, and social scientists
- 1977 to the present
- University and non-university settings
- Recent surveys at U.S. and Australian universities, pediatricians, astronomers

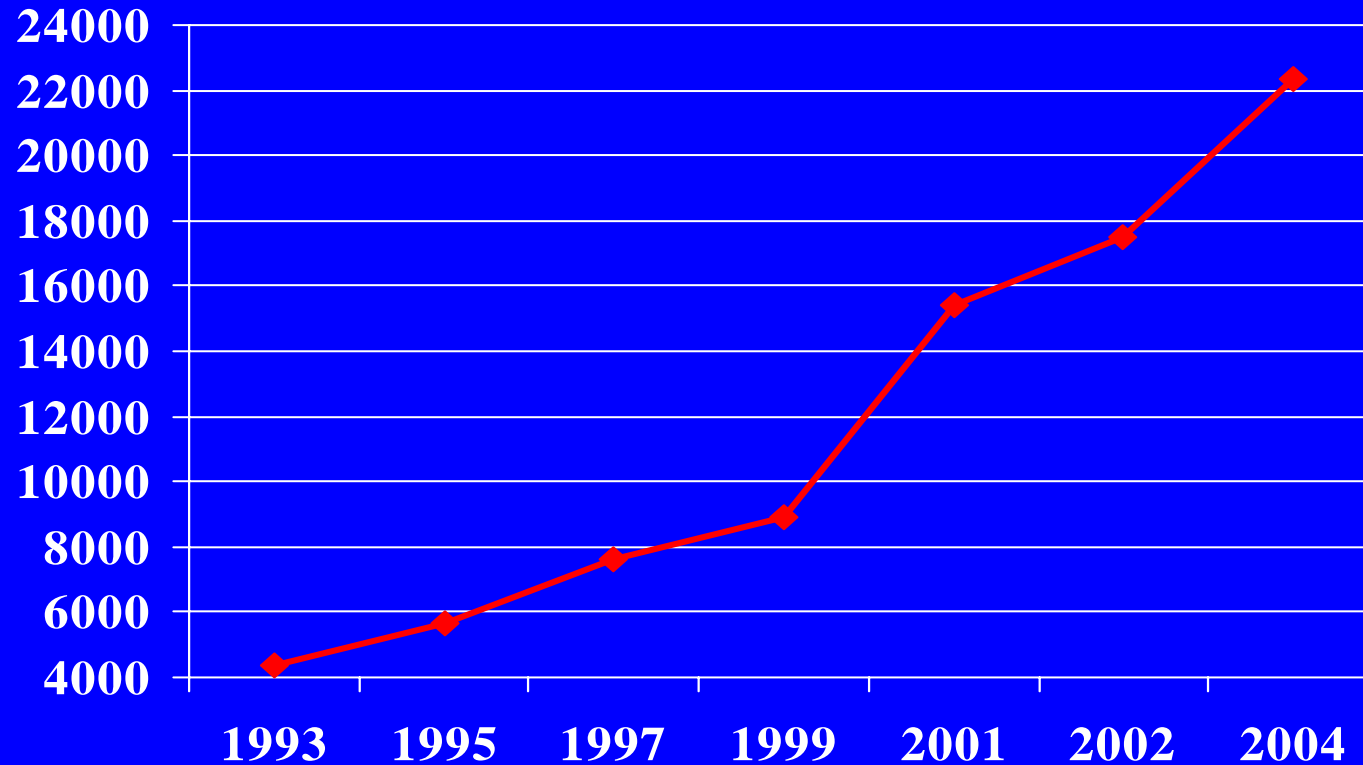
What are the roles of scholarly publications
in research?







