This introductory session focuses on finding references by starting with a keyword search.
In this session, you will gather background information for a hypothetical research project to see how you can use SciFinder to answer some common research questions.

First, you will design an effective search query and refine the results to identify the most relevant answers.

Then, you will use various SciFinder tools to find information to answer questions related to the project.
These materials are divided into three parts during which all of the questions get answered. You will learn some techniques in each part and can practice at your convenience.
In Part 1, you want to find the references that pertain to your search topic. You will learn to:

- Create an effective keyword search
- Remove duplicate references that are found in both SciFinder databases
- Use the Refine feature to narrow an answer set
Your search strategy

Find methods used to clean up an oil spill in the ocean.

- Identify the main concepts
  - Clean up
  - Oil spill
  - Ocean
  - Method

- Start with a broad search of 2-3 concepts and refine later with additional concepts
  - Search the singular form of words since SciFinder® automatically retrieves plurals

- In this example, you want to find documents about methods used to clean up an oil spill in the ocean.
- You will work with four concepts: clean up, oil spill, ocean and method.
- You will begin with a search query which contains three of these concepts and later use the fourth concept to refine the answer set.
• When you login to SciFinder, the Explore REFERENCES: RESEARCH TOPIC page is the default. Here, you will create a keyword search to find references related to the topic of your project.
  • You can initiate a literature search with any of the REFERENCES options on the left, or initiate a SUBSTANCES or REACTIONS search. Click the type of search and the corresponding entry window will appear.
• Notice the SciFinder Help in the upper right corner. Click the drop down arrow to access the online Help, Training (on the cas.org website), What's New, and Contact Us.
To find references about your topic, start with a keyword search.

The best initial searches include two or three concepts combined with prepositions.

- The prepositions are not part of the search results. They help SciFinder identify the concepts you want to search.

Tips for specifying research topics are available in the online help.

- To access help, either click the “?” in the blue circle or the SciFinder Help drop down menu.

Click Advanced Search if you want to narrow your search by additional criteria, such as Publication Years and Document Types.

- Unless you are looking for a very specific document, it is generally recommended that you begin with a broad search, and later refine your answer set.

- All of the options available in the Advanced Search are also available later in your SciFinder session.

In this example, three concepts are combined with prepositions: clean up of oil spill in ocean.

- You do not need to use truncation, also called wildcards, to retrieve alternate word forms because SciFinder does it for you automatically.

Click Search.
SciFinder separates the search query into concepts and then assembles a list of candidate answers based on:

- Combinations of the concepts
- Their relationship to each other (whether they are closely associated with one another or present anywhere in the reference)

The identified concepts are in bold type.

- For the term “clean up”, the word “up” is ignored since it is so common.
- A useful answer set for further exploration is often one which contains all of the concepts anywhere in the reference.
  - All of the concepts closely associated with one another means that all three concepts must appear in the same part of the record, such as the title, abstract or a single index term. This answer set is useful if you want to work with a smaller answer set of very relevant records.

- Select one or more of the candidates, and then click Get References to see the reference answer set.
• The answers are sorted by **Accession Number**, a unique record identifier that begins with the year that the record was added to the database followed by a sequential number (e.g., 2012:1200005).
  - The blue arrow pointing down indicates that the **most recent answers are displayed first**.
  - If you want to see the oldest records first, click the arrow to reverse the sort order.
• Below the **Sort by** options, you can see the number of references in the answer set.
  - Click the box to left of the answer number to select it for saving, exporting or other activities.
• Above your answers on the right side of the page are the **Display Options** link and the page controls.
  - Click the link to change the number of answers that appear on a page, as well as what is displayed (no, partial or full abstract).
• Words that match the search criteria are highlighted in the title and bolded in the abstract.
• To save you time, SciFinder automatically recognizes and retrieves synonyms (e.g., marine and sea for ocean) as well as related word forms (e.g., cleaning, clean and clean-up for clean up).
• To the left of your reference answer set, you see **Analyze** and **Refine** tabs and a **Categorize** button. You will work with those options later.
Above the toolbar, you see the steps taken in your search. This navigation path is also called the “breadcrumb” trail. It tracks the history of your search.

Place your mouse cursor over a breadcrumb entry to see a tool tip. The tool tip contains information about that step.

In this example, the tool tip shows you that the records come from two bibliographic databases: CAplusSM and MEDLINE®.

- CAplus is the Chemical Abstracts Plus database. It is updated daily and more than one million records are added to the database every year.
- MEDLINE is the MEDlars OnLINE database from the U.S. National Library of Medicine.
- Some MEDLINE references are often duplicates of the references found in CAplus, since common journals are included in both databases. MEDLINE does not cover patents.
- You can easily remove the duplicate MEDLINE records.
• Select Tools > Remove Duplicates to remove the duplicate MEDLINE references from the answer set.
  
