U.S. Department of Transportation

Using Science.gov to Access U.S. Government Science Information

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Learning Outcomes

Provide an overview of Science.gov – a federated search tool which enables public access to research results from over 12 U.S. Federal member agencies. Key focus areas will include history and governance of the site, the search technology and how it works, content areas, and latest/upcoming features.

Research results include:

Journal articles/accepted manuscripts, technical reports, conference papers, videos, audio files, images, and other multimedia, scientific and technical data sets and collections.

Science.gov

- Interagency initiative providing public access to the scientific and technical research results from across U.S. federal government agencies.
- Overseen by the Science.gov Alliance and supported by CENDI (a voluntary working group of federal scientific and technical information managers).
- Science.gov member agencies include:

History and Operations

- Launched in 2002, Science.gov provided, for the first time, a single place (one stop shop) to search the government's stores of scientific and technical information.
- In 2004, federated search was implemented, offering real-time relevance ranking of the top-level research results made available by the federal agencies.
- To this day, Department of Energy, Office of Scientific and Technical Information (OSTI), hosts and maintains the Science.gov platform on behalf of the Science.gov Alliance and CENDI.

OSTI.GOV

Search Technology

- Science.gov searches (in real-time) agency content sources (e.g., portals and databases) using federated search - a technology that searches across multiple disparate content sources that are often below the surface web, i.e., deep web.

- Using customized “connectors” that are developed in coordination with the federal agencies, the search will connect to the content source (using snippets of code) based on the search query and return top-level results from all collections in relevance ranked order.

- The search utilizes the content source’s relevance ranked results but will then apply the Science.gov relevance ranking algorithm to return the top results from across all sources subject to the query - this intends to provide a relevant and manageable set of results reducing the need to review more results than necessary.

Science.gov Main Features

- ✓ Full-text searching
- ✓ Advanced Search
- ✓ Clustering
- ✓ Alerts
- ✓ Relevance ranked (top-level) search results which can be filtered by category (Text, Multimedia, Data, and Public Access)
- ✓ Latest Feature: Connectors established for the federal agency public access repositories in response to public access as a federal initiative. Public access results can be narrowed by using the "Public Access" tab.

Types of Results (Results can be narrowed using tabs):

- ✓ Text: technical reports, conference papers, and other textual information.
- ✓ Multimedia: videos, audio files, images, and other multimedia.
- ✓ Data: scientific and technical data sets and collections.
- ✓ Public Access: peer-reviewed scholarly publications (journal articles) resulting from federally funded scientific research.

Latest Feature: Public Access Connectors

- [x] **Public Access - Peer-reviewed scholarly publications resulting from federally funded scientific research**
  - [x] **Agency for Healthcare Research and Quality (AHRQ)**
    Peer-reviewed papers resulting from AHRQ-funded research
  - [x] **Assistant Secretary for Preparedness and Response (ASPR)**
    Peer-reviewed papers resulting from ASPR-funded research
  - [x] **Centers for Disease Control (CDC)**
    Peer-reviewed papers resulting from CDC-funded research
  - [x] **Department of Education Public Access Search**
    Search for Institute of Education Sciences funded research articles at ERIC (Peer Reviewed and Full Text only)
  - [x] **Department of Homeland Security (DHS)**
    Peer-reviewed scientific publications and associated data resulting from DHS-funded research
  - [x] **DOT Public Access Search**
    Search for Department of Transportation funded articles
  - [x] **Department of Veterans Affairs (VA)**
  - [x] **DOD PubDefense**
    DoD PubDefense provides access to journal articles, and supplementary material associated with the the result of DoD-funded research
  - [x] **DOE PAGES**
    DOE-funded journal articles and accepted manuscripts
  - [x] **Food and Drug Administration (FDA)**
    Peer-reviewed papers resulting from FDA-funded research
  - [x] **National Aeronautics and Space Administration**
    Search for National Aeronautics and Space Administration funded research articles at PubMed Central
  - [x] **National Institute of Standards and Technology (NIST)**
    Peer-reviewed papers resulting from NIST-funded research
  - [x] **National Library of Medicine's (NLM) PubMed Central (PMC)**
    NLM's free digital archive of biomedical and life sciences journal literature
  - [x] **National Oceanic and Atmospheric Administration (NOAA)**
    Peer-reviewed literature produced by the National Oceanic and Atmospheric Administration
  - [x] **NSF Public Access Repository (NSF-PAR)**
    Scholarly publications in the National Science Foundation (NSF) Public Access Repository (PAR)
  - [x] **Treesearch**
    Publications by R&D scientists within the USDA Forest Service
  - [x] **USGS Professional Papers**
  - [x] **USGS Scientific Investigations Report**

Search Example

- Full text Search – Monkeypox Virus
- 71 sources searched – See”71 of 71 sources complete”
- Results in all four categories
- Public Access highlighted with 126 top-level results
- Sources listed in “All Collections” dropdown
- To search by specific “Collections,” use “Advanced Search”

Global access

- Science.gov is the U.S. member of WorldWideScience.org – global science gateway comprised national and international scientific databases and portals.
- Search translations are provided for 10 languages.