Growth in Full Text Sources



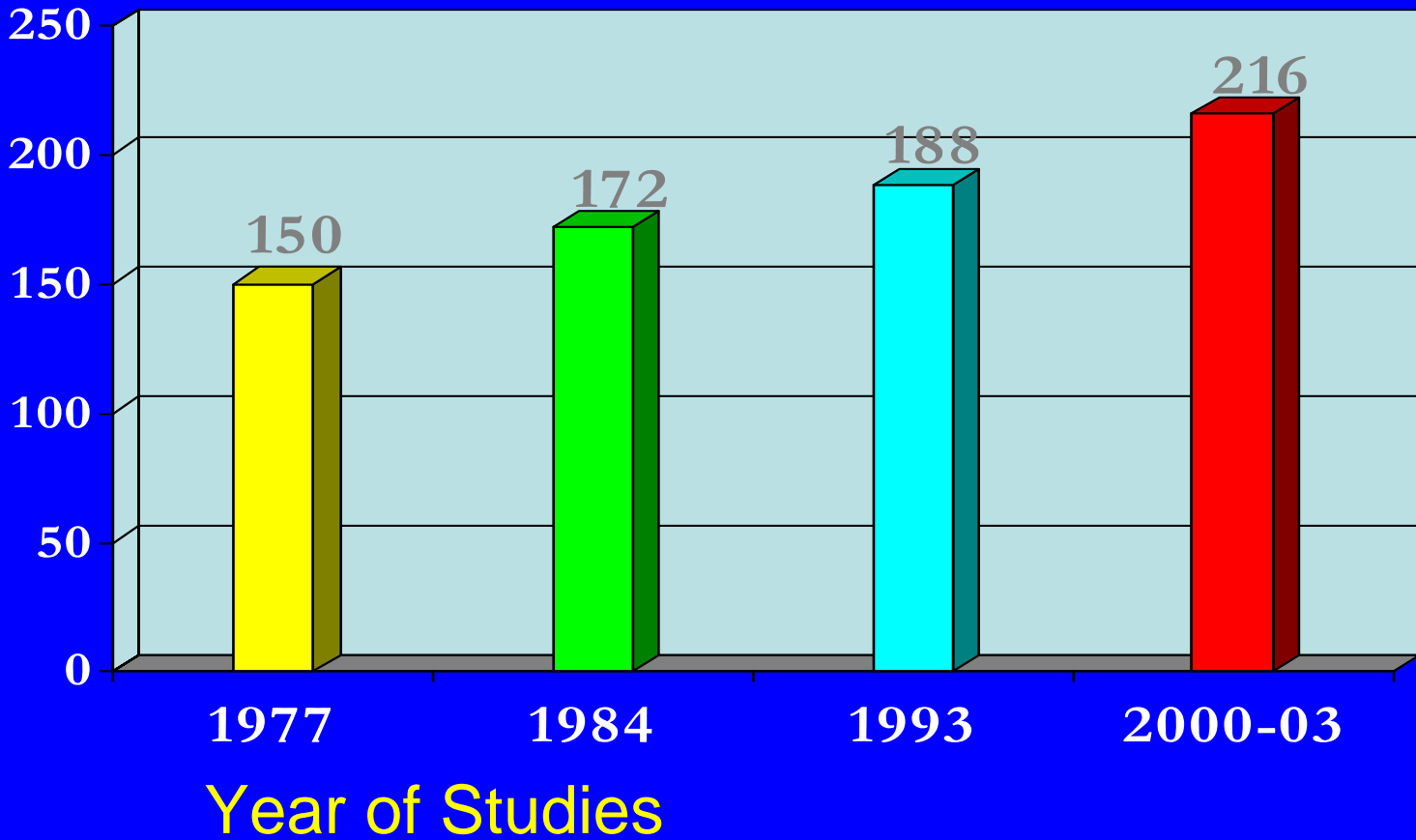
Fulltext Sources Online, July 2004. Edited by Mary B. Glose. Medford, NJ: Information Today, *twice yearly*

How Many Journals Are Online?

- Ulrich's 55% of all (~12,000)
- John Cox survey 75% of all
- John Cox survey 83% of STM
- DOAJ ~1600 open access

Average Articles Read per University Scientist

Average number of articles read per scientist



Reading Varies by Subject Discipline and Workplace

- Univ. medical
 - Practicing Pediatricians
 - Univ. Scientists
 - All Scientists
 - Soc Sci/Psych
 - Humanities
 - Engineers
- ~322 articles/year
 - ~180 articles/year
 - ~216 articles/year
 - ~130 articles/year
 - ~191 articles/year
 - ~120 articles/year
 - ~111 articles/year

Principal Purpose of Reading Scholarly Articles by Faculty and by Pediatricians

<u>Purposes</u>	<u>Fac</u>	<u>Ped</u>
Primary Research	32%	5%
Current Awareness	22%	50%
Teaching	18%	5%
Background/other	18%	6%
Writing Proposals	10%	2%
Consulting/diagnosis/treatment		32%

Value may vary from use

Purpose and Ranking of Importance: Faculty at a U.S. University

#2	Primary Research	32%
#3	Current Awareness	22%
#4	Background	18%
#5	Teaching	18%
#1	Writing	10%

Purpose and Ranking of Importance: Pediatricians

#2	Current Awareness	50%
#1	Consulting/treating	32%
#4	Other	6%
#3	Teaching	5%
#5	Research	5%
#6	Writing proposals	2%

Value doesn't necessarily equal frequency

- 1/2 to 2/3 of readings are in the first year of publication, but older articles are rated as having higher value to purpose
- Ave. time spent on an article by medical faculty is low (20 minutes) and most reading is for current awareness, but the few read for research take more time and are rated much more highly

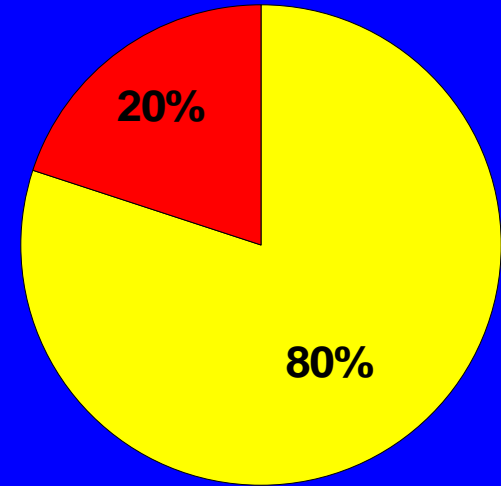
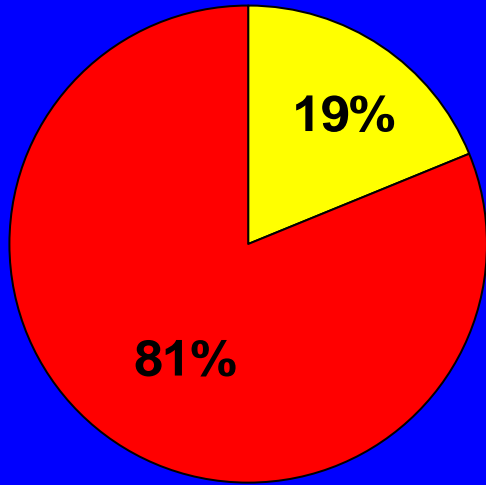
Subject Experts Want

- More sources
- More backfiles
- Sources continue to be available
- High Quality
- Speedy access
- No barriers to access
- Convenience (getting their work done)

“Convenience drives usage of e-journals...and it is a relative term among scholars.”

