

# Webinar: Using Science.gov to Access U.S. Government Science Information



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# Outline

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- Provide an overview of the federated search functionality offered by Science.gov where over 60 databases, 2,200 websites, and over 200 million pages of authoritative Federal science information can be found in many formats.
- Show new feature for public access to Federally-funded research results (journal articles and accepted manuscripts) will be discussed.

# Science.gov

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Science.gov is an interagency initiative providing a gateway to **U.S. government science information** offering free access to R&D results and scientific and technical information (STI) from the following federal agencies:

- Department of Agriculture (USDA, Forest Service)
- Department of Commerce (NTIS, NIST)
- Department of Defense
- Department of Education
- Department of Energy
- Department of Health and Human Services (NIH)
- Department of Homeland Security
- Department of Transportation
- Environmental Protection Agency
- Government Publishing Office
- National Aeronautics and Space Administration
- National Science Foundation

**U.S. government science information/R&D results and STI include:** Journal articles, technical reports, conference papers, videos, audio files, images, and other multimedia, scientific and technical data sets and collections.

# History, Governance, and Operations

- Launched in 2002, Science.gov provided, for the first time, public search to the government's stores of STI.
- In 2004, federated search was implemented, offering real-time relevance ranking of the research results and STI made available by the federal agencies.
- Science.gov is governed by the Science.gov Alliance, a voluntary group U.S. federal scientific, technical and related departments, agencies and programs.
- The Science.gov Alliance is co-chaired by Department of Transportation and Department of Energy. The Office of Scientific and Technical Information (OSTI) hosts to website and provides the federated search technology.
- Support is provided by [CENDI](#), a working group of high level scientific and technical information managers in science mission agencies.

# Science.gov Main Features



The screenshot shows the Science.gov homepage. At the top left is the Science.gov logo with the tagline "Your Gateway to U.S. Federal Science". Navigation links for "Home", "About", and "STEM Opportunities" are in the top right. A paragraph describes the site's search capabilities. Below is a search bar with a magnifying glass icon and a link to "Advanced Search". Two links are provided: "U.S. Federal Science Agencies' Public Access Plans" and "How To Submit Research Papers to Funding Agencies". A section titled "Science.gov is governed by the interagency Science.gov Alliance. Participating agencies are:" is followed by two rows of agency logos, including USDA, UAS, EPA, NPS, DOI, NIH, NIST, NSF, NASA, and STI.

**Science.gov**  
*Your Gateway to U.S. Federal Science*

[Home](#) [About](#) [STEM Opportunities](#)

Science.gov searches over 60 databases and over 2,200 scientific websites to provide users with access to more than 200 million pages of authoritative federal science information including research and development results.

Enter Search Terms  

[Advanced Search](#)

[U.S. Federal Science Agencies' Public Access Plans](#)  
[How To Submit Research Papers to Funding Agencies](#)

Science.gov is governed by the interagency *Science.gov Alliance*. Participating agencies are:



- Full-text searching
- Advanced Search
- Clustering
- Alerts
- Relevance ranked results which can be filtered by category (where content is available) including:
  - **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.

# Search Technology

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- Science.gov simultaneously searches (in real-time) selected sources using federated search.
- What is federated search? Instead of crawling and indexing static content like Google, Bing, and other popular search engines, or as opposed to Search.gov which searches government web pages, the federated search technology that Science.gov uses, Explorit Everywhere!, queries agencies selected collections and searches them simultaneously. While this usually takes a few seconds longer, it ensures a superior level of top results.
- When the federated search “connects” to these collections, results are aggregated, deduped, and returned in relevance ranked order providing the user with top-level results from all collections. Each result contains an information snippet, a link to the full information and a link to the host agency.
- Links to individual agency repositories (databases and other sources) are provided if users wish to view all results from the sources.

*Why top-level results?* By using federated search, and providing top-level results, users have a greater chance of getting the most relevant results from those sources rather than having to sift through thousands, if not millions of results.