Case Study: Department of Transportation

- Department of Transportation through its National Transportation Library (NTL) relies on tools like Science.gov to further disseminate its collections of scientific and technical information.

- Mary Moulton, NTL's Digital Librarian, will briefly review NTL's mission/purpose, the content it makes available to the public, and how Science.gov helps achieve their mission which further serves the taxpayer by broadening access to DOT's research results.

About the National Transportation Library (NTL)

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https://transportation.libguides.com/NTLsubjects

Established in 1998 by the Transportation Equity Act for the 21st Century (TEA-21), the National Transportation Library (NTL) provides access to:

- Digital collections
- Data services
- Reference and research services
- Knowledge Networks

NTL is an open access digital repository. All items are in the public domain and available for reuse without restriction.

ROSA P: NTL's Repository & Open Science Access Portal

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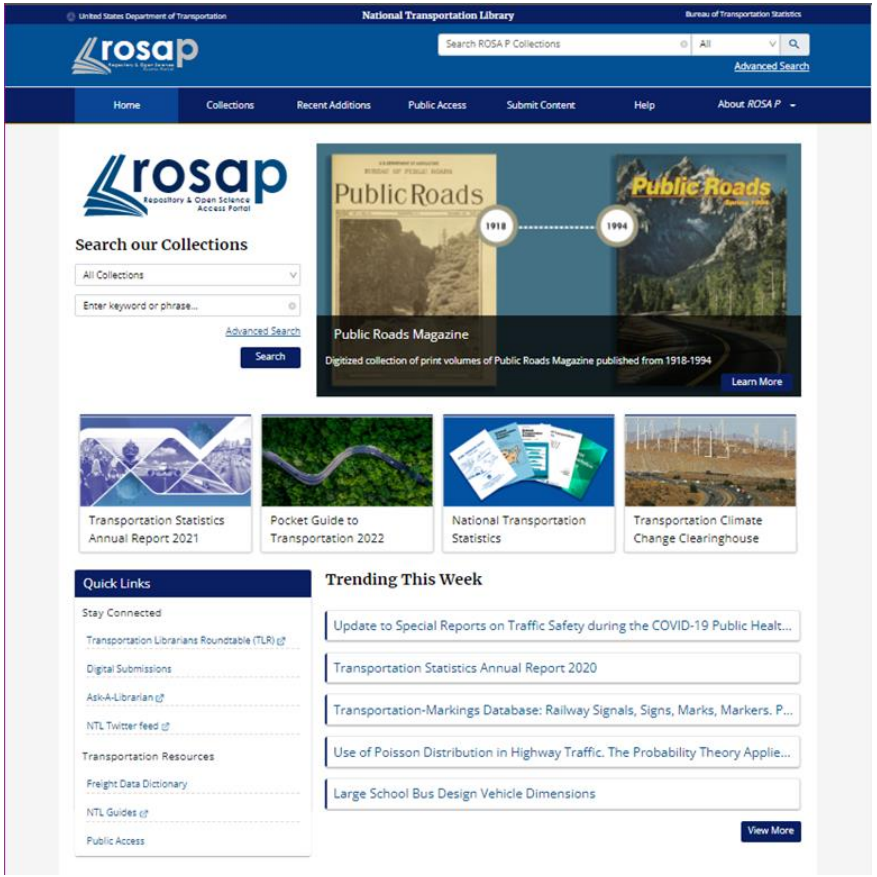
https://rosap.ntl.bts.gov/

Featured Content

- Bureau of Transportation Statistics Publications
- USDOT Public Access Collections
- Historic Special Collections

ROSA P is an open access repository

- Access to publications and digital data is free, immediate and permanent
- Content is available for anyone to use, download and distribute
- Internet search engines index and harvest ROSA P content



ROSA P: NTL's Repository & Open Science Access Portal

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https://transportation.libguides.com/rosap

ROSA P honors Rosa Parks and the role public transportation played during the civil rights movement

LOC Prints and Photographs Division: http://www.loc.gov/rr/print/list/083_afr.html#ParksR
Fair use: https://en.wikipedia.org/w/index.php?curid=3034067

