Appendix:  
Doing Online Research in Public Administration

INTRODUCTION

Today it is increasingly recognized that developing competencies in online research is a requirement for the training of professionals (Barry, 1997). Nowhere is this more true than in public administration research because the federal and other levels of government have taken the lead in online access to public records (Taylor, 1991; Stowers, 1996; Milward & Snyder, 1996; Reschenthaler and Thompson, 1996). As Roberta Balstad Miller has observed, information technology is providing unprecedented access to data as well as to the ability to analyze it (Miller, 1995). Traditional modes of data collection are destined to be replaced by electronic access to metadata and databases. Researchers will spend less time on data collection itself and will spend more time on analysis and interpretation. As electronic access reduces the cost of research the scope of research is expanding, as is online research collaboration.

In fact, so swift has been the rise in the significance of online research and the volume of use that by the mid-1990s, significant problems had arisen related to the scalability of existing research discovery tools. The Internet Research Task Force was established to study problems associated with the continued growth of data volume and data diversity. The Task Force has recommended ways to improve data retrieval, improve data servers, and upgrade searching
algorithms (Bowman et al., 1994). Several government and corporate initia-
tives, including the National Information Infrastructure (NII) and Internet II, are
now directed at assuring the viability of online access as a research tool. It is
no exaggeration to say that national corporate and political leaders now see
massive investment in the infrastructure for online research as the key to
American research, development, and productivity competitiveness in the
twenty-first century.

GENERIC SEARCHING ON THE WEB

GPO (Government Printing Office) access is available through many
libraries (e.g., http://www.lib.ncsu.edu/stacks/gpo/), providing online access
to a wide variety of government documents, including but not limited to:

- Blue Book (Overview and Compilation of US Trade Statutes)
- Budget of the United States
- Code of Federal Regulations
- Commerce Business Daily
- Congressional Bills
- Congressional Directory
- Congressional Documents
- Congressional Record
- Congressional Record Index
- Congressional Reports
- Department of the Interior Inspector General Reports
- Economic Indicators
- Economic Report of the President
- Federal Register
- General Accounting Office (GAO) Reports
- General Accounting Office (GAO) Comptroller General Decisions
- History of Bills and Resolutions
- Public Laws
- Supreme Court Decisions
- US Government Manual
- United States Code
- Weekly Compilation of Presidential Documents

Apart from the GPO, numerous web sites specialize in providing gateways
to federal government information:
Another set of web sites specialize in providing gateways to state-level governmental information:

- http://web.fie.com/index.htm, FEDIX
- http://www.governing.com/, Governing (State and Local Government)
- http://www.gol.org, Government Online
- http://www.ncsl.org, National Conference of State Legislatures (NCSL)
In addition, generic online searching in public administration can be accomplished through any of the large number of web search engines. AltaVista (http://www.altavista.com) is perhaps the leading such engine, and others include Yahoo (http://www.yahoo.com), Excite (http://www.excite.com), Lycos (http://www.lycos.com), and WebCrawler (http://www.webcrawler.com). All accept keyword searching and some, such as Yahoo, actively organize pages of web links on selected topics, some of which are related to public administration concerns.

Besides websites, there are also thousands of electronic discussion groups, often called listservs or just lists, many on topics of interest to public administration. One may search for these discussion groups through Liszt (http://www.liszt.com/) or search by keyword the contents of any and all discussion groups through DejaNews (http://www.dejanews.com/).

**COMMON GOVERNMENTAL WEBSITE DESTINATIONS**

Of course, the federal agencies themselves all have websites providing a wealth of research information. Among the most common governmental website destinations are these:

- http://www.ojp.usdoj.gov/bjs/, Bureau of Justice Statistics
- http://www.odci.gov/cia/, Central Intelligence Agency
- http://www.census.gov, Census Bureau
• http://www.doc.gov/, Commerce Department
• http://www.senate.gov/~budget/republican/, Committee on the Budget, US Senate
• http://www.doe.gov, Energy
• http://www.epa.gov, Environmental Protection Agency
• http://www.access.gpo.gov/su_docs/budget/index.html, The Federal Budget
• http://www.fbi.gov, Federal Bureau of Investigation
• http://www.fcc.gov/, Federal Communications Commission
• http://www.fdic.gov/, Federal Deposit Insurance Corporation
• http://www.fec.gov, Federal Election Commission
• http://www.fjc.gov/, Federal Judicial Center
• http://www.ftc.gov/, Federal Trade Commission
• http://www.financenet.gov/, FinanceNet
• http://www.gsa.gov, General Services Administration
• http://www.access.gpo.gov/su_docs/, Government Printing Office
• http://ssdc.ucsd.edu/gpo/, Government Printing Office Access, including Federal Register
• http://www.os.dhhs.gov, Health and Human Services, Department of
• http://www.hud.gov/, Housing and Urban Development, Department of
• http://amcom.aspensys.com/huduser/, HUD User Databases
• http://www huduser.org/, HUD User
• http://www.usdoj.gov/, Justice Department
• http://www.fpml.com//MSPB/MSPBhomepage.html, Merit Systems Protection Board
• http://www.hq.nasa.gov/, National Aeronautics and Space Administration
• http://www.nara.gov, National Archives and Records Administration
• http://www.nlrb.gov/, National Labor Relations Board
• http://www.npr.gov/, National Performance Review (“Reinventing Government”)
• http://www.nsf.gov, National Science Foundation
• http://www.nsa.gov:8080, National Security Administration
• http://www.osha.gov/, Occupational Safety and Health Administration
• http://www.whitehouse.gov//WH/EOP/omb, Office of Management and Budget
• http://www.opm.gov/, Office of Personnel Management
• http://adams.patriot.net/~permail/, Public Employees Roundtable
• http://www.state.gov/, State Department