# Search Example

## Basic Search Query: CRISPR



**Science.gov**  
Your Gateway to U.S. Federal Science

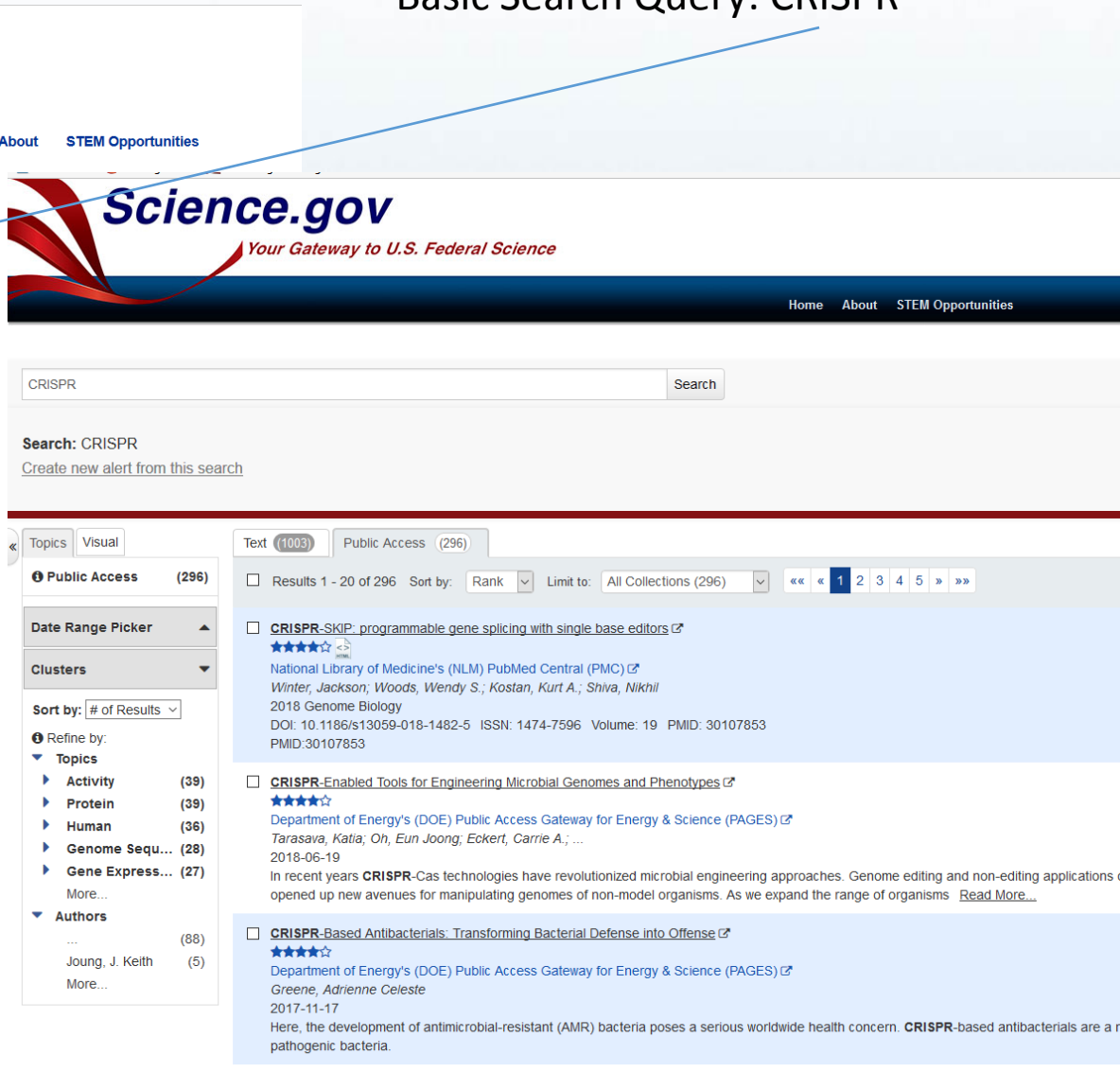
Home About STEM Opportunities

Science.gov searches over 60 databases and over 2,200 scientific websites to more than 200 million pages of authoritative federal science information and development results.