  • Notice on this Tools menu that you could also Combine Answer Sets or Add Tag. If you click either of these options, a dialog window appears. You can complete the information in the dialog window if you want to take advantage of these features. Consult the SciFinder Help for additional information.
• The yellow status bar displays the number of duplicate records that were removed.
• You can set a SciFinder preference to automatically remove the MEDLINE duplicates when a search is performed.
• Click Preferences in the status bar to view and edit them.
• Check the box for **Remove Duplicate References**. SciFinder will automatically remove the duplicate MEDLINE records when a search is conducted.
  • This step is automatic on answer sets that contain up to 10,000 records.
• Other preference options are also available:
  • **Password and Account Information**: This link opens the myCAS page where you can change your SciFinder password and update your account information.
    • When you click this link, you should automatically be logged into my CAS.
    • If auto-login does not occur, use your SciFinder login ID and password.
  • **Keep Me Posted Notification**: Keep Me Posted automatic alerts are addressed later in this workbook. This preference tells SciFinder to send you an email notification when new records related to your topic of interest are added to the SciFinder databases.
  • **My Suppliers**: You can manage preferred suppliers for chemical substances and reactants.
  • **Starting Page**: When you sign in, the Explore References page is displayed by default. If you most frequently conduct substance or reaction searches, you can select a different default starting page.
• Click **OK** to update your **Preferences** and return to your active session.
Since your answer set contains more than 500 records, you can use the fourth concept, **method**, to both reduce the number of records and find answers that better meet the needs of this hypothetical research project.

- **Refine** is a useful way to narrow the answer set by criteria that you specify.
- Select the **Refine** tab and then select a **Refine by** radio button. Text boxes for entering criteria will appear below the radio button options.
- In this example, refine the current answer set by specifying additional **Research Topic** criteria.
  - Use the fourth concept, **method**, as the search criteria.
  - To be sure that SciFinder looks for a synonymous term, **process**, type it and then enclose it in parentheses. You could enter up to three synonyms in one set of parentheses, separated by commas.
  - You can also specify synonyms in your initial search, if desired.
  - If you review your answers and notice that SciFinder did not automatically include a synonym, you can revise your keyword query and rerun the search.
You now have a good answer set about your research topic. Both the original search terms and the refine terms are highlighted in the titles and abstracts. In Parts 2 and 3, you will answer the remaining questions for this hypothetical research project.
In this session, you will learn to answer the questions:
• How can you automatically stay updated on this topic?
• Which references have been cited the most?
• How many patents are there?

You will also learn how to retrieve the full-text of most patents.
• Recall that SciFinder bibliographic content is updated daily.
• To easily stay up-to-date on the latest information on your topic, you can choose to receive automatic notifications when new records related to your search topic are available in SciFinder.
  • A Keep Me Posted (KMP) can find new answers for a search on a weekly or monthly basis.
  • SciFinder will notify you when new records that meet your search criteria are added to the database.
  • If the Create Keep Me Posted Alert icon is not present or is grayed out, then you have taken a step—such as an Analyze or Categorize—that precludes the creation of a KMP.
  • See SciFinder Help or contact CAS Customer Care (help@cas.org) if you need assistance creating a KMP.
• Click the Create Keep Me Posted Alert icon to open the dialog window.
• The yellow status message indicates that some steps, such as a sort, will not be part of the KMP but you can still set up a KMP for your search.

• Enter a Title and optional Description.

• Specify the Duration. By default, the KMP will expire one year after its creation.
  • To select a shorter duration, click Change.

• Select the Frequency. The KMP can be run each Week or each Month.

• By default, results will include previously retrieved references that have been updated since they were originally retrieved. Check the box for Exclude previously retrieved references to exclude these references.
  • Bibliographic information from nine major patenting authorities is added to the database within two days of a patent being issued. The scientific indexing is added within 27 days of issuance. If you check this box, you will not see the indexing when it is added to these patent records.
  • In general, it is best to not check the box so that you see updates and errata.

• On the right, SciFinder tracks the Search Strategy of each answer set.

• Click Create to activate the KMP.

• The alert is set to run automatically and you are returned to your active session.
  • Recall: To receive an e-mail notification about the results when the KMP is executed, you need to check the option Receive e-mail notification of Keep Me Posted results on the Preferences page.
  • When you receive a notification, sign in to SciFinder to view the results.

• For more information, click the blue circle with the question mark to open the context-specific online SciFinder Help.
Online SciFinder Help opens in a separate window or tab.

