

# THE VALUE OF AND ROI IN SPECIAL LIBRARIES

**Donald W. King**

**Honorary University Professor**

**Bryant University**

**Adjunct Professor**

**University of Tennessee**

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# TOPICS COVERED IN PRESENTATION

- Sources data and information
- A framework of library evaluation metrics
- Value and ROI of academic library collections as an example
- Description of a comprehensive assessment of a special library value and ROI
- Differences in special, academic and public library assessment of value and ROI

# SOURCES OF DATA AND INFORMATION

- Value and ROI studies of special libraries from the 1980s through the 1990s (King Research, Inc.)
- Public library value and ROI done nationally and in two statewide studies since 2000 (University of North Carolina)
- Academic library value and ROI done since 2000 (University of Tennessee, University of Pittsburgh and planned at Bryant University and elsewhere)
- Value and ROI of other organizations: OSTI (Energy DataBase), Defense Document Center (DDC), U.S. Census, General Electric (EMPIS), Records Management ASSIN, IRS, and others

# SPECIAL LIBRARY VALUE AND ROI STUDIES

- Air products and chemicals (4 libraries)
- Alabama Power Company (2 libraries)
- American Institute of Architects
- AT&T Bell Labs (19 libraries)
- Bristol-Myers Squibb (5 libraries)
- Colgate-Palmolive Company
- DuPont 19 (libraries)
- Eastman Chemicals Company (6 libraries)
- Eastman Kodak Company (12 libraries)
- FBI Academy

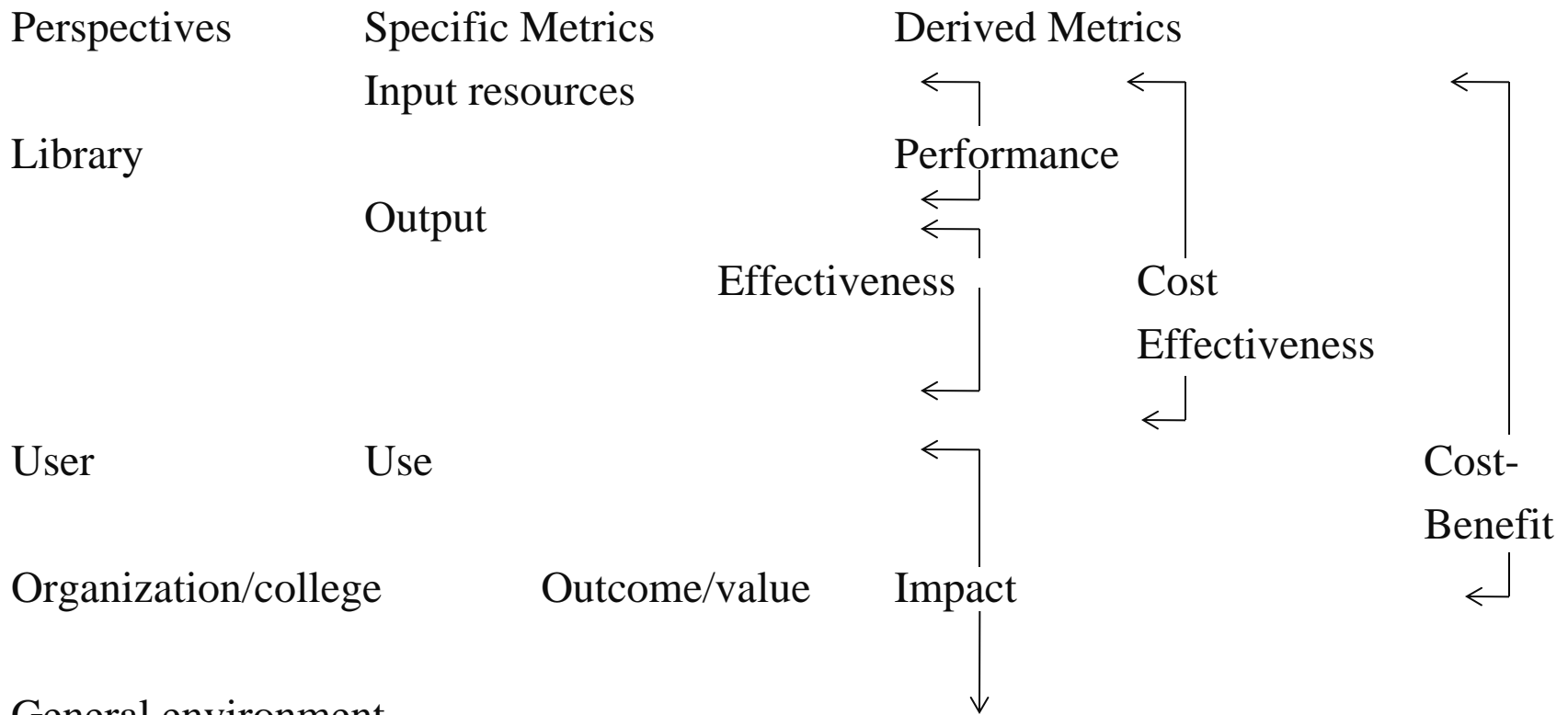
# SPECIAL LIBRARY VALUE AND ROI STUDIES (cont.)

- Johnson & Johnson Orthopedics
- Johnson & Johnson Vistakor
- National Institutes of Health
- NOAA (14 libraries)
- National Electronic Cooperatives Association
- Oak Ridge National Laboratory (2 libraries)
- Proctor & Gamble (6 libraries)
- Public Service Electric & Gas Company (2 libraries)
- Public Service of North Carolina Energy (6 libraries)
- Rockwell International (2 libraries)
- Rocky Flats (2 libraries)

# SPECIAL LIBRARY VALUE AND ROI STUDIES (cont.)

- U.S. Department of Justice (9 libraries)
- U.S. Department of Labor (2 libraries)
- U.S. Department of Transportation (5 libraries)
- Volpe National Transportation Center
- Two that declined to name
- *Special Libraries Increasing the Information Edge*. SLA Griffiths and King 1993

# EVALUATION PERSPECTIVES AND DERIVED METRICS





# VALUE AND ROI OF ACADEMIC LIBRARY COLLECTIONS

As an example





# Data Collection Methods

- Surveys of users of potential users to establish value
- In-depth cost analysis of library resources

# Survey Methods

- IMLS sponsored surveys of five US university faculty and students
- Faculty surveyed by a web-based method ( $n = 1,307$ )
- Students surveyed by asking sampled faculty to distribute a questionnaire and also web-based (not covered here)
- Some topics covered
  - Number of articles read in past month
  - Critical incident of last reading
  - How initially found out about article (time spent)
  - Source of article read (time spent)
  - Purpose of reading
  - Format of article
  - Outcome from reading