CRISPR

[U.S. Federal Science Agencies' Public Access Information](#)  
[How To Submit Research Papers to Funding Agencies](#)

Science.gov is governed by the interagency [Science.gov Alliance](#). Participating agencies include:



**Science.gov**  
Your Gateway to U.S. Federal Science

Home About STEM Opportunities

CRISPR Search

Search: CRISPR  
[Create new alert from this search](#)

Text (1003) Public Access (296)

Results 1 - 20 of 296 Sort by: Rank Limit to: All Collections (296)

- CRISPR-SKIP: programmable gene splicing with single base editors**  
★★★★☆ (2) National Library of Medicine's (NLM) PubMed Central (PMC) Winter, Jackson; Woods, Wendy S.; Kostan, Kurt A.; Shiva, Nikhil  
2018 Genome Biology  
DOI: 10.1186/s13059-018-1482-5 ISSN: 1474-7596 Volume: 19 PMID: 30107853 PMID:30107853
- CRISPR-Enabled Tools for Engineering Microbial Genomes and Phenotypes**  
★★★★☆ Department of Energy's (DOE) Public Access Gateway for Energy & Science (PAGES) Tarasava, Katia; Oh, Eun Joong; Eckert, Carrie A.; ...  
2018-06-19  
In recent years **CRISPR**-Cas technologies have revolutionized microbial engineering approaches. Genome editing and non-editing applications have opened up new avenues for manipulating genomes of non-model organisms. As we expand the range of organisms [Read More...](#)
- CRISPR-Based Antibacterials: Transforming Bacterial Defense into Offense**  
★★★★☆ Department of Energy's (DOE) Public Access Gateway for Energy & Science (PAGES) Greene, Adrienne Celeste  
2017-11-17  
Here, the development of antimicrobial-resistant (AMR) bacteria poses a serious worldwide health concern. **CRISPR**-based antibacterials are a new class of pathogenic bacteria.

Refine by:

- Activity (39)
- Protein (39)
- Human (36)
- Genome Sequ... (28)
- Gene Express... (27)
- More...

Authors

- ... (88)
- Joung, J. Keith (5)
- More...

# Search Results

- For the search example, CRISPR, there were roughly 1,300 top level results that came back as text, and public access. That includes a combination of technical reports, conference papers, and accepted manuscripts/journal articles.
- The relevance of each result is denoted by stars (more stars indicate greater relevance) that appear beneath the title of each result.
- Up to 100 of the most relevant (top-level) results from each source are returned. Top-level results are those that meet the terms of the search query most closely.

The screenshot shows the Science.gov website interface. At the top, the logo reads "Science.gov Your Gateway to U.S. Federal Science". A search bar contains the text "CRISPR" and a "Search" button. Below the search bar, it displays "Search: CRISPR" and a link to "Create new alert from this search".

The results are categorized into "Text (1003)" and "Public Access (296)". The first result is titled "CRISPR-SKIP: programmable gene splicing with single base editors" and is marked with five stars. It is from the National Library of Medicine's (NLM) PubMed Central (PMC) and lists authors Winter, Jackson; Woods, Wendy S.; Kostan, Kurt A.; Shiva, Nikhil. The second result is titled "CRISPR-Enabled Tools for Engineering Microbial Genomes and Phenotypes" and is marked with four stars. It is from the Department of Energy's (DOE) Public Access Gateway for Energy & Science (PAGES) and lists authors Tarasava, Katia; Oh, Eun Joong; Eckert, Carrie A.; ... The third result is titled "CRISPR-Based Antibacterials: Transforming Bacterial Defense into Offense" and is marked with four stars. It is from the Department of Energy's (DOE) Public Access Gateway for Energy & Science (PAGES) and lists authors Greene, Adrienne Celeste.

