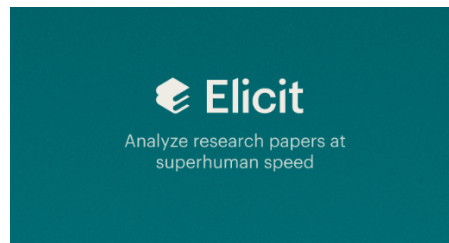


Researching Topics using AI: Your New Research Assistant Elicit



Introduction

Elicit is considered an AI research assistant. It is a tool that consolidates scientific literature in a concise format, usually highlighting the top four to ten articles on a topic. It is very user-friendly and allows the user to ask questions, without having to focus on “rules” associated with proper formatting to get at your articles. Many other databases are “finicky” requiring perfect keyword matching, but Elicit adapts based on language models to automate part of a researcher’s workflow. Once you get your first set of articles, you can probe additional questions, which can make Elicit even more powerful.

Elicit pulls publications from Semantic Scholar, a free AI-powered research tool for scientific literature, and quickly helps you with the literature review process, highlighting very specific and helpful articles for your topic.

Elicit is ideal for questions that have empirical research that follow the scientific method and responds great to generally structured questions such as “What happens to X when Y is added” or “Does X affect Y?”

The objectives of this activity are to:

- introduce you to the AI research assistant tool Elicit, and
- to explore the literature on the topic of cells or some related topic to BIO 183 content

Procedure

1. Navigate to the Elicit AI research tool found at elicit.org
2. You may need to create a free account if you haven’t used this site before.
3. Make sure the third tab “Quick search” is selected and then in the white box you can ask your research question.
4. Think of something related to cells and their roles in biological processes that is of interest to you. Enter your chosen question into that white search box. Experiment with different phrasing if your initial search doesn’t yield relevant results.
5. If you are “stuck”, you might consider selecting one of the following questions to investigate:
 - a. Is gene therapy an effective treatment for human illness?
 - b. What are the key structural differences between saturated and unsaturated fatty acids, and how do these differences affect the properties of cell membranes?
 - c. How does the molecular structure of DNA enable it to store and transmit genetic information?
 - d. How do enzymes catalyze biochemical reactions within cells, and what factors can influence their activity?
6. After you type in your question, examine what papers appear for you. You will notice on the left side the title of each paper along with a source button and a DOI button. See screenshot below for an example.

