



# Creating Online Tutorials: A Way to Embed Research Instruction into Distance Learning and Traditional Classes

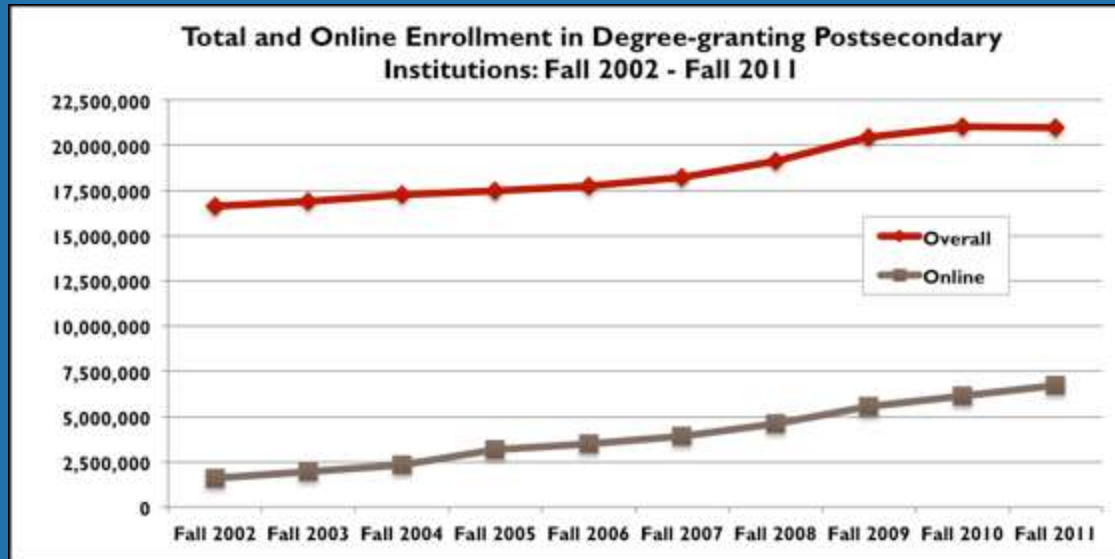
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Information Literacy (ECIL)

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# Distance Education



Total student enrollment increased from 11.7% in 2003 to 32% in 2011 (Sloan Report, 2012)





# Challenges?

Library instruction and distance courses

- PSY-279 Psychology and Law
- CHE-214 Organic Chemistry





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Working Together Puzzle  
<http://commons.wikimedia.org>

Collaboration Between Librarians And Teaching Faculty Crucial





# Technologies

- Captivate 
- Camtasia 
- Movie Maker (free)
- Photo Story 3 (free)
- Wink (free)





# Example of Storyboard for PSY-279

Lexis-Nexis Academic database will be used to demonstrate the search strategies using the operators and, or, not. After following steps outlined in slides 2-4, click on the link to Lexis-Nexis Academic, login with your easypass account information, and the database home page appears. Click the News tab in the left hand top of page.

The screenshot shows the LexisNexis Academic database interface. Annotations include:

- A box labeled "Name of database" with an arrow pointing to the "LexisNexis Academic" header.
- A box labeled "These five tabs contain specific types of information; click the News tab to access domestic and international newspapers." with an arrow pointing to the "News" tab in the navigation menu.
- A box labeled "Enter search terms in box, press 'search' button." with an arrow pointing to the "Search" button next to the search terms input field.
- A box labeled "Additional help available" with a bracket pointing to the "View tutorials" section on the left sidebar.
- An arrow points to the "Specify date" dropdown menu, which is currently set to "Previous 2 years".



## Psychology-279 (Psychology and Law):



- Course-Integrated library instruction tutorial developed
- Six modules created initially; now 9 modules plus quiz to review IL skills & is non-graded
- Feedback Survey led to revisions

## Chemistry-214 (Organic Chemistry II):

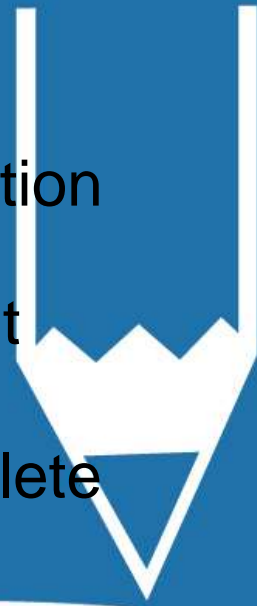
- Research paper assignment and tutorial developed together
- Six modules -> 12 modules-> 14 modules
- Graded quizzes and Feedback Survey guided changes to modules