- The online **SciFinder Help** provides detailed information.
- The help launches in a separate window or tab (based on your browser settings).
- When you are finished with the help, you can navigate back to your active SciFinder session.
• You can identify influential authors in this field two ways.
  • One way: look at the Analyze tab to see which authors have published the most documents.
    • The top ten authors and the number of references attributed to them are shown with analysis bars.
    • To see the references attributed to a single author, click the blue bar associated with the author’s name.
    • To see all of the authors, or to select references for more than one name, click the Show More button (not shown).
  • Another way: Sort by: Citing References to see whose publications have been cited most frequently.
- The answer set is sorted so that the most frequently cited references appear first.
- To see the references that cited a specific document, click the number and icon to the right of the title.
  - If you click the molecule icon, you will see a list of the substances which are important to the science in the document.
• One of the questions you want to answer is “how many patents are there?”
• Analyze makes it easy to answer the question and to narrow your answer set.
• To see how many patents are in your answer set, click the drop-down arrow and select Document Type.
• The top ten document types and the number of references for each type are shown as analysis bars.
  • The document types shown in all capital letters (e.g., JOURNAL ARTICLE) are from MEDLINE only.
• Click the Patent analysis bar to display only the patent references.
• Below the top navigation bar, SciFinder provides a yellow status bar. It confirms that only the patent references are now displayed.
  • Note, however, that the number of references in the answer set has not changed.
  • To return to the complete answer set, click Clear Analysis.
  • To keep the patent references as the new answer set, click Keep Analysis.
• The Analyze feature is a useful way to learn more about your answer set. Since you can clear an analysis after reviewing the results, you can explore the answer set several ways before deciding how you want to narrow it.
• With Analyze you can preview the results before reducing the size of the answer set. With Refine, the answer set is immediately narrowed based on the criteria that you select.
• Since you want to look at patents as part of this project, select Keep Analysis.
• The patents are now your answer set.
  • PatentPak™ is a workflow solution that reduces time spent acquiring and searching through multiple patents to find vital chemistry information.
  • If your company has purchased PatentPak, you can click the drop down arrow to access the PatentPak viewer and the PDF for many patent family members.
  • To learn more about PatentPak, consult the SciFinder training page shown earlier.
• Click a title to see the Reference Detail.
The Reference Detail page includes all of the available information for a document in SciFinder.

The top of the page includes:
- The bibliographic information, the abstract, and for patents, the Patent Information table.
- The right-side column provides summary information about the publication, including dates and sources.

The Indexing
- When CAS scientists create records for the CAplus database, the records are assigned to one of eighty broad areas of scientific inquiry, known as the Section title.
  - CA Section Title is a useful way to analyze an answer set if you want to focus on a particular type of chemistry.
• The **Indexing**, continued

• **Concepts** are uniform, consistent index terms that serve as pointers to a topic. Concepts are listed in blue boxes. When you identify concepts that apply to your area of research, it is often useful to include those keywords in your search query.

• The **Substances** column includes the CAS Registry Number\textsuperscript{SM} for the substances that are important to the science of the document.
  
  • For companies that have purchased PatentPak, you can click the page number to launch the PatentPak Viewer and go immediately to the substance’s location in a patent.

• The bottom part of the **Reference Detail** page includes:
  
  • **Supplementary Terms** are keywords about the article that are not standardized. They are often new terms associated with the leading edge of science.

  • **Tags** are labels that you can add to a record or a set of answers (under **Tools**). Since tags are searchable, they are a convenient way to group answers from several different answer sets into one new answer set.

  • You can also add **Comments** to records, if desired.
• To further explore a reference in your answer set, on the Reference Detail toolbar, you can click the Link to Other Sources button to see the available options for accessing the original document.
• In this example, when you click Link to Other Sources, you are taken to the CAS Full Text Options page and can then click Search to open the Espacenet web site. Click the patent title and it is available to download.
• If your organization has subscriptions to journals, your SciFinder Key Contact can set up access to the journals.
• Close the tab or window to navigate back to your active answer set.
Search References by Research Topic, Part 3

• Identify process technology by using the Categorize feature
• Export and save answers
• Get substances associated with the answer set

In Part 3, you will learn how to answer the remaining questions:
• What types of processes are patented?
• How can you keep these references for future use and also share them with colleagues?
• What chemical substances are part of the clean up processes?
• Use the breadcrumb trail to return to the patent answer set.
• Next, you want to identify what processes have been patented.
• You will use the Categorize feature to answer this question.
• Click the Categorize button.
• Just like the indexing at the back of a book, CAS scientists apply indexing to reference records in the CAplus database.