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• http://www.ustreas.gov/, Treasury Department
• http://www.usia.gov, US Information Agency
• http://www.usoge.gov/, US Office of Government Ethics
• http://www.usps.gov/, US Postal Service
• http://www.usssc.gov/, US Sentencing Commission

**ACADEMIC WEBSITES IN PUBLIC ADMINISTRATION**

In addition to agency websites, academia provides its own array of destinations valuable for public administration research, including these common destinations:

• http://www.aom.pace.edu/websites/index.html, Academy of Management
• http://www.apsanet.org/, American Political Science Association
• http://www.fsu.edu/~spap/orgs/apsa.html, American Political Science Association Policy Section
• http://www.aspanet.org/, American Society for Public Administration (ASPA)
• http://qsilver.queensu.ca/~appamwww/index.html, Association for Public Policy Analysis and Management
• http://www.wvu.edu/~socialwk/A/arnova.html, Association for Research on Nonprofit Organizations and Voluntary Action
• http://www.nmc.csulb.edu/users/publicadmin/, Charting a Course in Public Administration
• http://www.cox.smu.edu/mis/cases/home.html, Cases in MIS: Edwin L. Cox School
• http://www.hallway.org, Electronic Hallway: Cases and Teaching Resources for Public Policy and Management (University of Washington)
• http://cid.unomaha.edu/~wwwpa/fsite.html, Finance Administration Web Sites
• http://sfswww.georgetown.edu/sfs/programs/isd/files/pub.htm, Georgetown University’s Case Collection
• http://ksgwww.harvard.edu/~innovat/, Innovations in American Government
• http://www.willamette.org/ipmn/, International Public Management Network
• http://www.uakron.edu/paus/pae.html, Journal of Public Administration Education
• http://ksgwww.harvard.edu/caseweb/, Kennedy School of Government Case Studies
• http://www.unomaha.edu/~wwwpa/parost.html, MPA Program Web Sites
• http://www.unomaha.edu/~wwwpa/nashome.html, National Association of Schools of Public Affairs and Administration
• http://garnet.berkeley.edu:3333/budget/budget.html, National Budget Simulation
• http://www.hbg.psu.edu/Faculty/jxr11/, <i>Public Administration and Management: An Interactive Journal</i>
• http://www.niu.edu/ext/par/, Public Administration Review
• http://deming.eng.clemson.edu/pub/psci/, Public Sector Network
• http://unicorn.unomaha.edu/faculty/cbayer/web/npmarks.htm, Web Sites for Nonprofit Managers
• http://www.yale.edu/isps/ponpo/pubs/casesnpg.html, Yale: Cases in Nonprofit Governance
• http://www.gol.org/bestof.html, Best of Practice Government Solutions
• http://www.brook.edu/, Brookings Institution
• http://www.civiced.org, Center for Civic Education
• http://www.civic.net:2401/, Center for Civic Networking (related to the emerging National Information Infrastructure)

**NGO WEBSITES**

Non-governmental organizations provide yet more websites useful for public administration research, beyond those from federal agencies and from universities. Leading NGO sites include the following:
PUBLIC POLICY SITES

Each public policy arena has a large set of websites, too numerous to list here. However, common public policy gateway sites for the researcher include the following:

- http://www.fsu.edu/~spap/orgs/apsa.html, American Political Science Association, Policy Section
- http://www.brook.edu, Brookings Institution
- http://www.brook.edu/, Brookings Institution
- http://www.cato.org/, CATO Institute
- http://www.epn.org/, Electronic Policy Network
- http://essential.org/, Essential Information
- http://www.igc.org/an/, Institute for Alternative Journalism
- http://www.ipi.org/, Institute for Policy Innovation
- http://ksgwww.harvard.edu/~ksgpress/opinhome.htm, Kennedy School of Government
- http://www.unomaha.edu/~wwwpa/nashome.html, National Association of Schools of Public Affairs and Administration
- http://nces.ed.gov/, National Center for Education Statistics
- http://www.nationalcenter.inter.net/, National Center for Public Policy Research
- http://www.ncsl.org, National Conference of State Legislatures (NCSL)
- http://www.now.org/, National Organization of Women
- http://www.npr.gov/, National Performance Review
• http://www.whitehouse.gov/WH/EOP/omb, Office of Management and Budget
• http://spirit.lib.uconn.edu/PoliSci/polisci.htm#WWW_Academic, Political Science Departments
• http://www.lgu.ac.uk/psa/psa.html, Political Studies Association (UK)
• http://www.hhh.umn.edu/PUBPOL/, PubPol Public Policy Archives
• http://www.rand.org/, Rand Corporation
• http://www.clearlake.ibm.com/Alliance/regodata.html, Reinventing Government Database (REGO)
• http://www.thinktank.com/thnklnk.html, ThinkLink
• http://www.urban.org/, Urban Institute
• http://ksgwww.harvard.edu/~library/resorgs.htm, Other Policy Think Tanks and Resources

Crime Policy
• http://www.criminaljustice.org/PUBLIC/clinks.htm, National Association of Criminal Defense Lawyers Research Links
• http://www.ncjrs.org/homepage.htm, National Criminal Justice Reference Service (NCJRS)
• http://www.rand.org/publications/RRR/RRR.spring95.crime/, RAND Corporation Crime and Drug Projects
• Economic Policy
  • http://www.cyberpoint.co.uk/asi/, Adam Smith Institute (UK)
  • http://www.cbo.gov/index.cfm, Budgetary Policy: The Congressional Budget Office
  • http://domino.stat-usa.gov/, Commerce Dept. Stat-USA
  • http://ecolan.sbs.ohio-state.edu/links.html, Economics Information Center, Ohio State University
• http://econwpa.wustl.edu/Welcome.html, Economics Working Paper Archive
• http://www.bog.frb.fed.us/, Federal Reserve Board
• http://www2.tax.org/taxhistory/Documents/Fiscal/fiscal.htm, Fiscal Policy, Tax History Project
• http://weber.u.washington.edu/~fpcweb/, Fiscal Policy Center, University of Washington
• http://www.cato.org/research/fiscal.html, Fiscal Policy Studies, Cato Institute
• http://epn.org/idea/economy.html, Idea Central: Economics and Politics
• http://www.ita.doc.gov, International Trade Administration
• http://woodrow.mpls.frb.fed.us/info/policy/, Monetary Policy, Federal Reserve Bank
• http://www.financenet.gov/financenet/start/topic/private.htm, Privatization Resources, FinanceNet
• http://www.eden.com/~reporter/, The Progressive Populist
• http://www.regpolicy.com/, Regulatory Policy Center (focus on property rights)
• http://www.worldbank.org, World Bank
• http://www.yahoo.com/Social_Science/Economics/, Yahoo Economics Links

Education Policy
• http://www.aasa.org/index.html, American Association of School Administrators Home Page
• http://www.aft.org/index.htm, American Federation of Teachers
• http://www.coe.memphis.edu/coe/CREP/crep.html, Center for Research in Educational Policy
• http://csr.syr.edu/, Charter School Research
• http://www.whitehouse.gov/WH/New/html/educationfact.html, Clinton National Testing Standards Proposal FAQ
• http://www.collegeboard.org/index_this/grn/html/lcpositsh.html, College Board’s Legislative Priorities
• http://csl.wednet.edu/, Commission on Student Learning
• http://olam.ed.asu.edu/epaa/, Educational Policy Analysis Archives
• http://home.aisr.brown.edu/ces/publicat/horace/v06n02.htm, Educational Policy and the Essential School, HORACE, Brown University
• http://www.nea.org/, National Education Association
• http://www.colostate.edu/Orgs/NREA/, National Rural Education Association
• http://www.nsba.org/, National School Boards Association
• http://www.cel.mcgill.ca/orep/default.html, Office of Research on Educational Policy
• http://www.ncrel.org/sdrs/pathwayg.htm, Pathways to School Improvement, North Central Regional Educational Laboratory

**Health Policy**
• http://www.aarp.org, American Association of Retired Persons
• news:bit.listserv.ada-law, Americans with Disabilities News Server
• http://www.ama-assn.org/, American Medical Association
• http://lhcwww.soph.uab.edu/, Center for Health Policy, University of Alabama-Birmingham
• http://www.whitehouse.gov/WH/Publications/html/WH-Major-Docs.html, Clinton Health Security Act
• http://epn.org/idea/health1.html, IdeaCentral, Health Policy Page
• http://www.cdc.gov/nchswww/index.htm, National Center for Health Statistics

**Tax Policy**
• http://www.taxsites.com/policy.html, Links to Tax Policy Groups
• http://omer.actg.uic.edu/, Tax World
• http://omer.actg.uic.edu/othersites/stateinfo.html, States’ Tax Policies
• http://www.taxhistory.org/, Tax History Project
• http://www.acccf.org/TaxPo1An.htm, Tax Policy Analysis, American Council for Capital Formation
• http://www.ustreas.gov/treasury/browse/tax.htm, Tax Policy Page, Dept. of the Treasury