# 1<sup>st</sup> Generation Selected Student Feedback Of Tutorial

- SciFinder had none of my sources available. I found Science Direct to have much more relevant information.
- Every article that was good to use was not available. I had to buy a copy if I wanted to use it. Until the library can update their science journals don't assign a research paper
- The history was very hard to find.
- The professor and librarian should hold an information session for how to use SciFinder. That way if a student has a question they can be addressed right there instead of having to wait for office hours.
- My reaction had very little information on the complete mechanism







# 1<sup>st</sup> Generation Selected Student Feedback Of Tutorial

- **Address significance of SciFinder and its utility vs. Science Direct and PubMed information.**
- **Improve module on inter-library loan**  
Every article that was good to use was not available. I  
**Design an assignment that has modular benchmarks**  
Research papers  
**Address types of literature, articles, and their utility**
- **Further enable class access to tutorial with an optional out-of-class instruction session, as well as stress the importance of the tutorial**  
The history was very hard to find.
- **Better align the assignment design with the intended usage of SciFinder so it is required**  
The professor and librarian should hold an information session for how to use SciFinder. That way if a student has a question they can be addressed right there instead of having to wait for office hours.
- **My reaction had very little information on the complete mechanism**



# Spring 2013 Assignment

# Due Dates

## Choose a Disease Area

1. Background: history, politics, economics, and other global health issues

**Feb 1 & 8**: Optional SciFinder tutorial sessions

**Feb 14**: Topic approval

2. Biological Information: mode of transmission, biological mechanism, and symptom expression

**Feb 25**: Print copy of one primary literature source

3. Pharmaceutical Treatment: biological activity and structure-activity relationship of potent pharmacophore

**Mar 21**: Annotated bibliography for all sections

4. Total Synthesis: overall scheme of one total synthesis approach from commercially available starting materials with key intermediates

**Mar 23**: Mid-term SciFinder evaluation & quiz

5. Mechanisms: Complete electron-pushing arrow mechanisms (and descriptions) for two synthetic steps using chemical drawing software