• This indexing is standardized, controlled vocabulary. Therefore, it is a useful way for you to identify references about indexed topics.
  • You viewed some indexing in Part 2 when you looked at the Reference Detail for a record.

• Indexing is applied for broad Category Headings, and then for more specific Categories, and finally at the specific Index Term level.

• In this example, you can select the Technology Category Heading and then select Processes & apparatus in the Category column to see all of the index terms about cleaning up oil spills.

• Click the box beside specific Index Terms of interest to select them. Then click OK to create an answer set made up of the references associated with the index term(s).
  • This new step becomes part of your breadcrumb trail. You can always return to a previous step in the breadcrumb trail by clicking that step.
• The references associated with the processes you selected are now your answer set.
• You can click the magnifying glass next to a reference to see information about that document in a separate window.
• This Quick View allows you to view the abstract, any Reference Images, and Substance Images, when available, without leaving your active SciFinder session.
  • Unlike the Reference Detail view, you will not see the indexing or all of the source information.
  • The Quick View can be useful for reading the entire abstract.
• Click the Substance Images tab to see the first fifty substances that are indexed in the reference.
• Close the window to return to your active SciFinder session.
• After you are satisfied with your answer set, you may want to download the information into citation management software.
• Click **Export** to open the associated dialog window.
• In the **Export** window, specify the answers you want to export (**All**, **Selected**, or a specific **Range**).
• Select a file format.
  - For most citation software, the **.ris** file format is used. Check your citation software for details. If a **.txt** format is required, you have both quoted and tagged **.txt** format options.
  - Other export options are also available, including **.pdf**, **.rtf**, or **.txt** for offline review.
  - Select **Answer Keys**, **.akx**, if you want to share an answer set with a colleague or have the search extended in STN (another product that is available from CAS and that provides access to many additional scientific databases).
    - To open an answer key file, look in the **Saved Answer Sets** column of an **Explore** page and click **Import**.
• Enter a **File Name**.
• Click **Export**. A standard **File Download** dialog window will appear. You can save the file in the location of your choice.
  - Depending on the browser you are using, the file may automatically be put into your download file.
  - If you have antivirus software, you may need to accept SciFinder as a trusted source or temporarily allow downloads to use the **Export** feature.
• After the windows close, you will again see your active SciFinder session.
• To keep your answer set for future use, you can also save it to a CAS server.
• Click **Save** to open the **Save This Answer Set** window.
• Enter a **Title** and optional **Description**.
  - For the **Only selected answers** option to be available, you would have had to select some references by clicking the box to the left of answer number. When a record is selected, a black checkmark appears in the box. Since no answers were selected, this option is grayed out.
• You can re-open a saved answer set at another time, on any computer, using SciFinder.
• Click **OK** to return to the active answer set.
1. Process of separation of two immiscible fluids, for example, oil in water
   - By Digestion, Mulvihill, Inc., North Carolina
   - Process: Oil-In-Water
   - Hydrocarbons: 1000-20000 ppm
   - Method: Separation

   *Method* of separation of two immiscible fluids, for example, oil in water...
• Your saved answer sets and the associated search steps are displayed in the Saved Answer Sets window.
  • You can Edit or create a Link to your saved answer sets.
• Bibliographic answer sets are saved under the References tab. Substances and Reactions answer sets are saved under their respective tabs.
• In addition, you can easily Combine Answer Sets in SciFinder.
  • Click the box to the left of a title to select it.
  • Select the two answer sets that you want to combine.
  • The Combine Answer Sets icon at the top of the page becomes active.
  • Four combine options are available. Select the option of interest and then click Combine Answer Sets.
  • This new answer set then becomes the active answer set.
  • Combine is particularly useful if you want to merge two different answer sets or when you have conducted two similar searches and want to see the records that are unique in the larger answer set.
• Saved answer sets are retained until you delete them. To delete answer sets, select the ones you want to delete and then click Delete Selected on the toolbar.
• In this example, you are not going to combine any answers, so use the breadcrumb trail to return to your search results.
To retrieve all of the substances that are pertinent to the science in these references, click **Get Substances**.

- Notice that you could also **Get Reactions** or **Get Related Citations**.
- In the **Get Substances** window, specify the substances of interest. By default, SciFinder retrieves substances for **All references**.
- Click **Get**.
• SciFinder retrieves the substances that are indexed in the records.
• Working with substance data is taught in the “Search for Substance Data” materials.
• You can use the breadcrumb trail to return to a previous step in your search or, on the top navigation bar, click the Explore drop down arrow to initiate a new search.
This session is now concluded. To learn more about searching SciFinder, visit the training page at cas.org or consult the online Help.