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Welfare Policy
• http://www.apwa.org/index.htm, American Public Welfare Association
• http://www.afj.org/mem/welflaw.html, Center for Social Welfare Policy and Law
• http://aspe.os.dhhs.gov/hsp/isphome.htm, Department of Health and Human Services, Economic Support for Families Page
• http://www.handsnet.org/handsnet2/welfare.reform/, Handsnet Welfare Reform Watch
• http://epn.org/idea/welf-bkm.html, Idea Central, Welfare Reform Links
• http://nch.ari.net/, National Coalition for the Homeless
• http://www.ssa.gov, Social Security Administration

DATA-RELATED SITES

In terms of generic searching for data on the Internet, there are a large number of websites which are pertinent to data-oriented public administration research:

Statistical data:
• http://www.census.gov, Bureau of the Census
• http://www.icpsr.umich.edu/gss/, General Social Survey (GSS) Home Page at the ICPSR
• http://www.icpsr.umich.edu/gss/search.htm, Search the General Social Survey
• http://www.lib.umich.edu/libhome/Documents.center/stats.html, University of Michigan Statistics Page
• http://www.lib.virginia.edu/socsci/, Social Sciences Data Center
• http://www.ntu.edu.sg/library/statdata.htm, Statistical Data Locators
• http://odwin.ucsd.edu/jj/idata/index.html, UCSD Searchable Listing of Social Science Data Sources
• http://www.stat-usa.gov/, Stat-USA (Commerce Department)
• http://www.cudenver.edu/psrp/psrp.html, Political Science Research Page
Poll data:
- http://www.gallup.com/, Gallup Organization
- http://www.unc.edu/depts/irss/, IRSS Home Page
- http://www.irss.unc.edu:80/data_archive/, IRSS Data Archive
- http://www.isr.umich.edu/src/, University of Michigan Survey Research Center
- http://www.ropercenter.uconn.edu/, Roper Center for Public Opinion Research, including POLL (also available in Dialog, discussed on the next page)
- http://www.nsd.uib.no/cessda/namer.html, Social Science Data Archives—North America
- http://ssdc.ucsd.edu/ssdc/pubopin.html, Social Science Data Collection, from UCSD

EXPLORING CENSUS DATA

Census Access

A very wide and changing variety of data pertinent to public administration are available online through the Census.

Approximately 300 Census CD-ROMs are available online at http://cedr.lbl.gov/cdrom/doc/cdrom.html, by arrangement with the University of California. Once Census data have been downloaded, the problem becomes one of putting it in a format which is useful. The Census provides free, downloadable software for this purpose. Extract, located at http://www.census.gov/main/www/epcd/www/extract.html, is the general purpose PC-based data display and extraction tool that works with Census Bureau CD-ROMs recorded in dBASE format.

Integrated Public Use Microdata Series (IPUMS) data, the richest source of time series census data, are made available through the University of Minnesota at http://www.ipums.umn.edu/ (IPUMS-98 home page) and http://www.ipums.umn.edu/~ipums/index1.html (IPUMS-95 home page). IPUMS
was created at the University of Minnesota and consists of 25 samples of the American population drawn from thirteen federal censuses from 1850 to 1990, using uniform codes across all the samples and providing documentation. It includes nearly everything originally recorded with the principal exception being that due to confidentiality laws applying to years from 1940 on, no names, addresses or other identifying information are included. Moreover, samples from 1940 on include only geographic areas with 100,000 inhabitants or more (250,000 in 1960 and 1970). The 1850 and 1860 samples exclude the slave population. The pre-1890 samples exclude “Indians not taxed.” The pre-1960 samples, except 1900 and 1910, exclude Alaska and Hawaii. Samples since 1970 include unoccupied housing units. Variables include fertility, nuptiality, life-course transitions, immigration, internal migration, labor-force participation, occupational structure, education, ethnicity, and household composition. Since 1960, detailed housing characteristics are also included. Extract software, referenced above, is used in conjunction with IPUMS data.

SIPP, the Survey of Income and Program Participation, is made available online through the ACCESS project, described by Robbin (1992).

The Government Information Sharing Project, discussed below, provides links to a variety of Census resources at http://govinfo.kerr.orst.edu/. At the time of this writing, links included USA Counties 1996 (including GIS choropleth maps for selected variables), 1992 Economic Census, US Import-Export History, Regional Economic Information System, Consolidated Federal Funds Report, Earnings by Education and Occupation, Population Estimates by Age, Sex, and Race, and more.

The 1990 Census Lookup allows the user to create his or her own extract files, located at http://venus.census.gov/cdrom/lookup.

The Ferret Data Extraction and Review Tool provides another method of obtaining Census data extracts, located at http://ferret.bls.census.gov/cgi-bin/ferret.