**April 8**: Rough draft

**April 18**: Completed peer review on Turnitin.com

6. Derivatives: Descriptions, drawings, and biological profiles of some important derivatives

**May 9**: Final draft & final SciFinder quiz

7. References: Taken from the primary literature





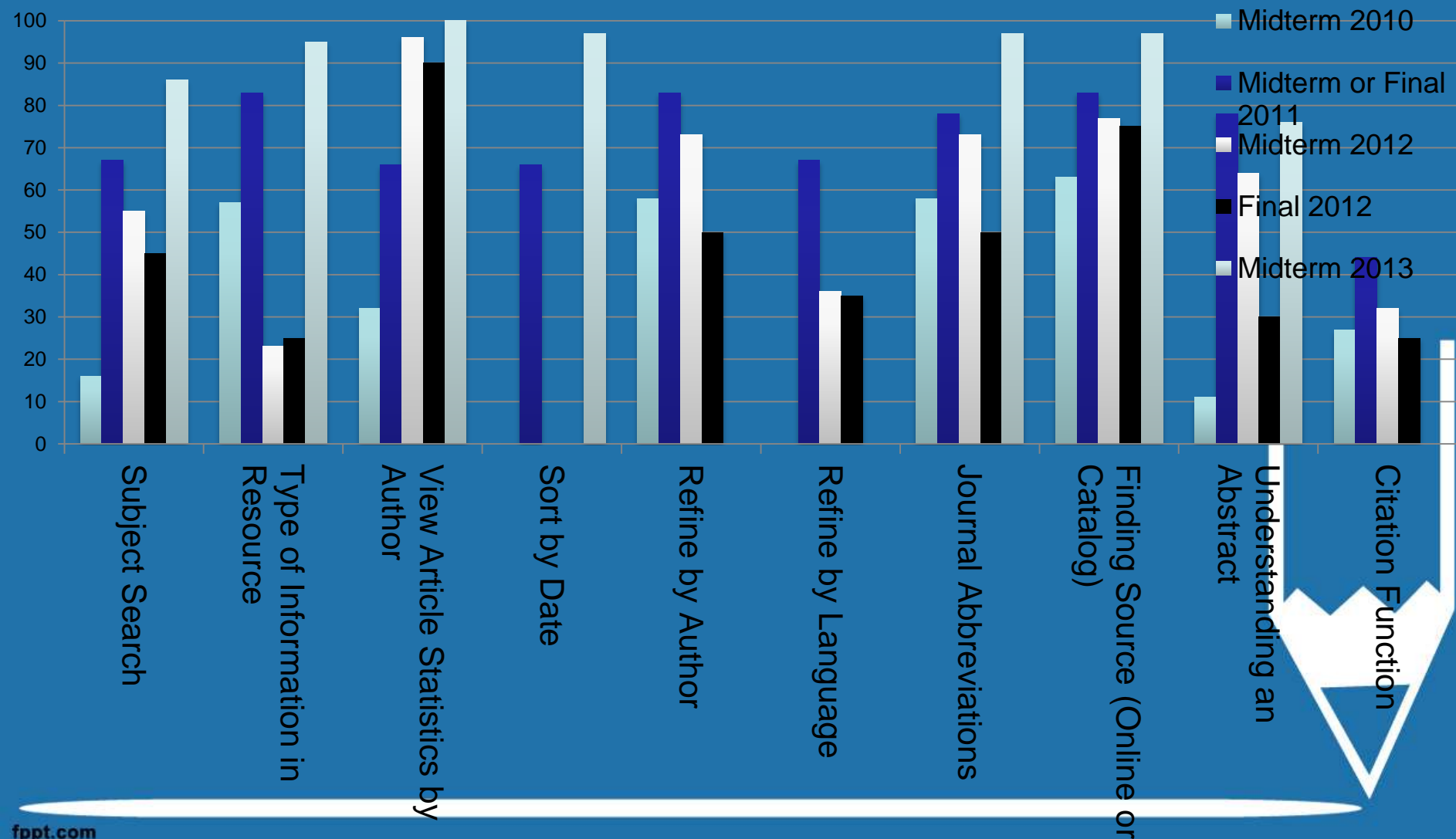
# Student Proficiencies

## Mid-Semester Blackboard Quiz:

- 20 Organic Chemistry II students
- 10 up-to-date prompts with multiple choice answers
- Questions require students to access SciFinder and demonstrate ability to search efficiently for relevant articles

