Careers in Chemical and Patent Information

Andy Berks
Merck & Co.
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

<table>
<thead>
<tr>
<th>Type of Search</th>
<th>Question/Purpose</th>
<th>Answers (scope of search and type of information reported in memo)</th>
<th>Search techniques</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>- PATENTABILITY - PRIOR ART</strong></td>
<td>Is the compound, formulation, or process new and patentable? Ordered before the patent is filed.</td>
<td>Patent or nonpatent literature that describes or suggests the product or process.</td>
<td>Registry searching, Markush search, reaction searching, sequence searching, keyword strategies.</td>
</tr>
<tr>
<td><strong>INFRINGEMENT</strong></td>
<td>Does my invention, compound, or process infringe on a patent? Also known as a &quot;freedom to practice search&quot;.</td>
<td>This situation is a subset of a patentability search. Search patents only that describe or suggest the invention, compound, or process.</td>
<td>Registry searching, Markush search, reaction searching, sequence searching, keyword strategies.</td>
</tr>
<tr>
<td><strong>VALIDITY</strong></td>
<td>Are there any references that would make this patent invalid? This type of search is needed in an infringement action or an interference.</td>
<td>Patent or nonpatent literature that describe or suggest the invention in the patent, published before the priority date.</td>
<td>Registry searching, Markush search, reaction searching, sequence searching, keyword strategies, with date limitation.</td>
</tr>
</tbody>
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<td><strong>PATENT STATUS OF A COMPOUND</strong></td>
<td>Is there a valid patent that covers this compound? Needed for license agreements and generic drug development.</td>
<td>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.</td>
<td>Registry searching, optionally Markush searching, keyword strategies.</td>
</tr>
<tr>
<td><strong>PATENT FAMILY</strong></td>
<td>Are there related filings in other countries? Are there alternative publication languages for this invention?</td>
<td>Report of patent families, preferably using the ibib command on STN or equivalent.</td>
<td>Family search command available on all online vendors.</td>
</tr>
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<td><strong>GENERAL INFORMATION</strong></td>
<td>Survey of a subject area of interest.</td>
<td>Search Chemical Abstracts, Derwent WPI, and other relevant sources. Scope is superficial.</td>
<td>Registry searching, reaction searching, sequence searching, keyword strategies.</td>
</tr>
<tr>
<td><strong>LEGAL STATUS</strong></td>
<td>Status of examination, grant, or expiration in a particular country</td>
<td>Search a single country file in the relevant country, or INPDADOC, or Claims/RRX.</td>
<td>Bibliographic</td>
</tr>
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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-l.html
http://www.piug.org/list.html