The Data Extraction System (DES), also known as Surveys-on-Call, also creates custom data extracts at MABLE/GeoCorr, the Census’s Geographic Correspondence Engine, located at http://www.census.gov/main/www/DES/www/welcome.html.

MapStats is an online guide to data profiling the states and counties, located at http://www.census.gov/main/www/datamap/www/index.html.

The Tiger Map Server allows the user to generate detailed maps on-the-fly, located at http://tiger.census.gov/cgi-bin/mapsurfer. The Tiger Map Server requires Netscape 2.0 or higher.
Direct file access to Census files is available using file transfer protocol at ftp://ftp.census.gov/pub/.

MABLE/GeoCorr is the Census’s Geographic Correspondence Engine, located at http://www.census.gov/main/www/plue.

The US Gazetteer provides place name and ZIP code searches, located at http://www.census.gov/cgi-bin/gazetteer.

State Data Center (SDC) and Business and Industry Data Center (BIDC) Programs

The Bureau of the Census’s State Data Center (SDC) Program was established in 1978 to provide training and technical assistance in use of census materials by educators, researchers, business, and government. Later, in 1988, the Business and Industry Data Center (BIDC) Program was added to provide specific support for the business community, but it is also useful for academic and other researchers engaged in business-related work. Both SDC and BIDC websites contain a wide variety of general and state-specific data resources, with emphasis on census materials.

LEGISLATIVE AND LEGAL ONLINE RESEARCH

Legislative and legal research has been dominated by electronic modalities since the 1980s (Hubbard, 1982; Maclay, 1989). As in the area of bibliographic searching, some legislative and legal research may be done for free on the web, but recurrent use will warrant subscription to an online service. The leading example of such a general service is Lexis-Nexis, whose home page is http://www.lexis.com/. In the more specific area of citation research, the leading service, also fee-based, is West (Beckman & Hirsch, 1997). West Publishing Group’s electronic research system, KeyCite, is only available online to maintain its currency, reflecting a sea-change in research. In one area after another, online access is becoming the modality of choice. KeyCite’s graphical interface supports hypertext links to cases, case histories, precedent cases, and other authorities. From a cost viewpoint, even a modest research program could easily spend thousands of dollars a year for either the West or Lexis-Nexis service, but some law schools and bar associations will arrange for access to databases on a fee-for-use basis, and some research university libraries make them available for fee or free to faculty and graduate students.

Although fee-based services provide the best and most comprehensive access for legislative and legal research, a variety of free online research tools also exist, such as FindLaw (Quinn, 1997; Healey, 1997).
The US Code itself is available online from Cornell University, at http://www.law.cornell.edu/uscode/.


NCJRS is the National Institute of Justice’s National Criminal Justice Reference Service. Its purpose is to share information about criminal justice research and evaluation, work, statistical analysis, policy, and programs.

UNOJUST is the United Nation’s On-line Crime and Justice Clearinghouse. Supported by the NCJRS, which has had extensive relationships with the international community, the United Nations Crime Prevention and Criminal Justice Branch asked NIJ (National Institute of Justice) to assist in designing the prototype of an Internet-based system of information exchange (Lively, 1995). The outcome, UNOJUST, is based on a structured approach intended to link each of its 13 institutes via the Internet in order to support research on crime and justice.

NEWS RESEARCH ONLINE

Computer-assisted reporting has become an important tool for newspaper reporters in the 1990s. A University of Miami study revealed that such usage at newspapers from 1995 to 1996 was most pervasive in areas of interest to public administration, including local government, politics and election, and policy areas such as education (Garrison, 1997). In fact, government information was among the most common subject of online searches by newspaper reporters.

Many newspapers have their own online access services, some free, some not. Also, database vending services such as Dialog (discussed below) provide another avenue for news-clipping searching. If one can be satisfied with shorter articles and limited but still very extensive general news coverage, Pointcast (http://www.pointcast.com) provides a free service through which one can access both general news sources (e.g., Washington Post, New York Times, CNN, Time) and specialized ones, including a range of governmental sources (e.g., congressional committee materials, Federal Register).

GEOGRAPHIC DATA ONLINE

Most agencies now use mapping in one form or another. Fortunately,
online access to geographic data has expanded, as has online access of text or statistics. Some leading web sites are listed below:

**Government sites**
- http://www.noaa.gov/, National Oceanic and Atmospheric Administration (NOAA)
- http://www.bts.gov/gis/links/links.html, Transportation Department GIS Links
- http://www.govtech.net/services/connections/gis.shtm, State GIS Programs and other GIS Resources

**Educational and Professional Sites**
- http://www.aag.org/, Association of American Geographers (AAG)
- http://wings.buffalo.edu/geoweb/services.html, GeoWeb GIS Links
- http://geog.gmu.edu/gess/jwc/cart2.html, Index of Cartographic Resources
- http://www.urisa.org/, Urban and Regional Information Systems Association (URISA)