ROSA P and Public Access

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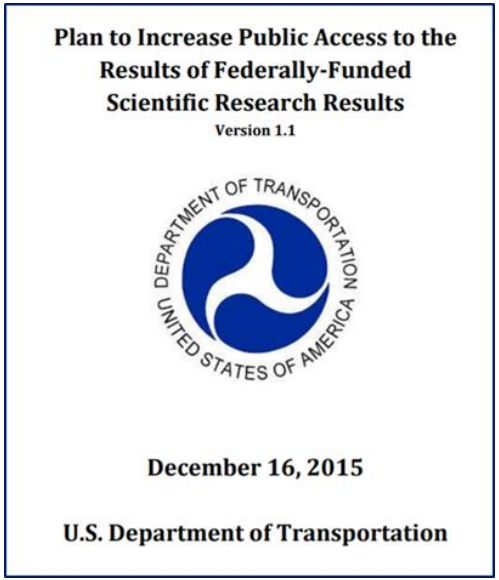
https://doi.org/10.21949/1503646

Public Access means that the public has access to publications and digital data sets arising from federally funded scientific research programs. everyone is able to **freely search, download, and analyze** unclassified publications and digital data sets unless specifically precluded by privacy, confidentiality or other security concerns.

US DOT's Public Access Plan applies to the following individuals:

- All DOT employees, including full- and part-time employees; as well as support service contract employees, consultants and temporary and special government employees.
- Awardees from non-DOT organizations that publish Scientific Research material or compile Digital Data Sets resulting from research and development **programs conducted under a DOT grant, contract, or other agreement.**
- **USDOT's Public Access Plan** designates **ROSA P** as the repository for deliverables of sponsored research.



What is Open Access?

- Because most publishers own the rights to the published articles in their journals, users are required to pay for access and request permission to reuse.
- **Open Access** is unrestricted access and unrestricted reuse of documents copyrighted under a Creative Commons or similar license-type agreement. All items in ROSA P are in the public domain and therefore open access.
- **DOT's Public Access Plan** covers final peer reviewed manuscripts accepted for publication, but not published articles.

What is an Open Access Repository?

- An **open access repository** is a digital platform for research results. Access is **free, immediate and permanent**. Content is available for anyone to use, download and distribute.
- Open Access Repositories follow the Open Archives Initiative Protocol for Metadata Harvesting **(OAI-PMH).**
- **OAI-PMH** allows Search engines to index and harvest the content from open access repositories. These include **Science.gov**, Google and Google Scholar, DuckDuckGo, and Bing.

ROSA P Digital Collections

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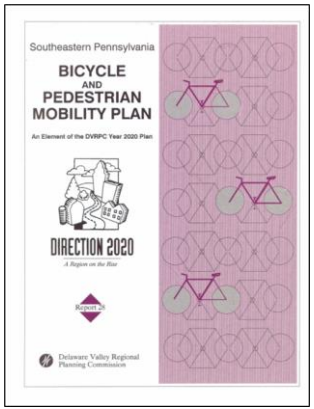
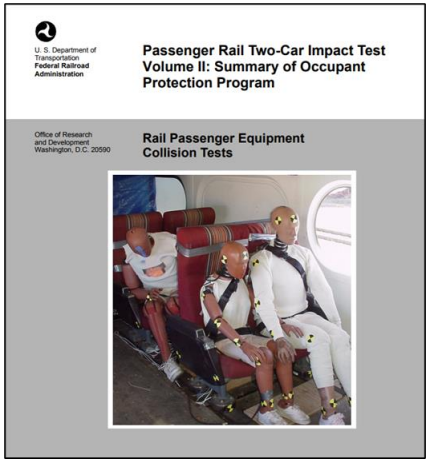
https://rosap.ntl.bts.gov/browse/collections





NTL acquires the following types of digital works

- Digital objects provided by the content creators or owners (a digital object is a unit of information, usually a file)
- Digital copies of physical objects, digitized at the request of NTL

ROSA P contains ~60K digital objects from all modes of transportation and related disciplines

- Sources of materials include USDOT, state DOTs, local and tribal road agencies, university transportation agencies, and other transportation organizations
- Legacy content is collected if it is of historical or national significance

Science.gov Benefits Users and NTL

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Science.gov is a collaborative effort, allowing a small library like NTL to leverage resources of other government agencies

- Transportation research is interdisciplinary and covers diverse topics such as engineering, medicine, behavioral sciences, planning and geography. With Science.gov, searchers don't have to know which agency or repository to target for research results.
- Search logs confirm that ROSA P is not a predetermined destination for most users. Science.gov enables NTL to disseminate research reports, scientific data, and policy documents to a larger audience.

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Thank You!

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