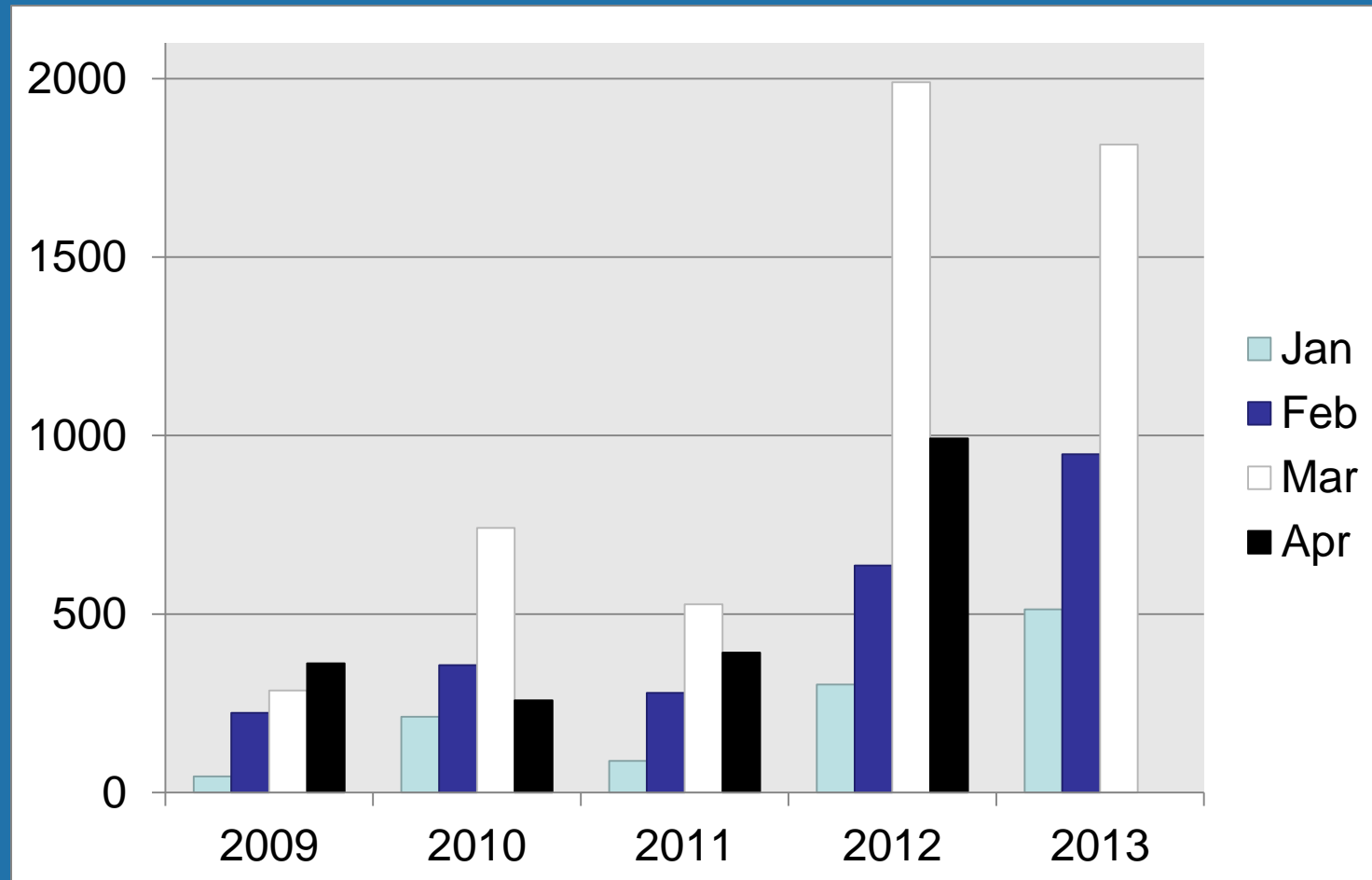


# Select SciFinder quiz statistics 2010-2013





# SciFinder USAGE Statistics 2009-2013

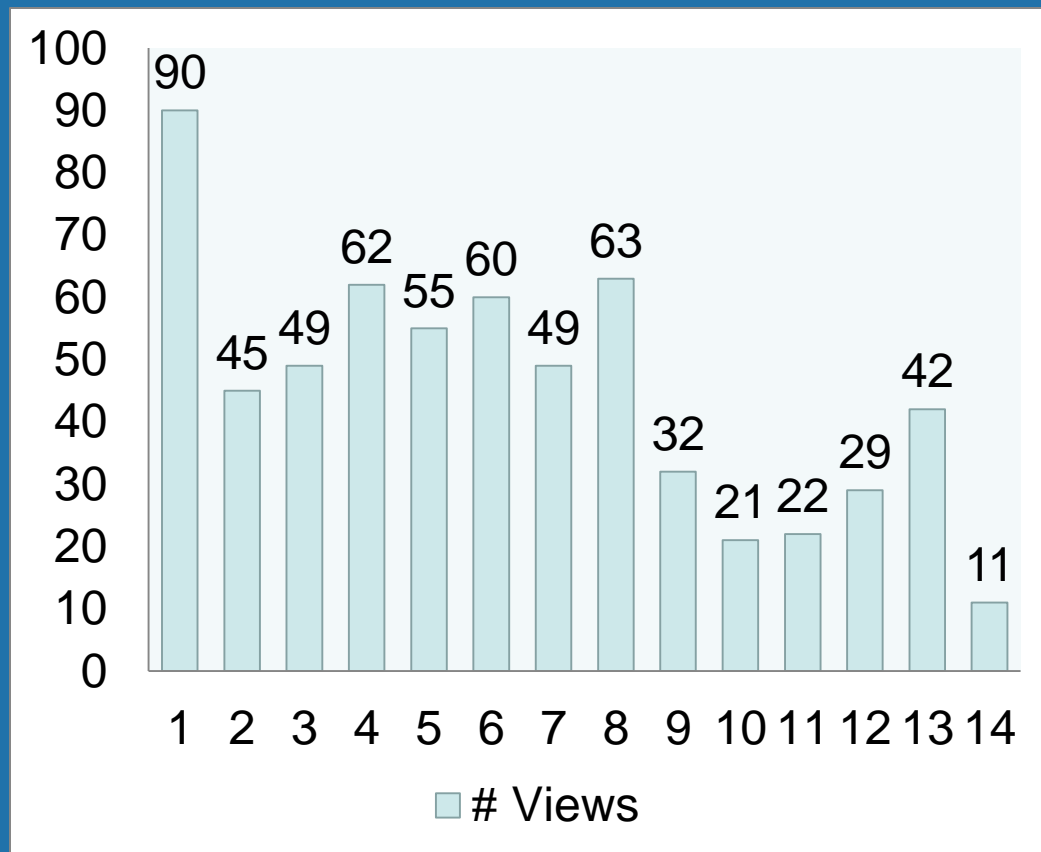




Module #	# Views	Total Minutes watched	Average View Duration	Length of video	% of video watched
1: Intro	90	155	1:46	3:56	45%
2: Accessing	45	104	2:21	3:37	65%
3: Accessing from Off Campus	49	49	0:59	1:14	80%
4: General Searching	62	254	4:10	6:10	68%
5 Refining Searches	55	265	4:49	6:28	74%
6 Getting Articles at Rider	60	311	5:14	8:30	62%
7 Getting Articles not at Rider	49	173	3:32	6:38	53%
8 Document Types	63	172	2:46	5:34	50%
9 Chemical Journals & Abbreviations	32	37	1:12	1:40	72%
10 Searching by Chemical Substance	21	108	5:10	6:46	76%
11 Searching by Chemical Structure	22	72	3:16	5:15	62%
12 Searching by Reaction Scheme	29	125	4:24	7:32	58%
13 Reading Scholarly Journal	42	143	3:34	6:27	55%
14 Citations	11	20	1:53	4:25	43%



Module #	# Views
1: Intro	90
2: Accessing	63
3: Accessing from Off Campus	62
4: General Searching	60
5 Refining Searches	55
6 Getting Articles at Rider	49
7 Getting Articles not at Rider	49
8 Document Types	45
9 Chemical Journals & Abbreviations	42
10 Searching by Chemical Substance	32
11 Searching by Chemical Structure	29
12 Searching by Reaction Scheme	22
13 Reading Scholarly Journal	21
14 Citations	11



## 2<sup>nd</sup> & 3<sup>rd</sup> Generation Tutorial Modules



1. Introduction
2. Accessing & Registering for SciFinder
- 3. Off-Campus Access**
4. General Searching on SciFinder
5. Refining Searches
- 6. Finding References at Rider**
7. Finding References Not at Rider
- 8. Document Types**
- 9. Chemistry Journals & Abbreviations**
10. Searching by Chemical Substance
- 11. Searching by Chemical Structure**
- 12. Searching by Reaction Scheme**
- 13. How to Read a Scholarly Article**
- 14. How to Cite a Chemical Resource**

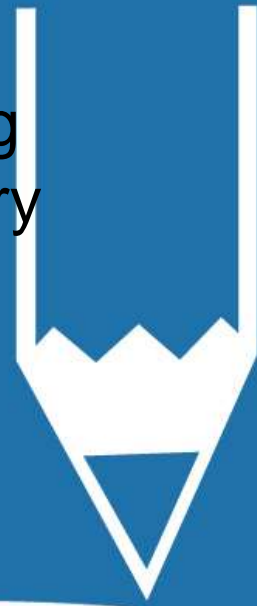




# Student Feedback – Tutorial



- It had a lot of good tips on how to refine your search and suggested ideas I had never even thought of.