**Vendor Sites**
- http://www.esri.com/, ArcView at ESRI
- http://campus.esri.com/campus/home/home.cfm, ESRI Virtual Campus

**PUBLIC-SECTOR LABOR RESEARCH**
Most public-sector unions have extensive websites, which can be a valuable aid in labor relations research:
• http://www.unionpride.com/afgeWWWnetwork.shtml, American Federation of Government Employees
• http://www.afge.org/history/history.htm, A History of American Federation of Government Employees
• http://www.afscme.org, American Federation of State, County, & Municipal Employees (AFL-CIO)
• http://www.apwu.org, American Postal Workers Union (AFL-CIO)
• http://www.mailhandlers.org, National Postal Mail Handlers Union
• http://www.nalc.org, National Association of Letter Carriers (AFL-CIO)
• http://www.natca.org, National Air Traffic Controllers Association
• http://www.natcavoice.org/, National Air Traffic Controllers Assn. Newsletter
• http://www.nteu.org, National Treasury Employees Union

**BIBLIOGRAPHIC RESEARCH ONLINE**

In addition to online data-oriented research, public administrators, like other scholars, often need to engage in bibliographic research to determine what other work and analysis has been done in a given area. Although a limited amount of bibliographic searching may be done free on the web, agencies and educational institutions which have a recurrent need in this area will almost certainly find it cost beneficial to subscribe to a fee-based online service such as Dialog, the nation’s leading vendor of bibliographic and full-text databases. This is also true when searching for national, regional, and local news clippings on a given topic.

If bibliographic research is to be undertaken on a regular basis, a preliminary step is arming oneself with bibliographic data management software. ProCite and its companion products, Bibliolinks, and BookWhere?, are leading examples which complement searching on the web or on Dialog. ProCite stores citations in a database and can print them out in any format. Bibliolinks automatically takes Dialog and other downloaded information and sticks citations in a ProCite database. BookWhere? automatically goes out over the Internet to download citations from college libraries and the Library of Congress and puts the finds in a ProCite database. ProCite also installs itself as a tool in WordPerfect or Word so you can “cite while you write,” adding the references for any author or subject you highlight, based on searching the ProCite bibliographic database.
Searching with Dialog

Dialog makes available several hundred databases, many of them bibliographic in nature. These include Public Affairs Information Service (PAIS), the leading general-purpose public administration bibliographic resource. Others include Sociological Abstracts, Criminal Justice Abstracts, Dissertation Abstracts, Books in Print, and most bibliographic reference sources one would encounter in the reference section of a university library. One may also access leading national and regional newspapers, trade journals, and a limited amount of numeric data (CenData, with Census data; and POLL, the Roper Center’s database of almost every survey item ever published, not only by Roper, but also by Gallup, NYT, ABC, and many others). Details on each database are found in “Dialog Bluesheets,” which are available online at http://www.krinfo.com/dialog/krinfo/bluesheets.html. To get to Dialog itself, one uses telnet to the address telnet://dialog.com. Telnet will require one has first obtained an account number and password from the Knight-Ridder Corporation, the owners of Dialog. Help in using the Dialog system is available online at http://www.krinfo.com/search/dir_search.html.

The first step in Dialog searching is selecting the databases you want from among the several hundred available. Though there are certain pre-selected groups of database, such as the GOVT government databases list or the PUBAFF public affairs list, use of these is very apt to be inefficient, including many databases of marginal interest. Instead, one will usually be better off by investigating the available databases through one of two paths. The Dialog “Blue Sheets” are available free online and contain descriptions of the features of each database, along with a sample record. Alternatively, one can invoke the “DialIndex” database, which contains metadata on all the others. After entering keywords into DialIndex, the researcher will be presented with the number of hits (matches) available in each database, ranked by frequency, thereby enabling the researcher to select the databases which are likely to be closest to his or her interests.

Commonly selected data files on Dialog include those listed below. In each case there is an associated file number (e.g., 1 for the ERIC database). These file numbers are used to actually invoke a database in an online session. DialIndex, mentioned above, is file number 411, and Dialog Blue Sheets is file 415.

<table>
<thead>
<tr>
<th>File No.</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ERIC, educational and general coverage</td>
</tr>
<tr>
<td>11</td>
<td>PsychInfo, the leading bibliographic source in psychology</td>
</tr>
</tbody>
</table>
Numerous other databases are available, including some of interest to public administration, such as the National Technical Information Service (NTIS), which covers all federally funded research.

To go online with Dialog one must prearrange an account number and password, since this is a fee service. One can connect to Dialog (as of 1998) by using Telnet software to go to the address dialog.com. After entering the account number and password, the researcher can choose between a menu
mode and a command mode. Typing /MENU at command mode “?” prompt invokes the menu system. Typing /NOMENU at a menu system “?” prompt returns one to the command mode.