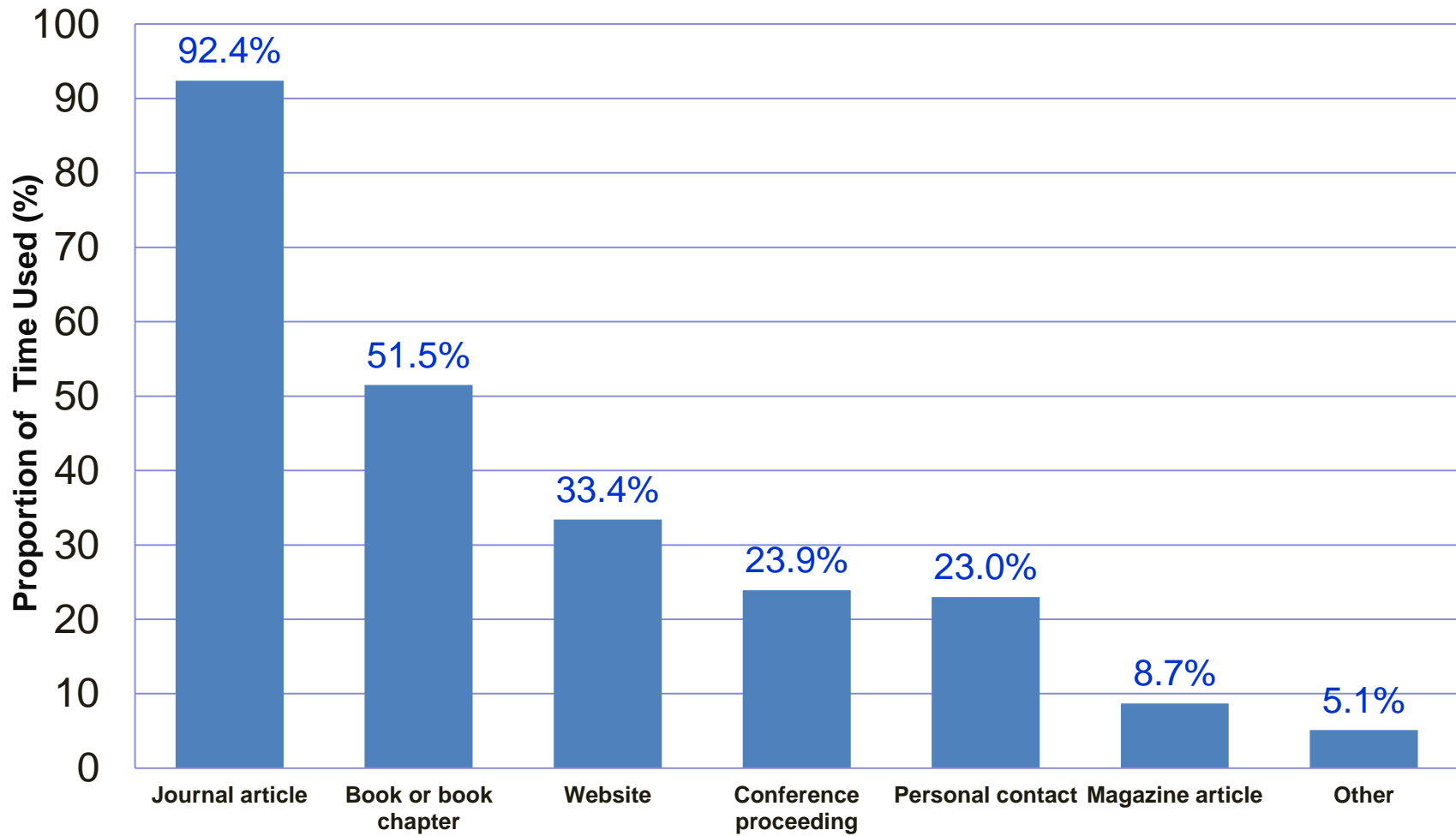
# In-depth Cost Study

- Conducted at the University of Pittsburgh
- Also done at ten other universities (Ithaca-Schonfeld, et al.)
- Examined cost of five journal collection services:
  - Access to the electronic collection
  - Access to the current periodicals collection
  - Access to the in-library shelved collection
  - Access to the off-site collection
  - Interlibrary lending and borrowing
- Allocated resources to 67 activities: staff, space, shelving, workstations, systems, equipment, etc.

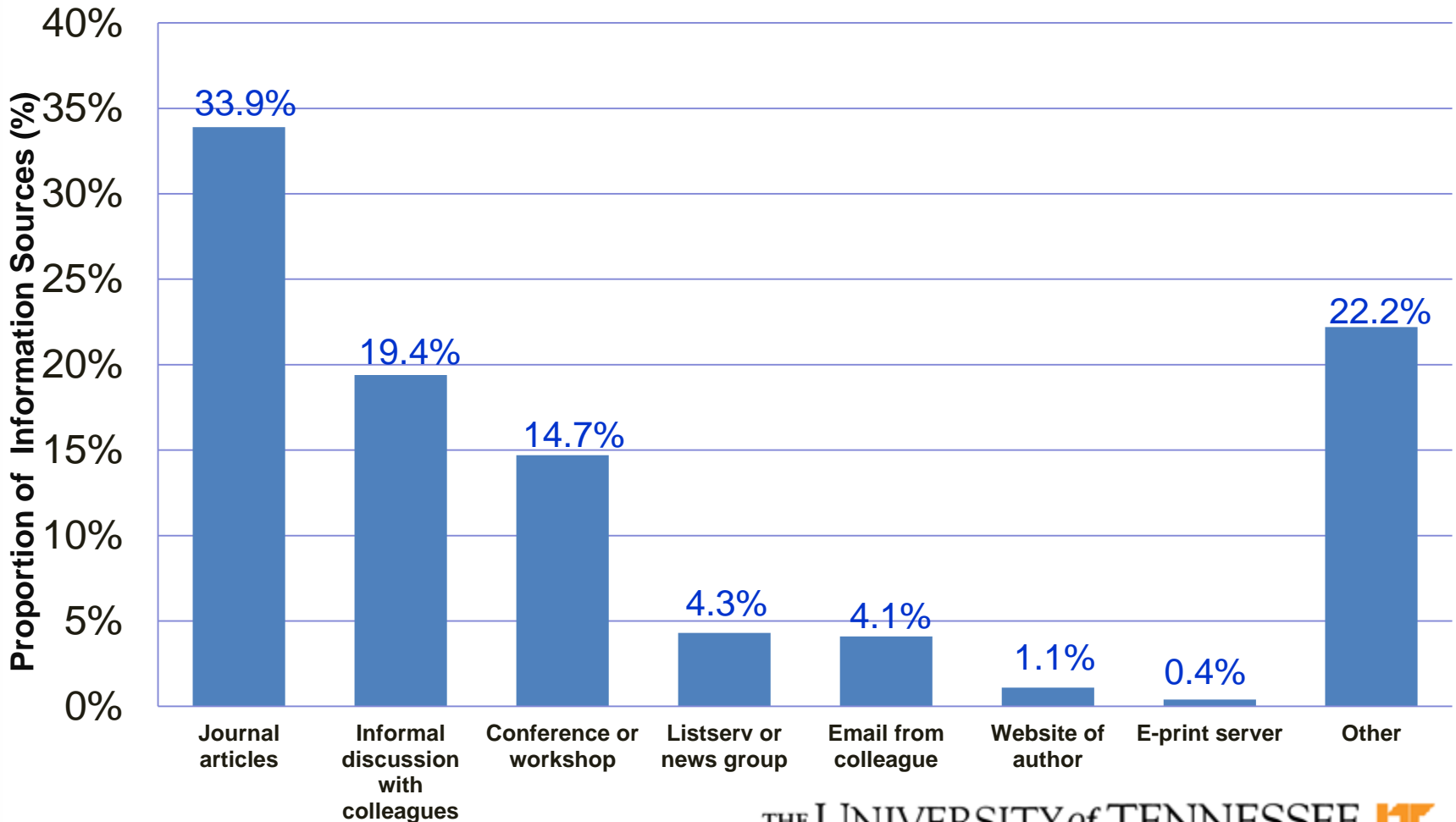
# Contexts For Assessing Academic Journal Collections