On the left side, there is a sidebar with a "Public Access (296)" filter, a "Date Range Picker", a "Clusters" dropdown menu, and a "Sort by: # of Results" option. Under "Refine by", there are sections for "Topics" (Activity (39), Protein (39), Human (36), Genome Sequ... (28), Gene Express... (27)) and "Authors" (Joung, J. Keith (5)).

*Additionally, clustering is provided to give the user a sense of results in particular scientific categories related to the search term*



# Search Example

To see the number of all results for each source, click the “X of X sources complete” to open Search Status at the top-right of the search results page. When you click on the link, you will see the top-level results as well as any additional results (non top-level) that can be found at the source. If you wish to view these additional results, you will need to go to the source to search for those results. Each source name is hyperlinked, and you may navigate to that source directly from the search status box

The screenshot shows the Science.gov website interface. At the top left is the Science.gov logo with the tagline "Your Gateway to U.S. Federal Science". A search bar contains the text "CRISPR". In the top right corner, there is a search status indicator: "(0) [share] [trash] [print] [email] [tools] [info] 72 of 72 sources complete". A blue arrow points from the text "X of X sources complete" in the introductory paragraph to this indicator. Below the search bar, there are filters for "Text (1003)" and "Public Access (296)". The main results area shows two entries, each with a star rating and a link to the source. A "Search Status" pop-up window is open in the bottom right, showing a table of search results from various sources. A blue arrow points from the text "When you click on the link, you will see the top-level results as well as any additional results (non top-level) that can be found at the source" to the "Search Status" window.

**Science.gov**  
Your Gateway to U.S. Federal Science

Home About STEM Opportunities

Search

CRISPR

72 of 72 sources complete

Text (1003) Public Access (296)

Results 1 - 20 of 296 Sort by: Rank Limit to: All Collections (296)

**CRISPR-SKIP: programmable gene splicing with single base editors**  
★★★★☆  
National Library of Medicine's (NLM) PubMed Central (PMC)  
Winter, Jackson; Woods, Wendy S.; Kostan, Kurt A.; Shiva, Nikhil  
2018 Genome Biology  
DOI: 10.1186/s13059-018-1482-5 ISSN: 1474-7596 Volume: 19 PMID: 30107853  
PMID:30107853

**CRISPR-Enabled Tools for Engineering Microbial Genomes and Phenotypes**  
★★★★☆  
Department of Energy's (DOE) Public Access Gateway for Energy & Science (PAGES)  
Tarasava, Katia; Oh, Eun Joong; Eckert, Carrie A.; ...  
2018-06-19  
In recent years CRISPR-Cas technologies have revolutionized microbial engineering approaches. Genome editing and non-editing applications of v...  
opened up new avenues for manipulating genomes of non-model organisms. As we expand the range of organisms [Read More...](#)

**Search Status**

1299 top results from 55489 found in all sources.

Name	Status	0	0
<a href="#">Agency for Healthcare Research and Quality (AHRQ)</a>	✓	0	0
<a href="#">AGRICOLA</a>	✓	85	1134
<a href="#">Assistant Secretary for Preparedness and Response (ASPR)</a>	✓	1	1
<a href="#">Atmospheric Science Data Center</a>	✓	0	0
<a href="#">Cancer.gov</a>	✓	94	257
<a href="#">CDC Stacks</a>	✓	48	48

# Other Features: 1) STEM Opportunities

Science.gov provides access to undergraduate and graduate Scientific, Technology, Engineering, and Math (STEM) opportunities ranging from scholarships, research internships, and graduate fellowships that are federally-funded.