The command mode can be executed successfully with a half dozen commands. There are five basic steps:

1. First, the researcher invokes the desired databases with the “B” (Begin) command, as for example, “B 1,35,37” (but without the quote marks) to invoke ERIC, Dissertation Abstracts, and Sociological Abstracts simultaneously. Predefined sets can also be invoked in the same way, for example, B GOVT. Other predefined sets include BOOKS, BUSECON, BUSSTAT, EDUCAT, ENERGY, ENVIRON, HUMANIT, INFOSCI, LABOR, LAW, MANAGE, NEWswire, PAPERS, PSYCH, PUBAFF, and SOCSCI.

2. Second, one enters one’s keywords. A common strategy is to define each dimension separately, generating a set for each dimension, then asking for the intersection of the sets. For instance, a “government” dimension might include terms like government, public, federal, city, state, municipal, and so on. A “management” dimension might include terms like management, administration, and supervision. There may be several such dimensions. Root terms can be entered with a question mark wildcard: supervis? will get supervise, supervision, supervisor, etc. Phrases can be entered with the “w” operator: public(w1)policy, for instance, gets hits in which the two words are within one word of each other. One can also enter predefined descriptor terms found in the database’s dictionary, or found in the descriptor portion of previous hits which have been displayed or printed. The actual request for the keywords is implemented with the “S” search command: S manage? or administ? or supervis?, to get the management dimension. Dialog will list the number of matching hits and assign a set number. Once all the dimensions have been created, one can request the intersection: S S1 and S5 and S8, for instance, gets the intersection of sets 1, 5, and 8. The Dialog command DS displays set numbers if the researcher forgets.

3. The third step is usually to filter the large number of hits one is apt to receive. For instance, one may limit hits to keywords appearing in the article titles. If S15 is the desired intersection, then the command “S S15 and public/TI” (without quotes) would give only the intersection hits in which the term “public” appears in the title. One can also limit by publication year: “S S15 and PY=1995:PY=1999” (without quotes) gets only hits between 1995 and 1999.
4. The fourth step is to print out one’s hits. Each version of Telnet differs somewhat, but there is always a menu choice along the lines of “Start logging.” This choice will allow the researcher to specify a directory and file name under which to save the hits one is about to list. After logging is turned on, everything that appears on the screen will also go into the file, which will be a plain ASCII text file. If the final set is S17, then it can be listed by the “T” type command: “T S15/5/all” (no quotes). There are three parameters: the set number, S15; the format, described on the Blue Sheets (5 is almost always “full format” and gives the most information; other formats may leave out the abstract, the descriptors, or other elements; KWIC can also be used in place of the 5 to get keyword-in-context listings); “all” specifies which records should be printed (one may also enter a numeric range, such as 1-25 for the first 25 records, which tend to be the 25 matching records most recently entered into the database). If a bibliographic database manager such as ProCite is used, the type command may also need the added term “TAG” at the end of the line. This adds tags such as “AU=” for the author component of the record, helping the database manager read in the downloaded records.

5. The fifth step is to log off. It is important that the researcher select “Stop Logging” or equivalent from his or her Telnet software, to close the logging file. In Dialog one then simply enters the command term LOGOFF.

There are, of course, numerous other options in the Dialog system. For instance, one can get an online explanation of any command by typing the command “HELP” followed by the command word of interest (e.g.: HELP TYPE). RANK DE will give a ranked list of descriptor terms for the current set of hits. The command EXPAND can be used with descriptor terms to generate additional potential keywords. EXPAND ROBBERY, for instance, will generate a list of keywords related to “robbery,” assuming “robbery” is a descriptor for the current database. RD will remove duplicates prior to using the “T” command to display the records.

Other Paths to Online Bibliographic Research

ERIC. Perhaps the leading free online bibliographic resource is ERIC, the Educational Resources Information Clearinghouse. Though funded by the US Department of Education and having some focus in this area, ERIC is a general-purpose bibliographic search engine with broad coverage of current events and social sciences topics. The ERIC search engine works like most others, accepting keywords and returning citations. It is located at the web address

LOC. The Library of Congress Search System gives access to citations on nearly every book ever published in the United States, and to many foreign works. It is located at the URL http://lcweb2.loc.gov/ammem/booksquery.html. Once there, one searches for books in the usual keyword manner, but a useful feature is that after finding a “hit,” there is a “Browse the Shelf” button that gives access to adjacent titles in Dewey Decimal System library order so that one may seek additional titles, much as many researchers do in manual library research.

Amazon.com is a good source for online searching of books in print, available at http://www.amazon.com/. In some cases, reviews are also available.

Bartlett’s Quotations is searchable online at http://www.columbia.edu/acis/bartleby/bartlett/.

City Net provides a wide variety of general information about major metropolitan areas, including maps, located at http://www.city.net.

The Electronic Newsstand, at http://www.enews.com/, links to over 2,000 online periodical sites. See also the Electronic Newspapers and Media page of the Yahoo search service, at http://www.yahoo.com/news_and_media/.