- What sources did you use for the last substantive piece of information you used for work?
- Prior to your first reading of this article, did you know the information reported or discussed in this article?
- If yes, how did you first find out about the information?
- From what source did you read this article?

# Information sources used

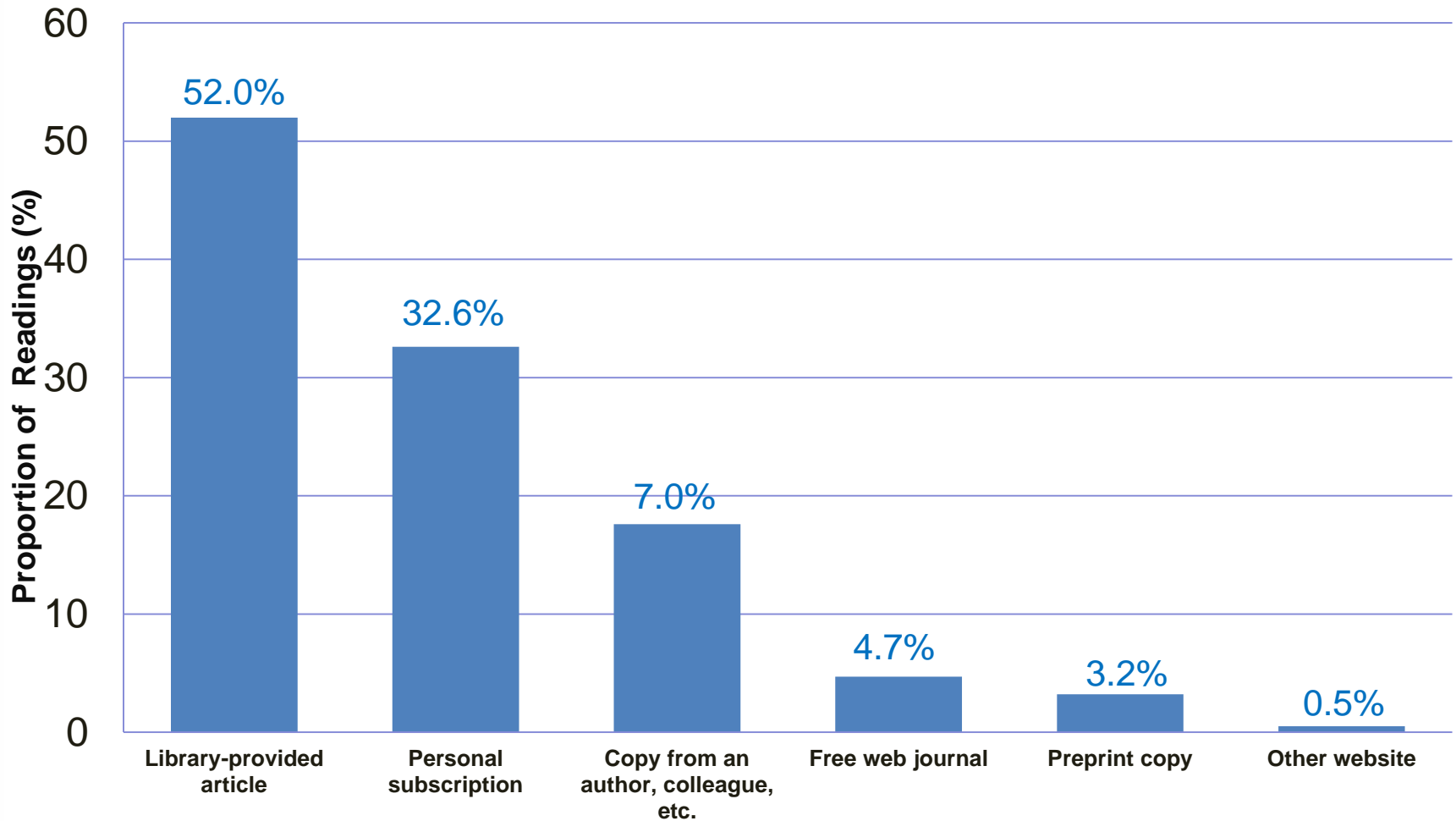


# How faculty first became aware of information found in articles





# Where articles are obtained



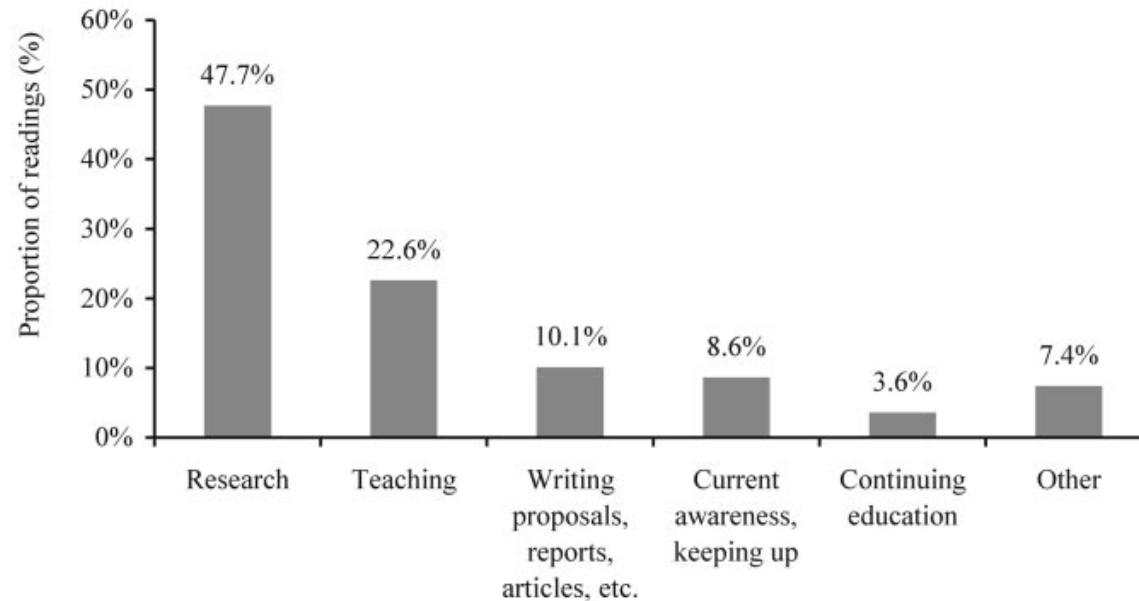


# The Path To The Outcomes Or Value From Using The Library Journal Collections

- Purposes or reasons for reading articles (e.g., research, teaching, current awareness)  
↓
