

# Careers in Chemical and Patent Information

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# Chemical Information

- What is it?
- Searching is core competency
  - CAS, Beilstein, Inhouse sources
- Original sources
- Database producers
- Database vendors
- Ease of access

# Typical Chemical Information Questions

- Is this structure known?
- What are physical properties of this compound?
- Are there syntheses of similar compounds?

General objective is to perform skilled, complex, and expensive literature work for lab scientists and management.

# Chemical Information Tools

- Chemical structure search engines
- Chemistry databases
  - Chemical Abstracts
  - Beilstein
  - ISIS

# Patent Information

- The next level
- Not taught in school
- Same considerations as non-patent
  - Original sources
  - Database producers
  - Database vendors

# Typical Patent Information Questions

- We need a prior art search on this drug lead.
- Is there a patent on this compound?
- If I use this method, will I infringe on someone else's patent?
- When will the patent on this drug expire?

# Patent Information Tools

- The same as for chemistry
- Markush structure search engines
- Patent databases
  - Derwent
  - Chemical Abstracts
  - PlusPat

# Chemistry and Patent Information

- I have merged the two disciplines
- In some places, the jobs are distinct
- In others, the jobs are merged
- Because prior art encompasses non-patent sources, patent searchers must be fully versed in non-patent resources.

# The Importance of this Work

- The foundation of research based organizations
- A healthy organization will get the prior art under control early in product development effort, either in house or licensed in.
- Difficulty, complexity, and expense of the search engines relegates their use to skilled practitioners

# Risk of Failure to do Search

- Wasted work and effort
  - on a project that is later found to be patented by another
  - on a project that is not patentable
- Risk of infringement

# Types of Searches

Type of Search	Question/Purpose	Answers (scope of search and type of information reported in memo)	Search techniques
<b>- PATENTABILITY - PRIOR ART</b>	Is the compound, formulation, or process new and patentable? Ordered before the patent is filed.	Patent or nonpatent literature that describes or suggests the product or process.	Registry searching, Markush search, reaction searching, sequence searching, keyword strategies.
<b>INFRINGEMENT</b>	Does my invention, compound, or process infringe on a patent? Also known as a "freedom to practice search".	This situation is a subset of a patentability search. Search patents only that describe or suggest the invention, compound, or process.	Registry searching, Markush search, reaction searching, sequence searching, keyword strategies.
<b>VALIDITY</b>	Are there any references that would make this patent invalid? This type of search is needed in an infringement action or an interference.	Patent or nonpatent literature that describe or suggest the invention in the patent, published before the priority date.	Registry searching, Markush search, reaction searching, sequence searching, keyword strategies, with date limitation.

# Types of Searches

Type of Search	Question/Purpose	Answers (scope of search and type of information reported in memo)	Search techniques
<b>PATENT STATUS OF A COMPOUND</b>	Is there a valid patent that covers this compound? Needed for license agreements and generic drug development.	Search patents only that claim the compound, and evaluate validity of claims. Include claims on the compound, formulations, preparations, utilities. Attempt to identify a patent maximizing exclusivity.	Registry searching, optionally Markush searching, keyword strategies.
<b>PATENT FAMILY</b>	Are there related filings in other countries? Are there alternative publication languages for this invention?	Report of patent families, preferably using the ibib command on STN or equivalent.	Family search command available on all online vendors.
<b>GENERAL INFORMATION</b>	Survey of a subject area of interest.	Search Chemical Abstracts, Derwent WPI, and other relevant sources. Scope is superficial.	Registry searching, reaction searching, sequence searching, keyword strategies.
<b>LEGAL STATUS</b>	Status of examination, grant, or expiration in a particular country	Search a single country file in the relevant country, or INPDADOC, or Claims/RRX.	bibliographic

# Specialized Search Engines

- Chemical Structure search systems
  - STN, Markush DARC
- Fragmentation code systems
- Specialized patent information databases
  - Derwent, IFI, Full Text, Chemical Abstracts

# Other Elements Besides Searching

- Managing End User Searching
  - Beilstein, SciFinder, ISIS, etc.
- Assist clients with current awareness needs
- Act as a resource in information retrieval
  - informational web sites
  - training

# Key Factors in Success

- To succeed in chemistry and patent information management, you should:
  - Enjoy heads down work
  - Understand computer systems and data handling
  - Enjoy working with clients
  - Have a technical background
  - Have good writing skills

# How Do You Get There?

- Possess the requisite technical skills
- Desire a career outside of the lab yet utilizing a technical background
- Ample low cost or free training opportunities in specific tools
- Lots of jobs currently being advertised

# Salary and Promotion

- Recent studies and personal experience indicate that information scientists have comparable salaries and corporate rank to similarly educated and qualified lab scientists.
- Promotion Opportunities
  - Typical corporate management ladder
  - Law School
  - MBA

# My career

- Ph.D. in Organic Chemistry
- Post-doc
- 12 years in information functions in the drug industry
  - 1989 - American Cyanamid Medical Research Division (Lederle Labs)
  - 1995 - Merged with AHP, became Wyeth Ayerst Research
  - 1999 - Moved to Merck

# General qualifications

- BA or higher
- MLS common
- Willingness to learn

# Firms Recently Advertising Positions

- Chiron (Aug 6)
- GlaxoSmithKline (Aug 16)
- Derwent (Aug. 9)
- Wyeth Ayerst (Aug 9)
- Rohm and Haas (July 19)

# Useful Resources

All positions communicated on the  
piug or chminf email lists

<http://listserv.indiana.edu/archives/chminf-1.html>

<http://www.piug.org/list.html>