Stanford e-Just

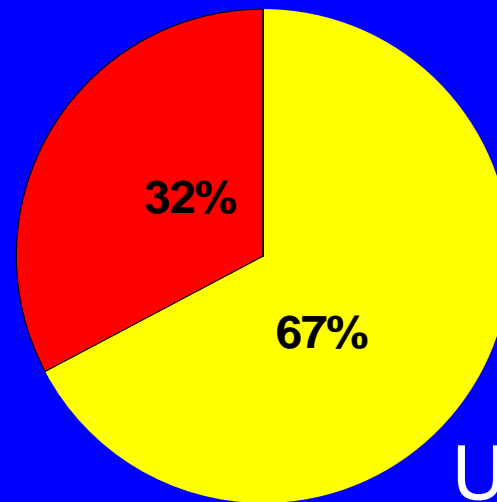
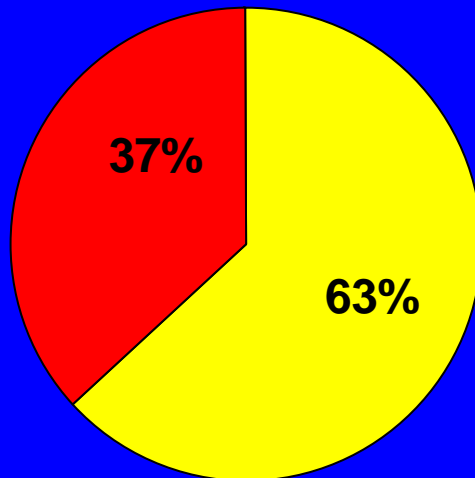
Print or Electronic



■ Electronic
■ Print

Pediatricians

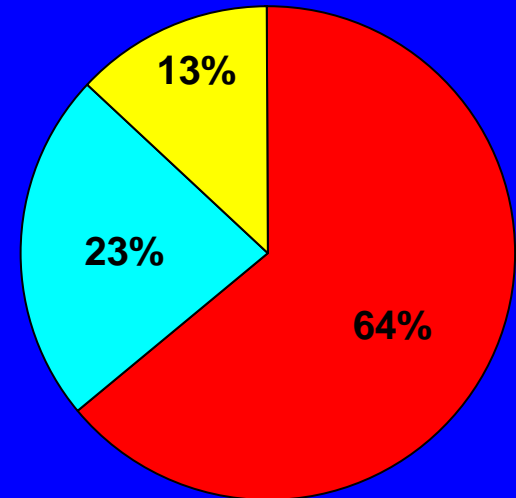
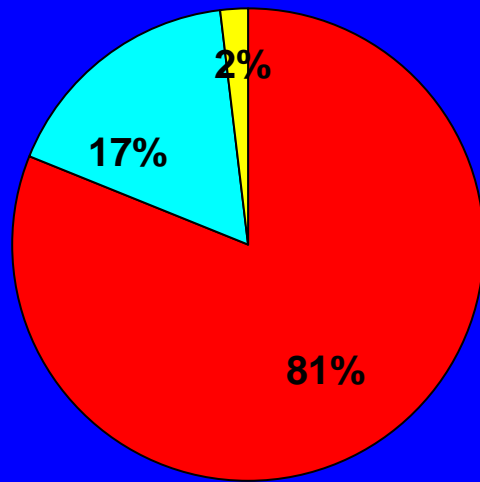
Astronomers



Univ Scientists

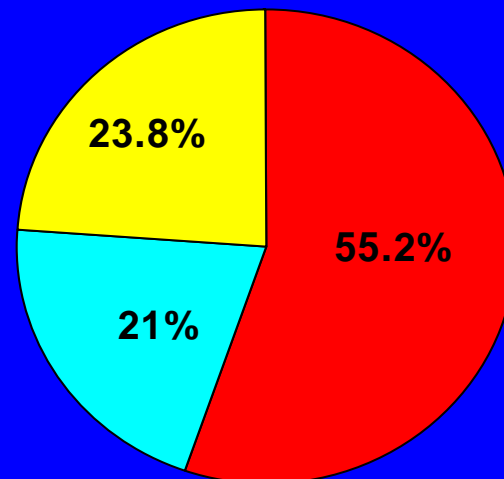
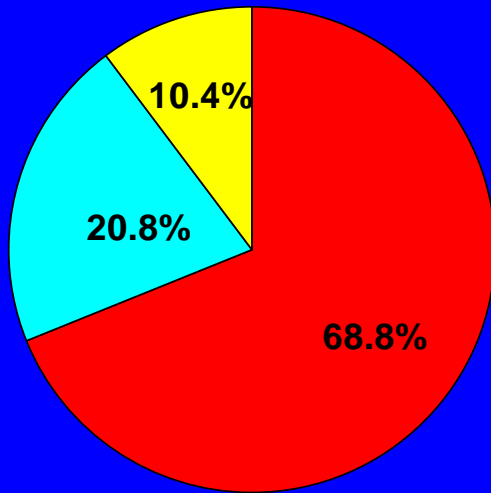
UNSW