  - Information seeking behavior (e.g, identifying articles, obtaining them, choosing the format)  
↓
  - Article use (e.g., how much reading, time spent reading, age of articles read)  
↓
  - Outcomes/value of reading (e.g., inspire new thinking/ideas, increased productivity, achievers read more, contingent valuation)  
↓
- Return component of ROI



## Principal purpose of reading the last article ( $n = 1,062$ )

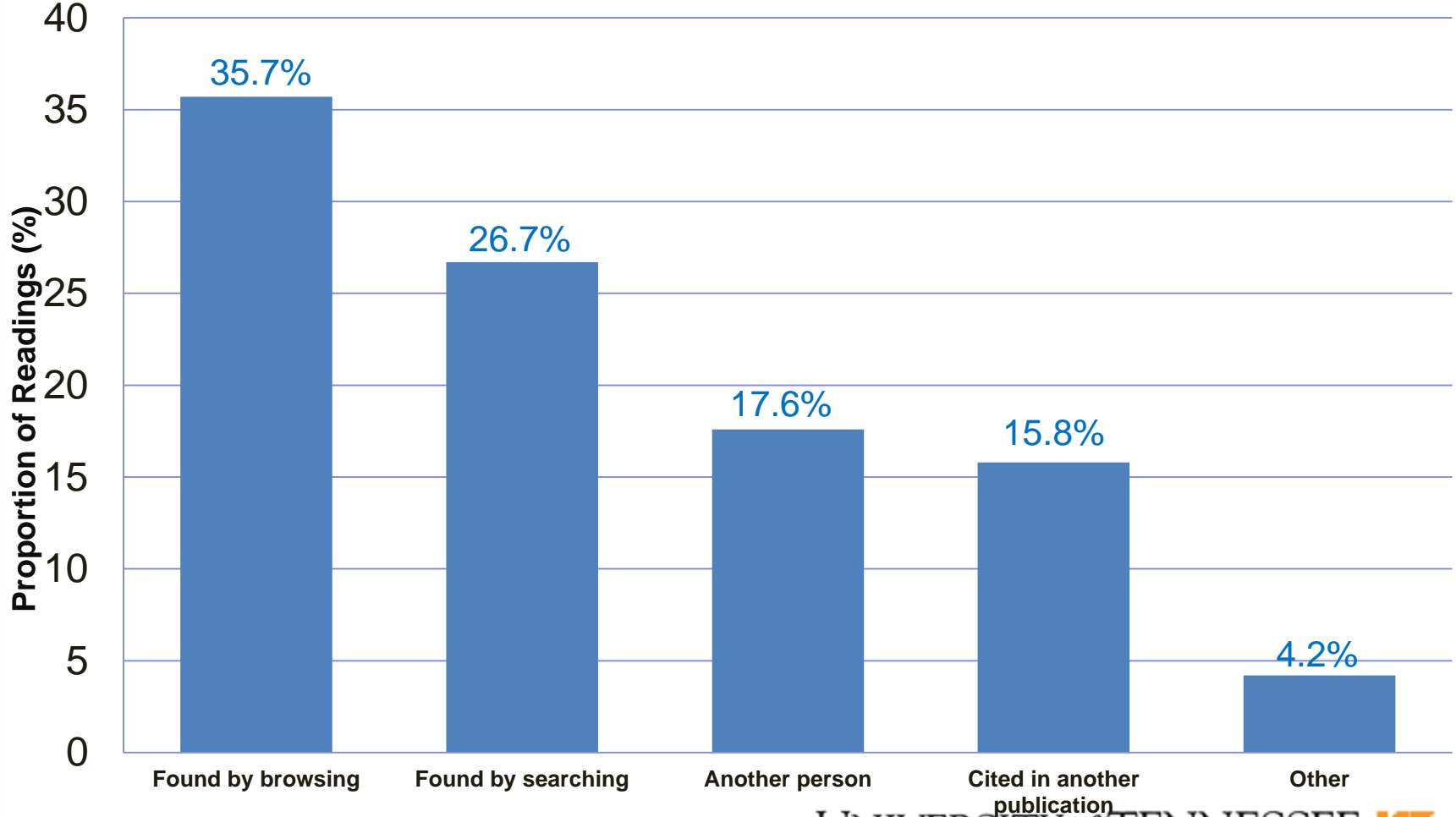




# Researcher information seeking behavior involves...

- Choosing from among information sources
- Establishing ways in which journal information is identified
- Choosing online search sources
- Determining where to obtain articles
- Choosing a format of articles read