Search STEM areas by:

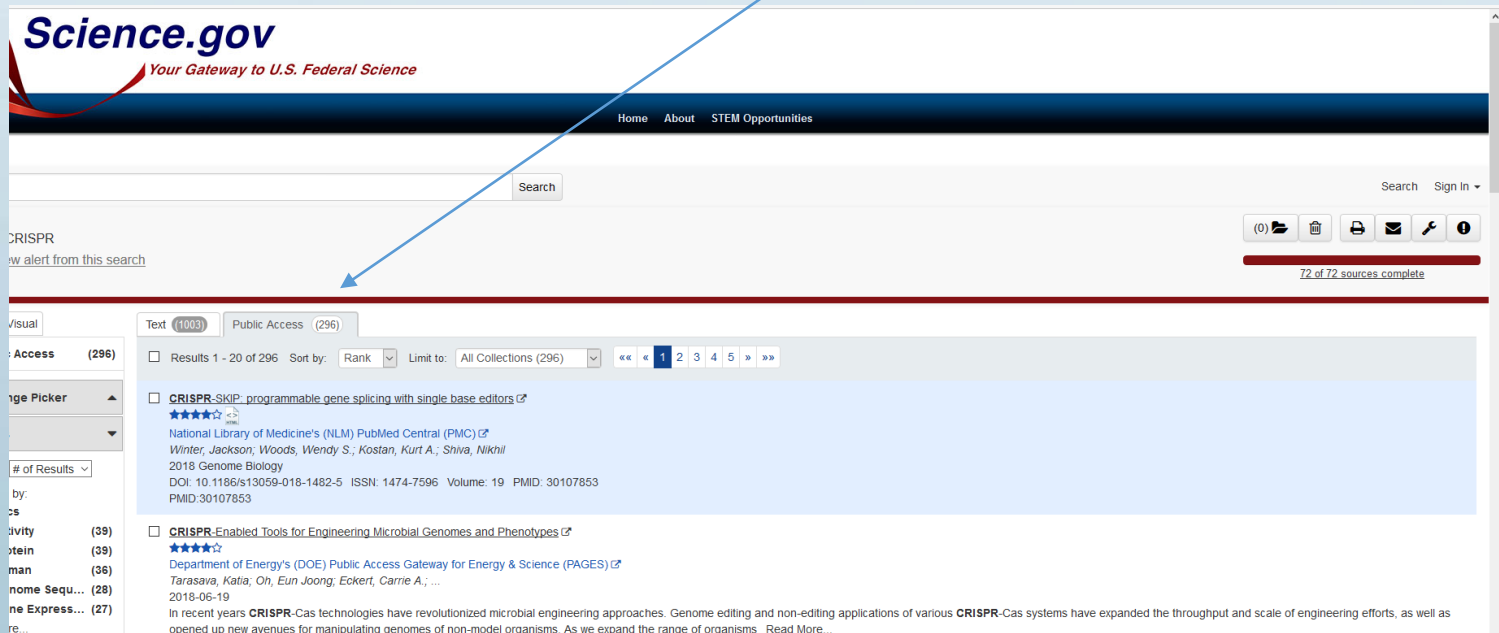
- Program Type
- Discipline
- Location/Geographic Region
- Agency Sponsor

The screenshot displays the Science.gov website interface. At the top, the Science.gov logo is accompanied by the tagline "Your Gateway to U.S. Federal Science". A navigation menu includes "Home", "About", and "STEM Opportunities", with the latter highlighted by a red circle. Below the navigation, a search bar is visible. The main content area features two sub-sections: "STEMUndergrads.science.gov" and "STEMGradStudents.science.gov", both with their respective taglines. A "Narrow Results:" sidebar on the left lists filters such as "Graduate Program Type", "Graduate Level Eligibility", "STEM Discipline Focus", "Institutional Location", "Federal Agency Sponsor", and "Geographic Region". The main content area shows a search result for "Advanced Vehicle Technology Competitions (AVTC)", including a description of the competition and a link to the "Department of Energy (DOE)".