Year of Articles



Pediatricians

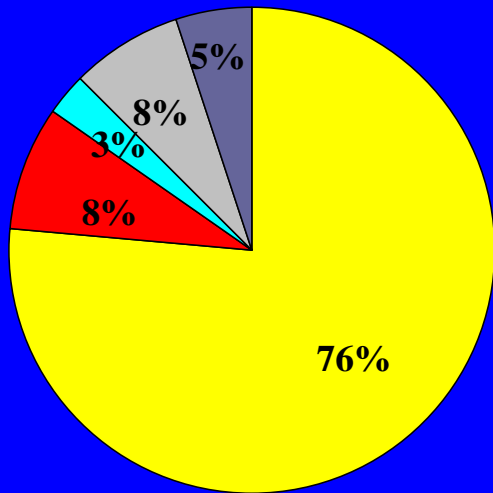
Astronomers



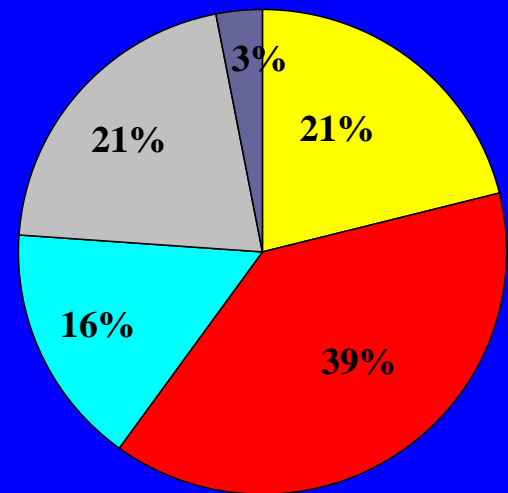
Univ Scientists

UNSW

Method of Article Discovery

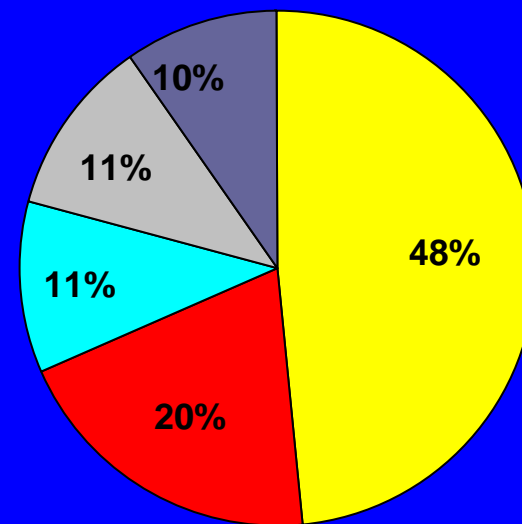
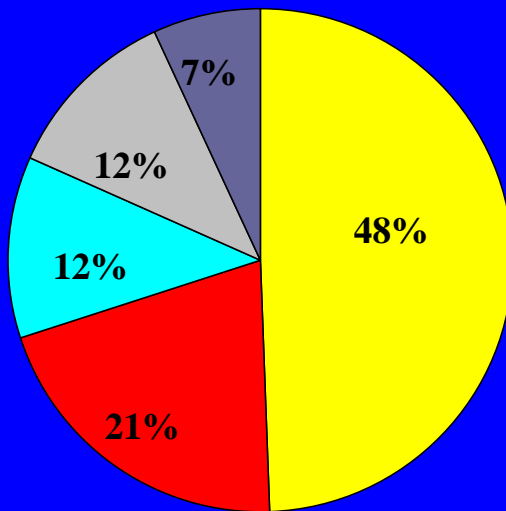