# Ways in which journal information is identified





# Format of articles read

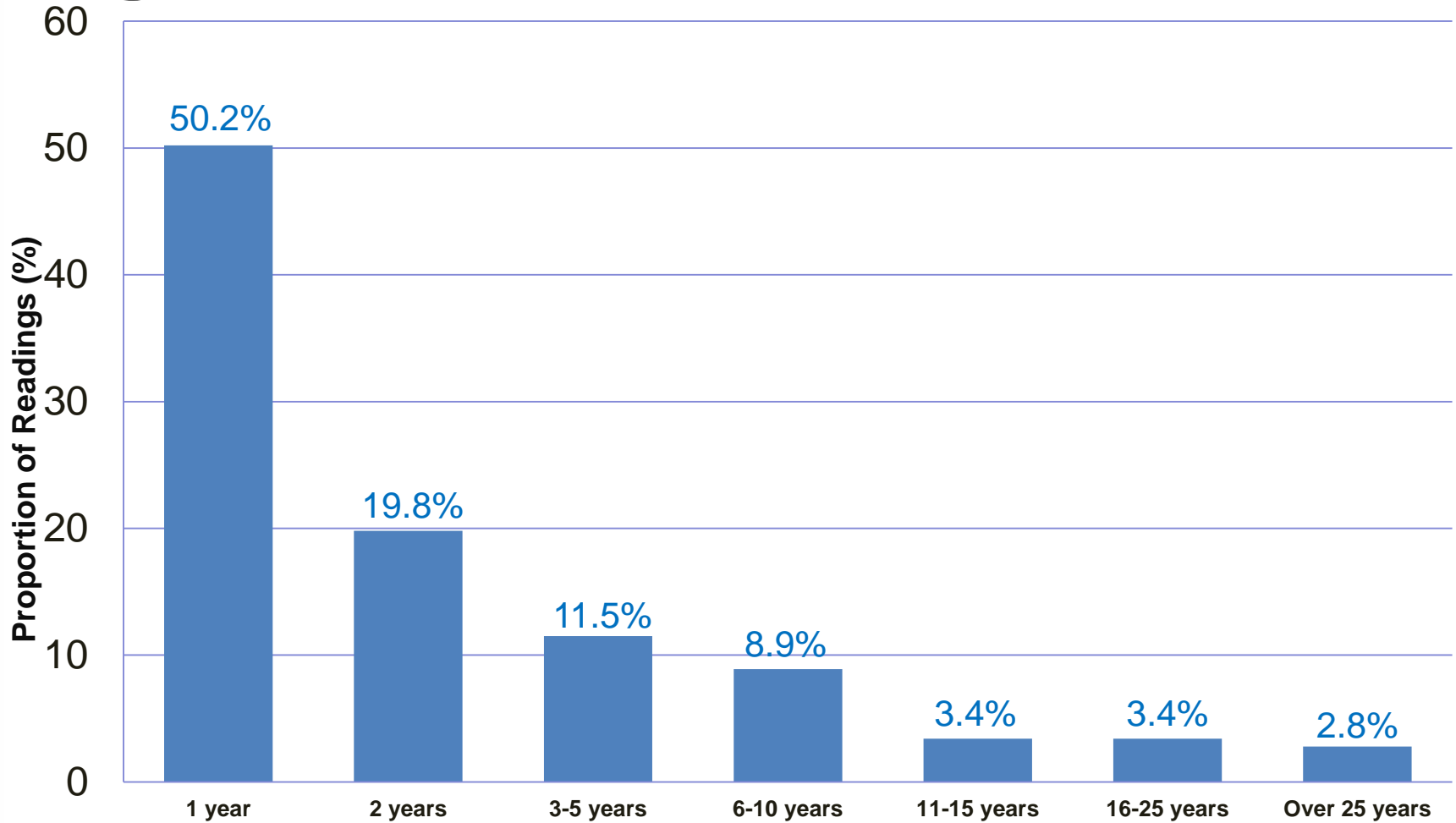
Electronic (54%)    Print (46%)

Personal subscription	9%	91%
Library	70%	30%
Other	95%	5%

# Aspects of Article Use

- Amount of reading: 240 annual readings per faculty
- Time spent reading: 132 hours per faculty
- Age of articles read: 4.1 years old
- Leads to outcomes of reading/value

# Age of articles read



# Two types of value of articles

- Purchase value: what researchers are willing to pay for article content in their time and/or money
- Use value: the favorable outcomes derived from use of article content

# Purchase value

- Average time spent per reading
  - 6.9 minutes per reading spent browsing
  - 5.3 minutes per reading spent searching
  - 33.1 minutes per reading
- Average about 148 hours per year
  - 10 hours spent browsing
  - 6 hours spent searching
  - 132 hours spent reading
- Unknown dollars spent on subscriptions, etc



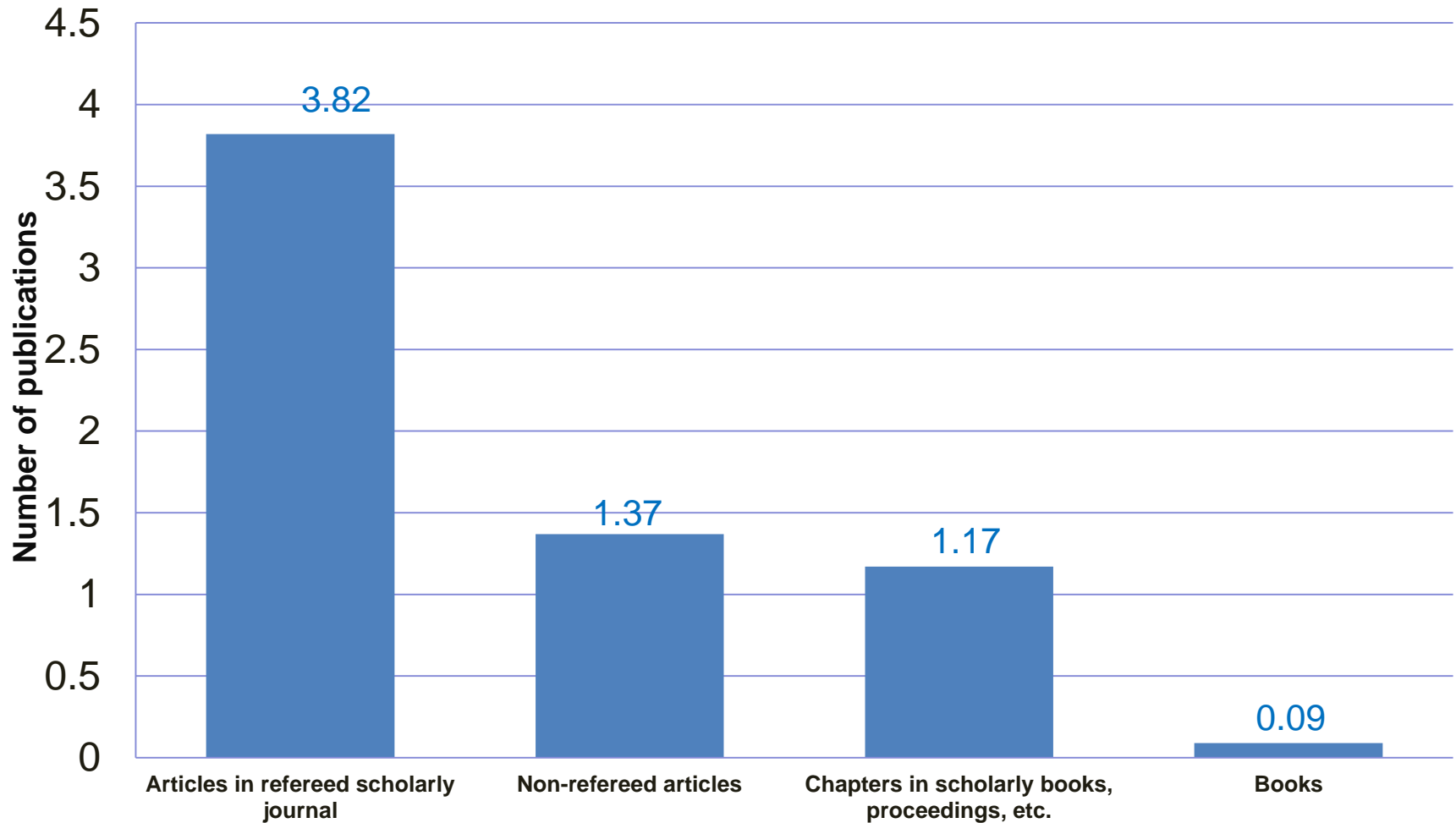
# Use value of reading

(Faculty in US, n=880)