☐ Paper

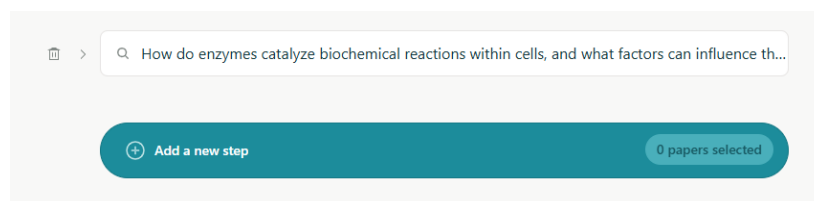
☐ Gene therapy comes of age

👤 C. Dunbar +5

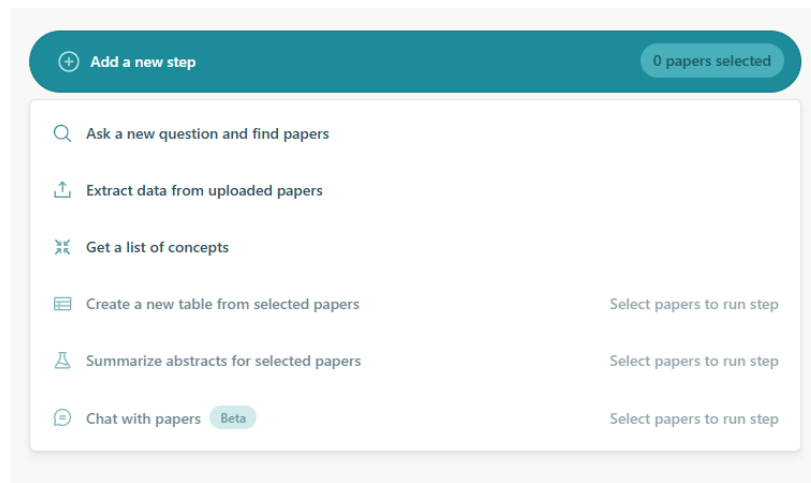
📄 Science

2018 · 999 citations Source ↗ DOI 🔗

- a. The source button, once clicked, should open up in a new tab with that reference article.
 - b. A DOI is a Digital Object Identifier, which is a unique and persistent alphanumeric string assigned to a digital object. It is kind of like a barcode or a web address. If you click on it or type in the DOI you will be sent to the web page that contains the article.
 - i. You might want to look for the DOI on the actual paper itself when you get to it. When citing a paper in a reference section, you should also include this information as well.
7. Also notice from the information on the paper that you can see the journal article (e.g. Science) as well as the number of citations (e.g. 999) and the year of publication (e.g. 2018). This can help you as well. For example, the journal Science is one of the most respected journals and close to 1000 people have cited this article in their papers. This tells me that this is likely a paper I want to check out.
 8. On the right side there is a short abstract summary.
 9. Also notice that under the white question search box, Elicit summarizes the top 4 papers it found. That can be very helpful to read as it often can provide a summary of what is out there in the literature in general.
 10. Using both the title and abstract summary, decide on one source to explore in depth. Go to that source by either clicking on the source button or by copying and pasting the title and author into NC State's library database.
 11. Once you get to the article, browse through it and see what types of information you see in the article. Is there something that "pops" out to you? Read the abstract – is this an article that may be of interest to you?
 12. Save this article. You will use it in the next step where we are going to extract its data.
 - a. Note – you may have to check your access and then log into NC State's database. You may also have to select a general access like "US Higher Education (InCommon)" first or you may have to go to NC State's library's database and copy and paste the title and author to get access to the paper.
 13. Return to Elicit. At the top of the page, where you typed in your question, notice a ">" symbol. Click on that. Notice you will add another green/blue strip that states "'+' Add a new step". See screenshot below.



14. Select the "+" symbol on this new strip and see several choices appear:



Notice only the first three are available to free subscribers. Select “Extract data from uploaded papers”, upload your saved paper and then click on the “→” symbol.

15. Notice on the right side in the “Manage Columns” area there is a command that states “Describe what kind of data you want to extract”. Type your answer in that box. You can also click on the “+” to add something like “main findings”. Play around with this.
 - a. First, add Main Findings
 - b. Then, type in in “treatment results” and submit
16. What are you learning about your topic? Do you like how Elicit works? What aspects of it do you find helpful?

Note: Some journals are in a format that is more summary and doesn’t contain a lot of data. These journals are Science, Nature, Nature Communications, Proceedings of the National Academy of Sciences (PNAS), and Cell. These journals are all very prestigious but they publish concise summaries, emphasizing main findings and their significance. Data are often referenced elsewhere or available in supplementary materials. For this reason, for the purposes of this activity, avoid using an article from one of these journals.

Questions/Reflection

Work in groups of 2 or 4 students to answer the following questions. Talk to each other and learn more about your group as well as Elicit as a tool. You won’t be turning in these questions for credit, but we will come back as a larger group and have groups report out their answers so you may want to jot down some notes.

1. As you were scrolling through the articles, were there certain things that stood out to you more than others? What were they? What does this tell you about how an article is organized? If nothing stood out to you, what would have been helpful to you to highlight in an article? Explain.
2. How did using Elicit as a tool help you in finding information relevant to your question compared to a traditional search engine (like Google or a library’s database)?
3. What were the strengths and limitations of using Elicit as a tool for this task?