

**Question 1: Consider your last search. List your keywords and search engine. How many results did it give?**

For my most recent search, I used Google Scholar as the search engine, with the search phrase "what topics are needed in undergraduate life science statistics education." This search returned an extremely large number of results (approximately 931,000) likely because the query was phrased as a natural-language question rather than using more targeted keyword combinations or quotation marks around specific terms. While the breadth of results suggests low specificity, the top results that appeared were still highly relevant to the focus of this study, surfacing key sources discussing core statistical competencies and curriculum content for undergraduate life science students.

**Question 2: Give the citation of an "ideal" result from your last search. Review its keywords and subject headings. How could you adjust your keywords to locate more papers like this one?**

The citation of an "ideal" result from my last search is "Baldi, B., & Utts, J. (2015). What your future doctor should know about statistics: must-include topics for introductory undergraduate biostatistics. *The American Statistician*, 69(3), 231-240.", including keywords "statistics", "introductory", "undergraduate" and "biostatistics". In the future, I could adjust my keywords to include more "biostatistics" specific terms, since biostatistics is a common bridge field between statistics and life science, in addition to continuing to use key words such as "undergraduate". "Introductory" is another key word I had not previously considered integrating into my searches which may be relevant for finding information regarding statistics education for those not in quantitative disciplines such as mathematics, computer science or statistics.

**Question 3: What new insights or skills did your literature searches so far help you develop?**

My literature searches helped me get better at refining search strategies based on how relevant the results were, rather than sticking with one fixed query. I learned to notice when a search was too broad or too narrow, and adjust by adding or swapping out key terms, like including "life science" or "biostatistics," or testing whether "introductory" made a difference. I also saw how keyword based searches versus natural language questions changed both the number and specificity of results.

These searches also helped me narrow my overall research focus, moving from general statistics education toward the more specific intersection of first year learning, AI tools like ChatGPT, and curriculum needs for life science undergraduates. Looking closely at sources like Baldi and Utts (2015) also showed me how to judge relevance not just from the content of a paper, but from its keywords and subject framing, which can guide future searches. This process made me better at doing literature searches as an ongoing, reflective process instead of a one time task.

**Question 4: *What are your next steps? How will you further develop or strengthen your work?***

My next steps are to bridge learnings and takeaways across the different search results to narrow the scope of my research in a way that aligns with the topic of statistics education in the life sciences. I also plan to further annotate the readings I've collected so far, and to explore other types of search engines beyond Google Scholar.