Inspired new thinking/ideas	(55%)
Improved results	(40%)
Changed focus	(27%)
Resolved technical problems	(12%)
Saved time	(12%)
Faster completion	( 7% )
Collaboration	( 6% )
Wasted my time	(<1%)



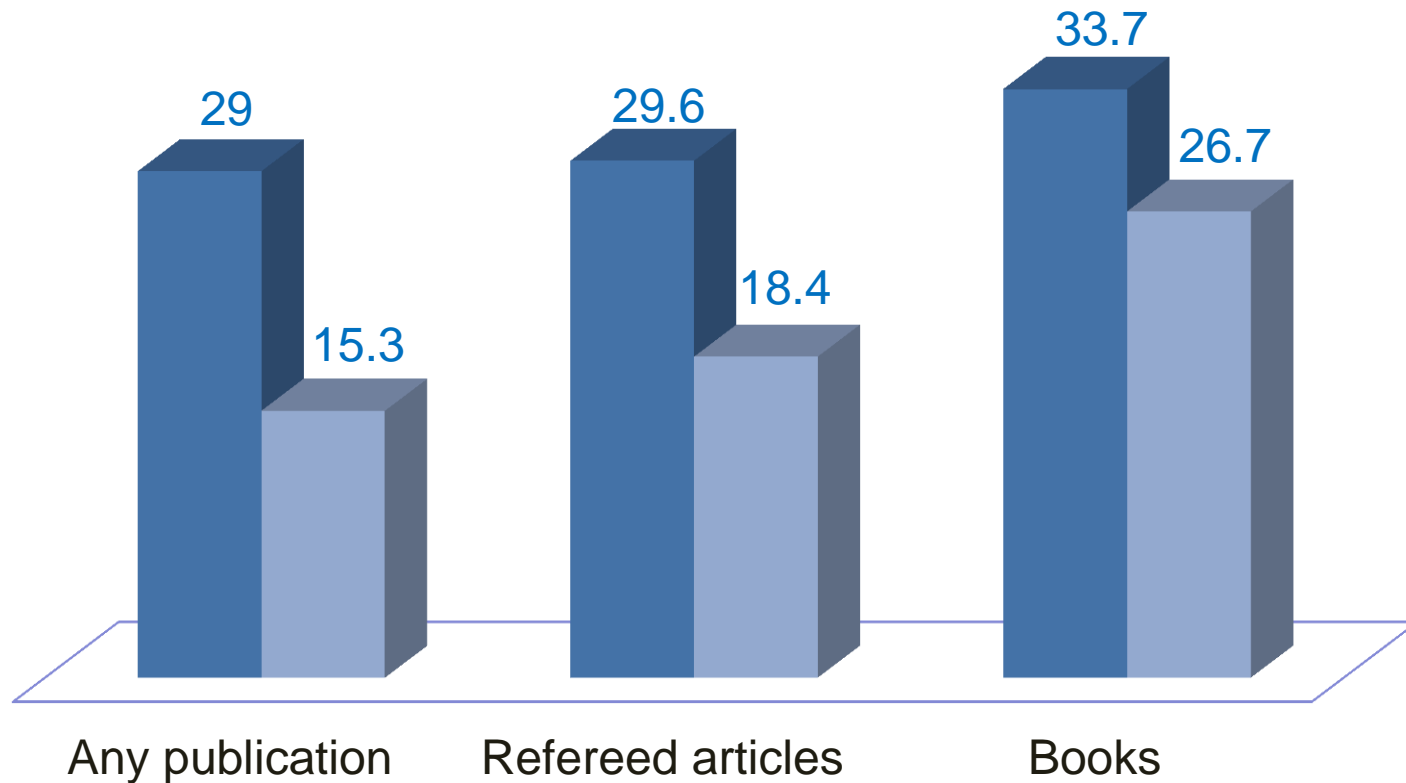
# Indicator of faculty productivity





# Faculty who publish more tend to read more per month (i.e., be more productive)

■ Publication author    ■ Non-publication author





# Achievers read more

- Number of readings: achievers (276 readings), non-achievers (222 readings)
- Hours spent reading: achievers (159 hours), non-achievers (119 hours)
- Time per reading: achievers (35 minutes), non-achievers (32 minutes)



# Contingent Valuation

- Contingent valuation is an economic method used to assess the benefits of non-priced goods and services, by examining the implications of not having that product or service
- In this case the service is access to the library journal collection

# Contingent Valuation Question

- Thinking back to the source of the last read article [here only library-provided articles], where would you obtain the information if that source [library collection] were not available?

(a) I would not bother getting the information.

(b) I would obtain the information from another source.

Please specify the source \_\_\_\_\_

- If (b) is checked:

In order to obtain the same information, if this source were not available, I would expect to spend \_\_\_\_\_ minutes of my time and/or \$ \_\_\_\_\_. (If the answer is zero, please enter “0” instead of leaving blank

# Survey Results (University of Pittsburgh)

- 125 readings from library-provided articles
- Faculty indicated that they would look for another source for 99 of these readings
- They spend 3.0 hours per year searching, 3.4 hours browsing, and 6.4 hours in obtaining useful citations as well as, photocopying, downloading and printing articles (12.8 hours total)

## Survey Results (University of Pittsburgh) (cont.)

- At an average of \$55 per hour in salaries and benefits, etc. the current cost to faculty is \$704 and it costs the university about \$65 per faculty in photocopying, downloading and printing (\$769 total)
- The cost of obtaining alternative sources of information is 59 hours in time (\$3,245) and \$990 in subscriptions, travel, communications, etc
- The net benefit is \$2,541 in time and \$925 in other costs or \$3,466 per faculty member



# Return-on-Investment in Library Journal Collections

- Return:
  - Favorable outcomes
  - Saves faculty \$3,466 annually per faculty
- Investment:
  - \$283 per faculty cost to the library
  - \$704 per faculty in obtaining articles
  - \$65 in other university costs
  - \$1,052 per faculty total
- Return-on-Investment:
  - $\$3,466 \div \$1,052$
  - 3.3 to one