- Browsing
- Online Searching
- Cited in Other Pub.
- Another Person
- Other



Pediatricians

Astronomers



Univ. Scientists

UNSW

Browsing

- Core titles
- Current issues
- Background
- Current awareness

Searching

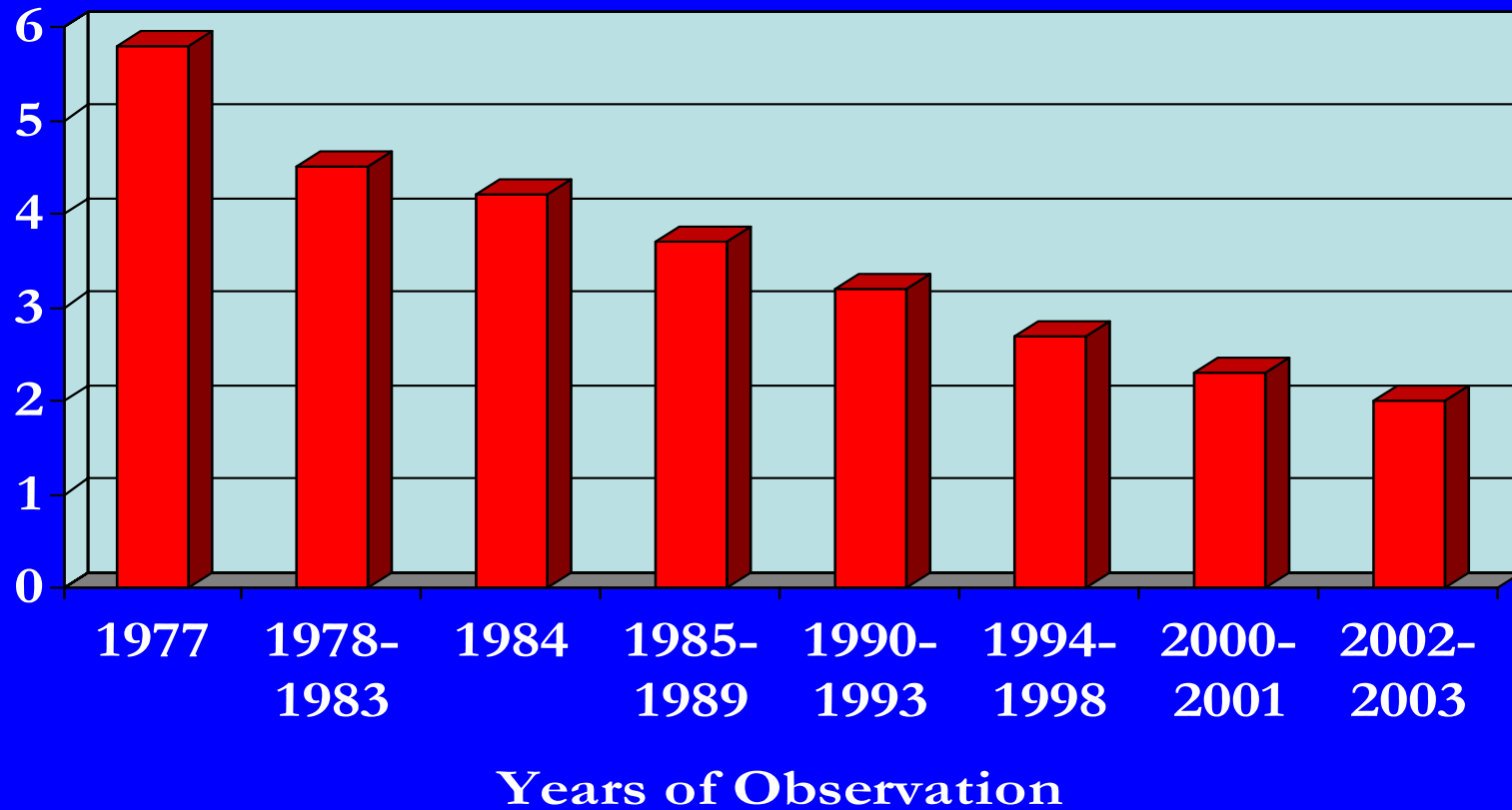
- New topics
- Old articles
- Primary research
- For writing

Convenience Varies...

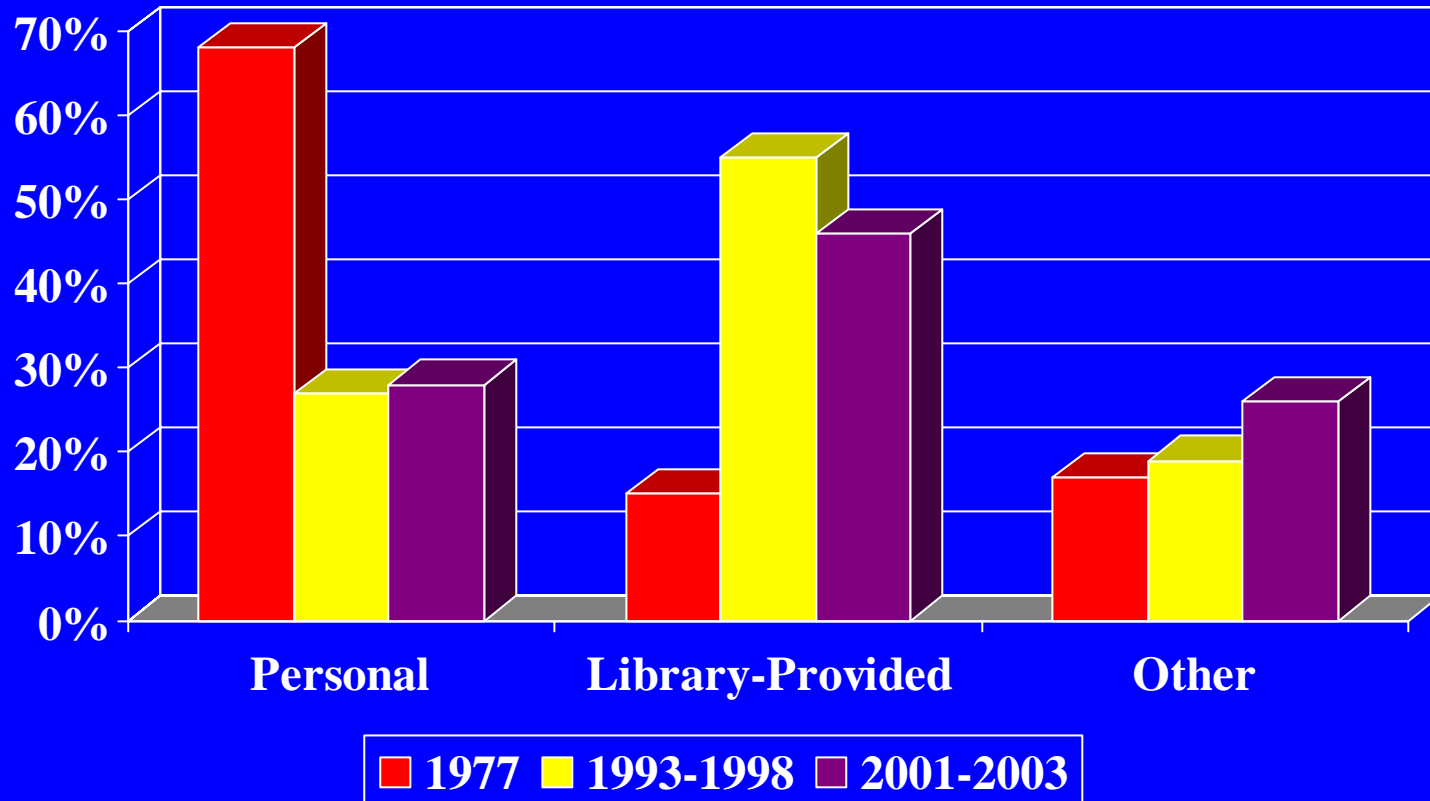
- Astronomers prefer desktop e-access
- Pediatricians prefer print on the run for journals, PDAs for drug info
- Researchers sometimes want links to full data, medical practitioners want summarized information

