Help us Grow. We need your help.

The success of the ChemWiki lies in hands of the faculty and students that develop and use this free resource. Please consider contributing (non-financially) to the project to ensure its growth and eventual success. All effort, no matter how small, is appreciated. You do not need special knowledge of chemistry to contribute - just a desire to change the status quo. Contact Dr. Larsen for details.

The collaborative authorship nature of the ChemWiki encourages students not only to comment on quality and utility of specific Modules, but promotes their growth with active discussion. This “organic” growth of the ChemWiki provides a powerful approach for students to “own” the material by explaining the content and answering questions to other students. Similar peer education concepts underlie many modern educational approaches.

**The Core/Wikitext Approach:** The ChemWiki is designed to maintain all Modules (pages of chemistry information) in the primary sections in the Core, whereas the Wikitexts contain only class organization that is custom designed and developed for individual instructors, classes or schools; see the Development page for more details. The Wikitexts consist of “Topics” (chapters) of broadly defined areas each separated into multiple “Modules” (sections) containing well-defined concepts to be learned. Each Module can be independently and separately written to enable the multiplexed construction of the ChemWiki by many ”student-authors” working in parallel, thus significantly accelerating its development. This modular approach provides the flexibility for instructors to organize the class material to suit their unique teaching style or established departmental curricula. By formulating the Modules at diverse levels of difficulty, advanced students can receive the suitably complex material needed to maintain stimulation while providing the core information to the less scientifically-oriented students. A well functioning textbook (whether hyper- or conventional) is much more than just a series of reference topics found in Encyclopedias or Wikipedia, but must address additional aspects: 1) An established flow between previously discussed, current and future content and 2) A complementary set of questions to aid student internalization of the text material (SARIS). An excellent example of a Wikitext is the Organic Chemistry With a Biological Emphasis textbook by Tim Soderberg and Textbook Maps to popular paper-based textbooks are being constructed.
Developmental Approach: The ChemWiki follows the established Wiki architecture that allows contributors to add and modify content via a simply designed, intuitive language. The most popular example of a Wiki is the Wikipedia encyclopedia project that has developed in the past seven years into the largest reference website on the Internet and has recently demonstrated comparable scientific accuracy to more established sources of information like the Encyclopedia Britannica. However, the fundamental difficulty in using the existing Wikipedia entries as an ad hoc online textbook, with its free-for-all fully collaborative authorship nature, is that its information has not been validated by experts. To address this, we propose the construction of ChemWiki environment for introductory chemistry classes that follows a similar structure to conventional textbooks. The collaborative authorship underlying the success of Wikipedia provides students with the opportunity to review, change and comment on the material and its presentation. Since the ChemWiki is hyperlinked and can connect a wide range of content at varying levels of difficulty, it will allow for the simultaneous instruction of students with diverse backgrounds at a range of levels.

- Students
- Faculty
- Non-academic Experts

Vetting Modules: The information in the ChemWiki is currently, and always will be, in the process of being written and vetted. Please consider all information in Modules with colored title backgrounds as potentially incorrect; the vetting process is ongoing and is completed only for Modules with gray title backgrounds. The contribution at each level is peer reviewed by other members in the same level. As content progresses higher, the final evaluation rests in the Vetting Panel consisting of the PI’s of this proposal. Once reviewed at this level for content, approach, accuracy, etc, the Module will be “locked” allowing for editing only by contributors with expert standing, thus preserving a clear standard for the project. To target undeveloped content in the Core, the Modules will be color coded according to its level of construction. For example, Modules at level 1 will have a reddish hue in the background tone or title. This ensure that readers and contributors are aware that this “code-red” content is not as reliable as “code-yellow” content in stage 2, nor “code-green” content in stage 3, both distinguishable via assigned colors. “Code-blue” content will be at the expert level and represented fully vetted material that can be trusted and cannot be modified by students.

- Example Modules

The Student Ability Rating and Inquiry System (SARIS): The Student Ability Rating and Inquiry System (SARIS) is a separate application from the ChemWiki that addresses the need for homework with an extensive question database. When fully implemented, SARIS will generate valuable statistics tracking individual student performance. The SARIS shares similar to other homework applications, but is augmented by links between the SARIS and ChemWiki databases, which direct students toward relevant module content. Moreover, since SARIS is uncoupled from a textbook publisher, it fits the ChemWiki AIM of open access. The SARIS is powered with PracticeZone.org technology, which was developed by Chuck Wight, Professor of Chemistry at the University of Utah. Usually, web sites with dynamic content like this one are best used as learning tools, not assessment or testing tools. For this reason, we have configured the software to allow students to submit proposed solutions to the problems as often as they want, in order to improve their scores. The objective is for students to use the feedback to correct their errors.

- Outreach
- Public Relations
• **Kudos**

Quarterly Reviews are available tracking the development of the ChemWiki:

1. Fall 2009
2. Winter 2010
3. Spring 2010
4. Summer 2010
5. Fall 2010
6. Winter 2011
7. Spring 2011