# Advantage of the Critical Incident Method

- Typical question
  - Rate your satisfaction with online searches
  - Problem is that each search is different and this gets lost
- Allows one to combine answers through cross-analysis:
  - Can establish age of articles read from library versus personal subscription that are read for research or to keep up
  - Can establish time spent reading for research versus teaching from library versus personal subscription (thus providing indicators of value for library-provided readings)

# Examples of Critical Incident of Library-Provided Articles

- Library-provided readings: 125
- Purpose of reading:
  - Research: 64.5%
  - Teaching: 47.2%
  - Current awareness: 37.8%
- Means of identification:
  - Browse: 37.6%
  - Search: 74.8%
  - Citation: 61.9%
- Time spent reading: 35.4 minutes vs. 30.4
- Age of articles read: 4.8 years vs. 3.0

# An Example of Critical Incident Detailed Cross-Classification

- Total annual readings per faculty: 240
- Readings for research: 47.7% or 114
- Readings for research found by searching: 29.7% of 114 or 34
- Readings for research found by searching and obtained from the library: 76.9% of 34 or 26

# Other Results of Readings for Research Found by Searching and obtained from the library

- Average age: 6.2 years vs. 4.0 for the rest
- Electronic format: 76.0% vs. 51.5%
- Time spent reading: 39.1 minutes vs. 32.4 minutes
- Use value examples:
  - Inspired new thinking: 59.3% vs. 54.7%
  - Improved result: 46.1% vs. 40.0%
  - Faster completion: 13.0% vs. 6.89
  - Contingent value: \$42 per reading vs. \$28
- ROI: 3.6 to one vs. 3.3 to one

# A COMPREHENSIVE ASSESSMENT OF VALUE AND ROI FOR SPECIAL LIBRARIES

- Surveys of professionals in the organization
  - Web-based survey
  - On-site survey of infrequently used services such as special collections, repositories, etc.
- In-depth cost analysis
- Establish value and ROI of relevant services and the entire special library
- Report results

# Scholarly Article Reading

- In the past month (30 days), approximately how many scholarly articles have you read? Articles can include those found in journal issues, Web sites, or separate copies such as preprints, reprints, and other electronic or paper copies. Reading is defined as going beyond the table of contents, title, and abstract to the body of the **article**.

Number of articles read (including skimmed) in the past month: \_\_\_\_\_ articles



# Scholarly Article Reading (cont.)

- The following questions in this section refer to the **SCHOLARLY ARTICLE YOU READ MOST RECENTLY**, even if you had read the article previously. Note that this last reading may not be typical, but will help us establish the range of patterns in reading.
- What is the title of the journal from which this last article was read or, if not from a journal, what is the topic of the article?

Journal Title \_\_\_\_\_

or

General Topic of Article \_\_\_\_\_



## Scholarly Article Reading (cont.)

- How did you become aware of this last article you read?
  - a. Found by browsing without a specific objective in mind, for example starting with a Journal name, Journal issue, table of contents, website, or other source of articles
    - Approximately how much time did you spend browsing when this article was found? \_\_\_\_\_ minutes (enter “0” if none)
    - As a result, how many articles did you read or plan to read? \_\_\_\_\_ articles (enter “0” if none)
  - b. Found while I (or someone on my behalf) was searching by subject, author’s name, etc. from a web search engine, online or print index, online journal collection, etc.



## Scholarly Article Reading (cont.)

- Approximately how much time did you (or someone on your behalf) spend searching? \_\_\_\_\_ minutes (enter “0” if none)
- As a result, how many other articles did you read or plan to read? \_\_\_\_\_ articles (enter “0” if none)
  - c. Cited in another publication
  - d. Another person told me about it
  - e. Don’t know or don’t remember
  - f. Other (please specify) \_\_\_\_\_



## Scholarly Article Reading (cont.)

- After you became aware of this article, from where did you obtain it? (Choose only the one best answer.)
  - a. Personal subscription:  Print  Electronic (Skip to Q14)
  - b. Library subscription:  Print  Electronic
  - c. School, department, etc. subscription:  Print  Electronic
  - d. Interlibrary loan:  Print  Electronic
  - e. Document delivery service:  Print  Electronic



## Scholarly Article Reading (cont.)

- f. Free Web journal (Skip to Q14)
- g. Preprint copy of the article: Print Electronic (Skip to Q14)
- h. Copy of the article from a colleague, author, etc.:  
Print Electronic (Skip to Q14)
- i. An author's Web site (Skip to Q14)
- j. Other Web site (Skip to Q14)
- k. Other source (please specify)

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(Skip to Q14)



## Scholarly Article Reading (cont.)

- What year was this article published/posted? \_\_\_\_\_
- About how much time did you spend reading this article most recently? \_\_\_\_\_ minutes
- Where were you when you read this article?
  - a. Office or lab
  - b. Library
  - c. Home
  - d. Traveling
  - e. Elsewhere (please specify)



## Scholarly Article Reading (cont.)

- After you identified this article, approximately how much time (in seconds or minutes) did you and/or someone else on your behalf (e.g., lab assistant, librarian) spend in **each** of the following activities? (If no time was spent, please enter 0.)

Obtain, request, receive, or download and display the article:

Your own time ..... \_\_\_\_ seconds or \_\_\_\_ minutes

Someone else's time on your behalf \_\_\_\_ seconds or \_\_\_\_ minutes

Photocopy or print out the article:

Your own time ..... \_\_\_\_ minutes

Someone else's time on your behalf ..... \_\_\_\_ minutes

Other (please specify) \_\_\_\_\_ ..... \_\_\_\_ minutes



## Scholarly Article Reading (cont.)

- Thinking back to the source of the article, (library, school subscription, interlibrary loan, etc.) where would you obtain the information if that source were not available?
  - a. I would not bother getting the information
  - b. I would obtain the information from another source

Please specify source here: \_\_\_\_\_

If b. is checked:

In order to obtain the same information, if this source were not available, I would expect to spend \_\_\_ minutes of time and/or \$ \_\_\_\_\_. (If the answer is zero, please enter “0” instead of leaving a blank.)



## Scholarly Article Reading (cont.)

- For what principal purpose did you use, or do you plan to use, the information obtained from the article you last read? (Choose only the one best answer.)
  - a. Research
  - b. Teaching
  - c. Administration
  - d. Current awareness/keeping up
  - e. Writing proposals, reports, articles, etc.
  - f. Consulting, advising others
  - g. Internal or external presentation
  - h. Other (please specify) \_\_\_\_\_





## Scholarly Article Reading (cont.)

- How important is the information contained in this article to achieving your principal purpose?
  1. Not at all important (Skip to Question 14)
  2. Somewhat important
  3. Important
  4. Very important
  5. Absolutely essential



## Scholarly Article Reading (cont.)

- In what ways did the reading of the article affect the principal purpose? (Choose all that apply):
  - a. It improved the result
  - b. It narrowed/broadened/changed the focus
  - c. It inspired new thinking/ideas
  - d. It resulted in collaboration/joint research
  - e. It wasted my time
  - f. It resulted in faster completion
  - g. It resolved technical problems
  - h. It saved time or other resources
  - i. Other (please specify) \_\_\_\_\_



## Scholarly Article Reading (cont.)

- Did you cite this article or do you plan to cite it in a paper or report?
  - a. No
  - b. Maybe
  - c. Already did
  - d. Will in the future

# BOOK READING

- In the past month (30 days) approximately from how many books or parts of books did you read for work? Include reading from a portion of the book such as skimming or reading a chapter. Include scholarly or review books read in print or electronic format. (If none, please enter “0” instead of leaving blank).