What has changed in use and value of
scholarly publications?

Average Number of Personal Subscriptions to Scholarly Journals



Proportion of Readings of Scholarly Scientific Articles



Other Electronic articles include:

Search | Back Issues | Author Index | Title Index | Mirrors

D-Lib Magazine

ISS Vol. 7 No. 5

EDITORIAL
Internet Privacy: An Oxymoron?
 by Bonita Wilson

To the Editor: Letters

From Michael L. Nelson, NASA Langley Research Center

From Kenneth Frazier, University of Wisconsin



ARTICLES
Representing Value as Digital Objects: A Discussion of Transferability and Anonymity
 Robert E. Kahn, Corporation for National Research

Photograph of the inside view of

Document Frame - Microsoft Internet Explorer provided by University of Tennessee, Knoxville

File Edit View Favorites Tools Help

Address http://proquest.umi.com/pqdweb?did=00000080622598&fmt=6&deli=1&Mtd=1&ldx=9&sid=1&FQT=309&Q=1&E=x.pdf

ProQuest

Search: Web Shopping Dictionary Encyclopedia Stocks

Searching collection: All Collections

Article 9 of 50

Mark article Article format: Page Image

Page Control

125K 1 125K

POLICY TRENDS

E-signatures battle 'fear factor'

Culture of 'ink' slows adoption of digital John Hancocks at federal agencies

BY WILLIAM MATTHEWS

It has been thought by at least 30 government divisions in the United States. The Army, the U.S. Mint, the Kansas Department of Transportation and the District attorney for Stanislaus County, Calif., are among those now using approvals and electronically signed documents to be completed online with confidence that parties to the deal would be legally bound. So far, however, the reactor has been mere subdued.

Part of the problem is that no single type of e-signature has emerged as the standard, said Art Schwartz, a policy and regulations, he said.

When CIPA and later the E-Sign Act were signed, they were hailed as clearing the way for multimillion-dollar transactions to be completed online with confidence that parties to the deal would be legally bound. So far, however, the reactor has been mere subdued.

Part of the problem is that no single type of e-signature has emerged as the standard, said Art Schwartz, a policy

Page 1 of 1 100% 7.94 x 10.86 in

7:57 AM

arXiv.org e-Print archive

Automated e-print archives Search

13 Dec 2001: Cumulative "What's New" pages. Note main site relocation.
 Robots Beware: [indiscriminate automated downloads from this site are not permitted.](#)

Physics

- [Astrophysics](#) ([astro-ph new](#), [recent](#), [abs](#), [find](#))
- [Condensed Matter](#) ([cond-mat new](#), [recent](#), [abs](#), [find](#))
 includes: [Disordered Systems and Neural Networks](#); [Materials Science](#); [Mesoscopic Systems and Quantum Hall Effect](#); [Soft Condensed Matter](#); [Statistical Mechanics](#); [Strongly Correlated Electrons](#); [Superconductivity](#)
- [General Relativity and Quantum Cosmology](#) ([gr-qc new](#), [recent](#), [abs](#), [find](#))
- [High Energy Physics - Experiment](#) ([hep-ex new](#), [recent](#), [abs](#), [find](#))
- [High Energy Physics - Lattice](#) ([hep-lat new](#), [recent](#), [abs](#), [find](#))
- [High Energy Physics - Phenomenology](#) ([hep-ph new](#), [recent](#), [abs](#), [find](#))
- [High Energy Physics - Theory](#) ([hep-th new](#), [recent](#), [abs](#), [find](#))
- [Mathematical Physics](#) ([math-ph new](#), [recent](#), [abs](#), [find](#))
- [Nuclear Experiment](#) ([nucl-ex new](#), [recent](#), [abs](#), [find](#))
- [Nuclear Theory](#) ([nucl-th new](#), [recent](#), [abs](#), [find](#))
- [Physics](#) ([physics new](#), [recent](#), [abs](#), [find](#))
 includes (see [detailed description](#)): [Accelerator Physics](#); [Atmospheric and Oceanic Physics](#); [Atomic Physics](#); [Atomic and Molecular Clusters](#); [Biological Physics](#); [Chemical Physics](#); [Classical Physics](#); [Computational Physics](#); [Data Analysis, Statistics and Probability](#); [Fluid Dynamics](#); [General Physics](#); [Geophysics](#); [History of Physics](#); [Instrumentation and Detectors](#); [Medical Physics](#); [Optics](#); [Physics Education](#); [Physics and Society](#); [Plasma Physics](#); [Popular Physics](#); [Space Physics](#)
- [Quantum Physics](#) ([quant-ph new](#), [recent](#), [abs](#), [find](#))

