



## Relating Chemical Information

---

### Dissemination and the Literature of Chemistry



## Communication is Important! (for Practical Reasons)

---

- **In getting a professional position:**
  - How effective is their communication?
  - Do they convey credibility through their communication?
  - Will their communications be effective with subordinates, peers and management?
  - Are they open, straightforward, to the point?
- **In keeping a professional position:**
  - Clear communication of the significance of the results obtained, problems encountered, or requirements for successful results.



## Communication is Important! (for Scientific Reasons)

---

- New knowledge is built on a foundation of existing knowledge.
- Organization and distribution of knowledge is critical for efficiency and reliability.
- Can't test new knowledge unless you know it exists.
- Critical to understand the methods as well as importance of good communication!



## Modes of Scientific Communication

---

- Written
  - Journal Articles, Progress Reports, Patents...
- Oral
  - Seminars, Group Meetings, Conferences
- Posters



## Scientific Literature: the Foundation of New Knowledge

---

- Primary Literature: Original material or data
  - Journals
  - Patents
  - Manufacturer's Technical Information
  - Government publications
  - Dissertations
  - Some books
  
- Secondary Literature: Previously published information, collected and organized into a more usable format.
  - Review articles
  - Monographs/Treatises
  - Textbooks
  - Bibliographies/Tabular Compilations



## Scientific Literature: the Foundation of New Knowledge

---

- Tertiary Literature:
  - Designed to help access or use primary or secondary literature OR keep abreast of developments in equipment/chemical
    - Chemical Abstracts
    - Science Citation Index
    - Lab Guides
    - Protocols published by private or government organizations
    - WWW



## Path to New Knowledge

---

- Everything starts with a question!
- What is already known?
  - Start with the literature!
    - “A day in the library saves a month in the lab”
  - Why reinvent the wheel?
- Experiments are designed to fill in the blanks
- Results are evaluated and critiqued
- Results are disseminated
  - Route depends on several factors



## Path to Publication

---

- Primary literature gives several options
  - Note
  - Communication
  - Article
- Different “tiers” of primary literature
  - Important to choose the proper venue
- Peer-review process serves as quality control
  - Not perfect!



## Publication in the Primary Literature

---

- Authors are typically free to submit papers
  - Choose appropriate venue.
  - Each journal is a little different. Follow directions!
- Papers are sent to several (usually 3) reviewers
  - “Experts” in the field
- Reviewers (anonymously) return comments and a recommendation to the editor.
  - Publish as is
  - Publish with minor revision
  - Publish after major revisions and re-review
  - Not suitable for this journal



## Publication in the Primary Literature

---

- Once approved, the paper will be published...  
...eventually.
  - Typesetting, graphics, legals.
  - Electronic communication has made this step easier!
- Most journals have a lag time of a several months for a regular paper
  - Shorter for notes and communications
  - Some journals have web-based “fast track”



## Format of a Typical Paper (specific names vary)

---

- Be sure your format fits the target journal!
  - Look at “Notes for Authors”
- Abstract
- Introduction
- Experimental
- Results and Discussion
  - Typically longest section
- Conclusions
- Acknowledgements
- References
  - Citation format depends on journal.



## Reading and Decoding Papers

---

- Read the abstract first.
  - Be sure that there is a chance that the paper will be useful.
- Focus on the sections of the paper that are likely to be of the most use to you!
  - Be an active reader – take notes!
  - It will probably take more than one time through to get an understanding.
  - You can learn a lot from figures and figure captions! This is usually the important stuff!