Number of books from which you read in the past month \_\_\_\_\_ books.

# READING OF OTHER PUBLICATIONS

- In the past month (30 days), approximately how many other publications have you read for your work? Include conference proceedings, government documents, technical reports, magazines, trade journals, etc. (If none, please enter “0” instead of leaving blank).

Number of other publications read in the past month  
\_\_\_\_\_ publications

## Other Uses of the Library

- In the past month (30 days), approximately how many times did you use a librarian to conduct a reference search online? \_\_\_\_\_ times (If no time spent, enter “0”) ( if “0” go to Q42)
- About how much time did you or someone else on your behalf spend working with the librarian on these searches? \_\_\_\_\_minutes or \_\_\_\_\_hours
- In the past month (30 days), approximately how much time did you spend working with a librarian on other matters such as looking up something, answering questions about library services, circulation, etc.? \_\_\_\_\_minutes or \_\_\_\_\_hours



## Other Uses of the Library (cont.)

- In the past year did you attend an instructional course at the library taught by member of the library staff?

a. Yes

b. No

or receive any special informal instruction by library staff

a. Yes

b. No

If b for both go to Q46

- About how much of your time did such instruction involve, including both in class and studying? \_\_\_\_\_ minutes  
\_\_\_\_\_ hours

# Demographics

- What sources did you use for the last substantive piece of information you used for work? (Select all that apply.)
  - a. Journal article
  - b. Conference proceeding
  - c. Web site
  - d. Magazine article
  - e. Book or book chapter
  - f. Personal contact
  - g. Other (please specify) \_\_\_\_\_



## Demographics (cont.)

- Which of the following best describes your discipline?
  - a. Life sciences
  - b. Physical sciences
  - c. Medical science
  - d. Computer science
  - e. Mathematics
  - f. Engineering
  - g. Social sciences
  - h. Business, management, marketing, etc.
  - i. Psychology
  - j. Law
  - k. Other



## Demographics (cont.)

- In the past two years, have you received any awards or special recognition for your research or other profession-related contributions?
  - a. Yes
  - b. No

If yes, briefly describe your awards or recognition

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## Demographics (cont.)

- How many personal subscriptions to professional journals do you receive, including those obtained as a member of a professional society? (Personal subscriptions are those that are personally addressed to you at your home, office, or lab.) If the answer is zero, please enter “0” instead of leaving a blank

\_\_\_\_\_ Print-only subscriptions

\_\_\_\_\_ Electronic-only subscriptions

\_\_\_\_\_ Subscriptions that include both print and  
electronic versions

# IN-DEPTH COST ANALYSIS

- Identify all library functions and activities
- Classify functions and activities by their relevance to cost analysis
- Establish staff time and costs for each function and activity
- Identify all other relevant resources and their costs
- Allocate these resources to each function and activity
- Allocate functions and activities to use-related and user-related services

# IDENTIFY ALL LIBRARY FUNCTIONS AND ACTIVITIES

- There are five general functions
  - Use-related functions
  - User-related functions
  - Operational functions
  - Support functions
  - Other functions
- Within these functions there can be anywhere from 50 to 100 activities (usually about 60)

# CLASSIFY FUNCTIONS AND ACTIVITIES BY THEIR RELEVANCE TO COST ANALYSIS

- Use-related examples include: access to internal and external collections, reference and research services, etc.
- User-related examples include: current awareness services, user instruction, access to facilities, etc.
- Operational examples include: collection development and management, acquisitions, materials receiving and processing, cataloging, physical processing, etc.
- Support examples include: management and administration, systems administration, etc.
- Other examples include: vacation, sick leave, holidays; professional development and training; “nonproductive” time such as staff meetings, slack time, scheduled coffee breaks, etc.



# ESTABLISH STAFF TIME AND COSTS FOR EACH FUNCTION AND ACTIVITY

- Use a log form in which each staff member indicates the activities in which they are involved and estimates the proportion of time they spend annually in each activity (summing to 100%)

- As a guide:

Two or three days 1s	1%
One week	2%
Two weeks	4%
Two coffee breaks at 15 minutes each day	6%
One month	8%

# ESTABLISH STAFF TIME AND COSTS FOR EACH FUNCTION AND ACTIVITY (cont.)

- Indicate the number of hours worked beyond a normal work week in a year
- If part-time how many hours in a year
- Establish productive hourly rates (excluding “non-productive” time) and add organization fringe benefits and overhead
- Establish staff costs for each function and productive activities





# IDENTIFY ALL OTHER RELEVANT RESOURCES

- Collection and other relevant purchases
- Space
- Systems
- Equipment
- Binding (if relevant)
- Shelves

# ALLOCATE THESE RESOURCES TO EACH FUNCTION AND ACTIVITY

- Space:
  - Staff allocated by staff time spent
  - Shelving (current periodicals, back file)
  - Photocopy
  - Workstations
  - Support staff, etc.
  - Systems equipment
- Systems: ask personnel to allocate to activities
- Shelves allocated by use
- Workstations:
  - Staff use allocated somewhat like space
  - User allocation determined by use

# ALLOCATE FUNCTIONS AND ACTIVITIES TO USE-RELATED AND USER-RELATED SERVICES

- Non-productive staff time allocated to productive staff time
- Support functions and activities are allocated across use-related, user-related and operational activities by proportion of their staff time
- Operational functions and activities (including support allocations) are allocated to appropriate use and user-related activities.
- Specific use-related activities are allocated by relative costs: for example, collection-related services are allocated by a combination of type of service (circulation, materials read in library, journal routing, ILL, photocopying, etc.) and type of document (books, journals, technical reports, etc.)

# ESTABLISH VALUE AND ROI OF RELEVANT SERVICES AND THE ENTIRE SPECIAL LIBRARY

- Values include identified benefits including contingent value (\$s)
- Investment includes users time (\$s) and relevant library cost
- Return is:
  - Identified benefits
  - Net contingent value: cost of using alternatives minus current cost
- ROI is net contingent value  $\div$  investment
- Typical special library ROI is 2.9 to 1

**Donald W. King**  
**Adjunct Professor**  
**University of Tennessee**  
**Honorary University Professor**  
**Bryant University**  
**donaldwking@gmail.com**