Mathematics

MAIN INSTRUCTION BIO & VITA RESEARCH PUBLICATIONS

Dr. Carol Tenopir

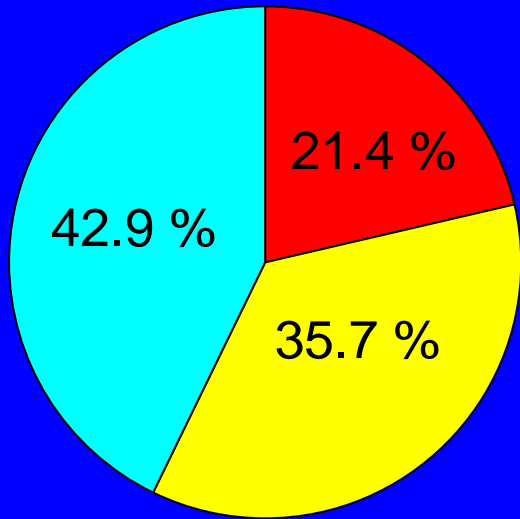
Professor of Information Sciences

- Research on Electronic Journals
- NSF NSDL Research Project
- Selected E-Print Articles
- Biography and Vita

The School of Information Sciences
 1345 Circle Park Drive, Room 451
 University of Tennessee | Knoxville, TN 37996-0341
 (865) 974-7911 | ctenopir@utk.edu