- The ability to pause and follow along with the tutorial made it easier to use SciFinder on a step-by-step basis.
- It mirrored what I would actually come across using SciFinder, and the screen highlighted the necessary actions.



# Student Feedback – Research Paper



- The research paper was interesting to find out about a drug and how it relates to the body. The outline due dates really help to stay on top of the assignment.
- My previous understanding of drug activity in the body was very limited. Now I understand structure-function relationship...I did enjoy researching my project because it summarized everything we've been doing since first semester in a neat package. It was a great way to finish off the semester.
- Was useful to read some literature and see how our reaction was used in industry or how it applies to life.
- I did find it interesting and it helped me find out more about organic chemistry in medicine/pharmaceuticals.

# Summary



- It is relevant, effective, and logistically facile to incorporate chemical information instruction into an Organic Chemistry II course.
- Assignment must be modular and require students to use CAS (and a chemical database) to search the primary literature.
- Without isolated in-class instruction, it is prudent to develop a visual, step-by-step tutorial that enables efficient database searching.
- Tutorial should be put into context with institution's individual resources.
- Tutorial should include all aspects of information literacy, including instructions for proficient use of literature.





# Questions





# Reference

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Dawson, P. H., Jacobs, D. L., & Yang, S. Q. (2010). An online tutorial for SciFinder Scholar for organic chemistry classes. *Science and Technology Libraries Journal*, 29(4), 298-306. doi:10.1080/0194262X.2010.520251

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