The Federal Web Locator is a major search service for federal governmental websites, located at http://www.law.vill.edu/fed-agency/fedwebloc.html.

The Internet Public Library, run by the University of Michigan, is at http://ipl.sils.umich.edu/ref/. Here one may pose questions to a virtual librarian, as well as browse the Ready Reference Collection.

Leading Political Science Sites is an extensive collection of website links, maintained by the author. It is located at http://hcl.chass.ncsu.edu/garson/burns/leading.htm. Click on “Bureacracy,” “Public Policy,” and “Federalism” chapters for public administration, public policy, and state government topics, respectively.

Research-it at http://www.itools.com/research-it/research-it.html contains a general-purpose collection including a dictionary, thesaurus, translators, language tools, biographical dictionary, Bartlett’s Quotations, maps, CIA Factbook, telephone directories, financial tools, zip codes, listservs lists, and more.


How to Cite Documents Found on the Web

There are a variety of suggested citation styles for Internet information. One is found at the Library of Congress web site at http://lcweb2.loc.gov/ammem/ndlpedu/cite.html. Another is found at the Internet Law web site at http://www.ipl.org/ref/QUE/FARQ/netciteFARQ.html. Specifically for users of public administration materials, the Bureau of the Census has provided one widely-used format, which is recommended below.

For web pages, including ASCII text or PostScript document format (PDF) files, the Census recommended format is as follows:

Author (last name, first name), if applicable, followed by “US Census Bureau”; within quotation marks, title of agency source or output/work, and/or html title (if different from the previous title); if available, the publication/issue/release (or “last revised”) date, e.g., “published 27 December 1996;” universal resource locator (URL) of the tile page, if applicable, or the page where cited material appears, set off by angle brackets (); if there is no visible publication date, one may note the date, within parenthesis, when the data were accessed, e.g., “(accessed: 7 January 1997).” Semicolons are used to separate elements.

Examples:


On the web, there is a difference between static pages discussed above and dynamically generated pages. Dynamically generated tables and files do not exist as a specific URL address but are created “on the fly” in response to a user completing a web-based form. For dynamic pages, the Census-recommended format is as follows:

Name of agency; name of the database or other data repository/source (e.g., Data Access and Dissemination System [DADS], Survey of Income and Program Participation [SIPP], TIGER Mapping Service, etc.), set off by quotation marks, or follow publication citation style; the name of the person who generates the extraction, tabulation, etc., e.g., “generated by John Smith;” the name of the software package used to generate the extract, tabulation, etc., if known, e.g., “using Data Extraction System;” the URL of the application software’s main or first page set off by angle brackets, e.g., <http://www.census.gov/des/p1>; the date, within parenthesis, when the user generated the extract, tabulation, etc., e.g., (7 January 1997). Again, semicolons are used to separate elements.

Examples:

A third type of citation is represented by file transfer protocol (FTP) files, which are simply files residing on a remote computer, such as a file server belonging to the Census Bureau. These files are normally downloaded to the user’s computer and may not be viewed with a web browser at all. This is the recommended format for FTP files.

US Census Bureau; filename, e.g., “stp222.06;” file date, if available, e.g., “published 10 January 1997;” universal resource locator (URL), set off by angle brackets (), of page where cited material appears, e.g., <ftp://ftp.census.gov/housing>; if no file date found, the date, within parenthesis, when the user accessed the data, e.g.: (accessed: 7 January 1997). Semicolons separate elements.
Examples:

U.S. Census Bureau; M20a9611.wk1; published 7 January 1997; <ftp://www.census.gov/pub/industry/M20a9611.txt>.

E-mail is a fourth and final type of citation, where the format is:

Message author's name (last name, first name, middle initial), e.g., “Smith, John T.”; words “personal e-mail”; name of agency; subject from subject line of e-mail message, e.g., subject: “fertility statistics;” date e-mail sent, e.g., “7 January 1997.” Semicolons separate elements.

Example:
Smith, John T.; personal e-mail; U.S. Census Bureau; subject: fertility statistics; 7 January 1997.

KEEPING UP

Although this essay seeks to constitute an overview of online research in public administration, providing good beginning points, the online world is constantly changing and expanding. Fortunately, there are a variety of ways of continuously updating one’s online research skills.

The Government Information Sharing Project is an electronic mailing list sponsored by Oregon State University Information Services. It specializes in providing users with links and information on updates and additions related to public administration data. The list includes notices of what is listed in its “What’s New” page and only includes information sent to the list by the staff of the Government Information Sharing Project. That is, it is an open list for purposes of announcement list, but it is not an open discussion list. One joins the list in the conventional way: send e-mail to listserv@mail.orst.edu with nothing in the “Subject:” line and in the body of the message put GOVINFO firstname lastname.

Government-oriented publications which specialize in information technology are another way to staying current with what is new online. Two leading examples are Government Computer News (http://www.gcn.com/) and Government Technology (http://www.govtech.net/).