Sources of Readings

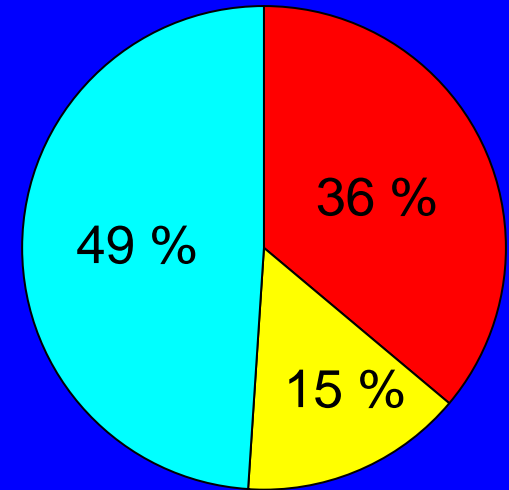


■ Separate

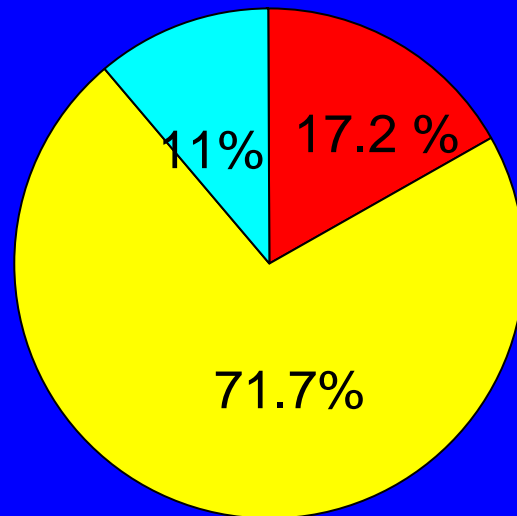
■ Personal

■ Library

Universities

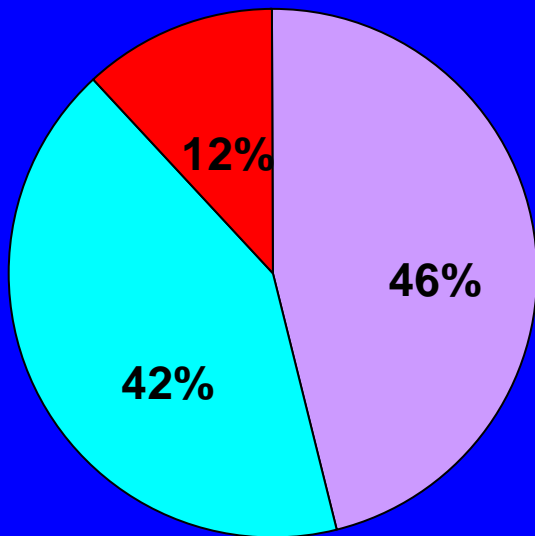


Astronomers



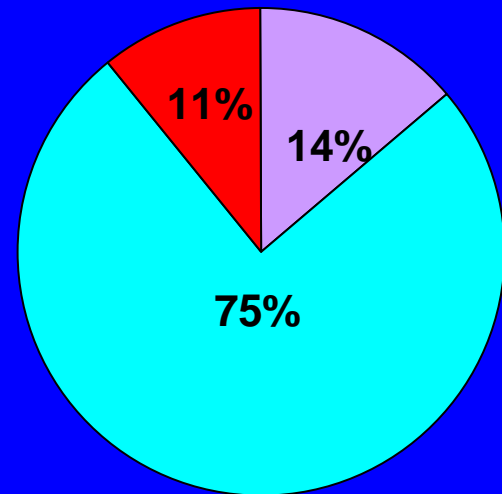
Pediatricians

Source of Articles Read at Drexel University



Faculty

- Personal Subscriptions
- Library Provided
- Separate Copies



Doctoral Students

Older Readings on Average are Judged to be More Valuable

Source of Article	1 st Year	2-5 Years	Over 5 Years
Library	33.5	53.2	73.3
Personal	56.3	28.8	9.2
Separate	10.3	18.1	17.5
Total	100.1	100.1	100.0

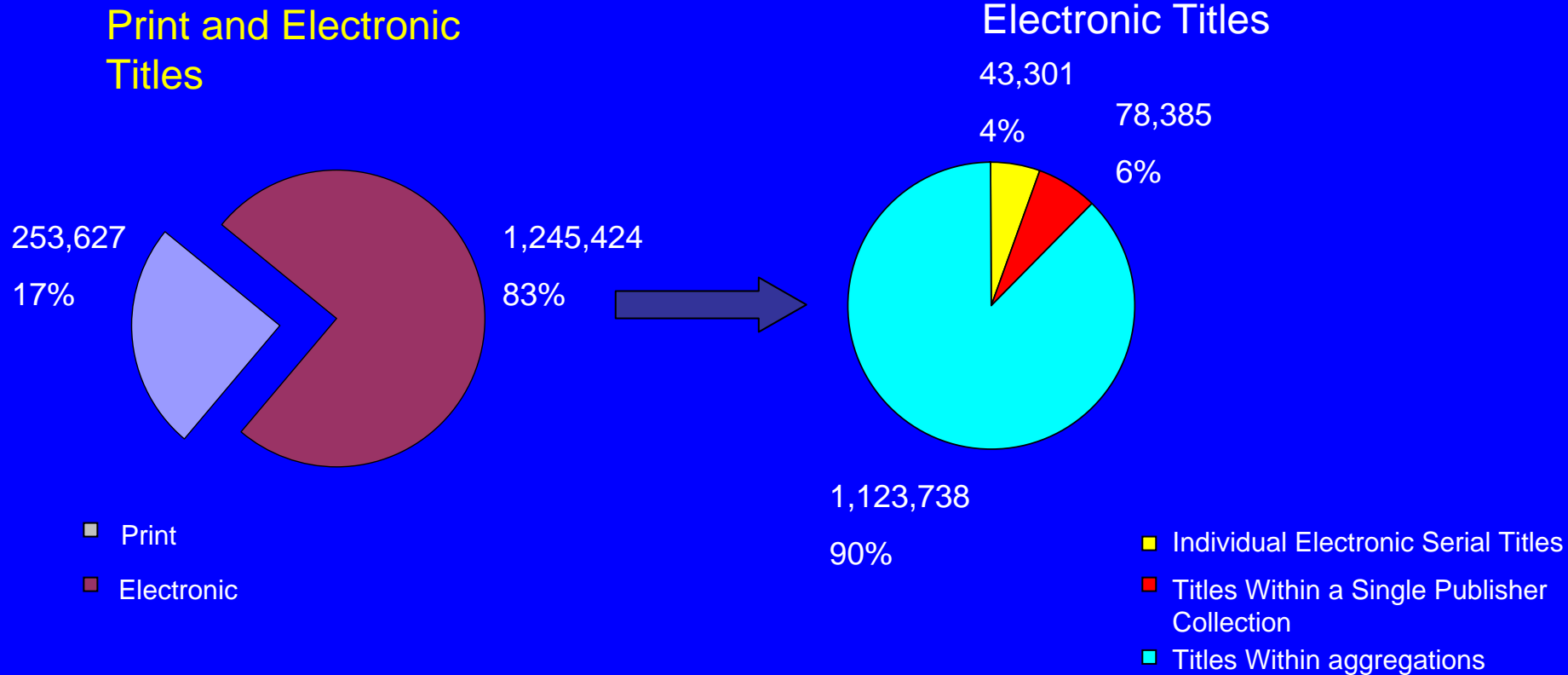
Sample Size: Total = 397, Scientists = 300, Non-Scientists = 97

Source: University of Tennessee (2000), Drexel University (2002),
University of Pittsburgh (2003)

More changes observed in use and some related questions

- Increase in search
- Increase in number of sources used (at least one article from over 23 journal titles and more formats)
- Since library use has increased, do library choices drive usage patterns or vice-versa?
- How will Google Scholar influence these trends?

Print & Electronic Serial Titles in Australian and New Zealand Academic Libraries



All readers need to have:

- Confidence in quality of information (judged by journal title, authors, author affiliation, source, other)
- Ability to find similar materials (search and browse)
- Confidence in longevity of source
- Convenient and timely access

“Convenience trumps quality every time....
It is the job of librarians [and publishers] to
make quality convenient.”

Stewart Bodner, Associate
Chief Librarian, NY Public