**Students can read descriptions of opportunities and get direct links for applying**

# Other Features: 2) Public Access

- Public Access is a broad federal-wide initiative which aims to increase access to federally funded, peer-reviewed scholarly literature (journal articles and accepted manuscripts) that have been published in peer-reviewed journals.
- Science.gov now provides the ability to limit search results to a category called Public Access. Public Access enables searching of peer-reviewed scholarly publications resulting from federally funded scientific research from the federal repositories supporting public access. Public access results from 15 agencies are currently available.
- You can narrow your search to the public access category of content by checking the public access tab on the search results page:



The screenshot displays the Science.gov website interface. At the top, the logo reads "Science.gov" with the tagline "Your Gateway to U.S. Federal Science". Below the logo is a navigation bar with links for "Home", "About", and "STEM Opportunities". A search bar is visible with the text "CRISPR" entered. To the right of the search bar, there are icons for search, sign in, and other functions. Below the search bar, a red bar indicates "72 of 72 sources complete". The main content area shows search results for "CRISPR". The "Public Access" filter is selected, showing 296 results. The first result is titled "CRISPR-SKIP: programmable gene splicing with single base editors" and is from the National Library of Medicine's (NLM) PubMed Central (PMC). The second result is titled "CRISPR-Enabled Tools for Engineering Microbial Genomes and Phenotypes" and is from the Department of Energy's (DOE) Public Access Gateway for Energy & Science (PAGES). A blue arrow points from the text in the second bullet point to the "Public Access" filter tab.

# Other Features: 2) Public Access

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The Science.gov homepage provides links to more information about Public Access. For example:

- U.S. Federal Science Agencies' Public Access Plans and requirements in those plans are available.

<https://www.science.gov/publicAccess.html>

- Information about agency submission systems: If you are a federally funded author or coauthor of peer-reviewed scientific publications and need to submit your accepted manuscripts to the funding agency(ies) for purposes of public access, you can learn **How To Submit Research Papers to Funding Agencies** from a single place.

<https://www.science.gov/publicAccess.html>

# Global access

Science.gov is the U.S. member of WorldWideScience.org – a global science gateway comprised of national and international scientific databases and portals across 70 countries. WorldWideScience.org, like Science.gov, uses federated search, but users can translate search results in 10 different languages including:

- Arabic
- Chinese
- English
- French
- German
- Japanese
- Korean



# What's Next?

*In support of Public Access*, a new feature will be launched in the upcoming month where users can select to search only the collection of public access results directly from the home page – that is, *peer-reviewed scholarly publications (journal articles) resulting from federally funded scientific research*

The screenshot shows the Science.gov homepage. At the top left is a stylized American flag graphic. The main header features the text "Science.gov" in a large blue font, with the tagline "Your Gateway to U.S. Federal Science" in a smaller red font below it. To the right of the header are navigation links for "Home", "About", and "STEM Opportunities". A central paragraph states: "Science.gov searches over 60 databases and over 2,200 scientific websites to provide users with access to more than 200 million pages of authoritative federal science information including research and development results." Below this is a dark blue search bar with a white input field containing the placeholder text "Enter Search Terms" and a red search button with a white magnifying glass icon. Under the search bar, there is a "Public Access" checkbox with an information icon and a link for "Advanced Search". Two links are listed below the search bar: "[U.S. Federal Science Agencies' Public Access Plans](#)" and "[How To Submit Research Papers to Funding Agencies](#)". A paragraph below these links states: "Science.gov is governed by the interagency *Science.gov Alliance*. Participating agencies are:" followed by two rows of agency logos. The first row includes logos for USDA, UAS (United States Agency for Science), the Department of the Interior, the National Science Foundation, the Department of Energy, and the NIH (U.S. National Library of Medicine). The second row includes logos for the Department of Defense, the Department of Health and Human Services, the Department of Agriculture, GPO, NASA, and the National Security Agency.

# Questions/Discussion

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## More Information or Interested in joining Science.gov?

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