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Collecting to the Core-Chemical Safety in the Academic Lab

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ten and offer key facts and helpful context. Other useful features of the book include a listing of notable songs from 1920 to 2015, a select list of Grammy winners from 1958-2015, and an impressive bibliography arranged by place, artist and genre. **Mr. Abjorensen** also provides an introduction that helps define popular music and offers some historical analysis as well as a chronology dating from 1827 to early 2017.

Often books like this are labors of love and the ***Historical Dictionary of Popular Music*** is no exception. **Mr. Abjorensen's** personal interest and enthusiasm for popular music is evident throughout. It is one of those reference works that is equally, if not more, suited for circulating collections. Both academic and public libraries will want to consider it. And one suspects that a number of popular music fans may want personal copies. As noted above an eBook version is also available.

Extra Servings

SAGE Publishing will be releasing some new reference handbooks

- The ***SAGE Handbook of Neoliberalism*** (April 2018, ISBN: 9781412961721, $175) "showcases the cutting edge of contemporary scholarship in this field by bringing together a team of global experts. Across seven key sections, the handbook explores the different ways in which neoliberalism has been understood and the key questions about the nature of neoliberalism…"
- The ***SAGE Handbook of Consumer Culture*** (Feb. 2018, ISBN: 9781473929517, $160) "is a one-stop resource for scholars and students of consumption, where the key dimensions of consumer culture are critically discussed and articulated. The editors have organised contributions from a global and interdisciplinary team of scholars into six key sections..."
- The ***SAGE Handbook of Qualitative Business and Management Research Methods*** (Jan. 2018, ISBN: 9781473926622, $325) is a 2-volume set that "provides a state-of-the-art overview of qualitative research methods in the business and management field. The Handbook celebrates the diversity of the field by drawing from a wide range of traditions and by bringing together a number of leading international researchers engaged in studying a variety of topics through multiple qualitative methods. The chapters address the philosophical underpinnings of particular approaches to research, contemporary illustrations, references, and practical guidelines for their use..."

Salem Press has a number of new and forthcoming titles in the offing including:

- ***Salem Health: Genetics and Inherited Conditions, Second Edition*** (Oct 2017, ISBN: 978-1-68217-603-0, $395; e-ISBN: 978-1-68217-604-7, $395) is a 3-volume set that alphabetically arranges "459 essays on diseases, biology, techniques, methodologies, genetic engineering, biotechnology, ethics, and social issues. Written for non-specialists by professors and professional medical writers, this comprehensive reference publication will interest health-care consumers, premedical students, public library patrons, and librarians building scientific collections..."
- ***Defining Documents in American History: Political Campaigns, Candidates, and Debates*** *(1787-2017)* (March 2018, ISBN: 978-1-68217-700-6, $295; e-ISBN: 978-1-68217-590-3, $295) is a 2-volume set that "offers documents and commentary that showcase the American political process. Candidates, issues, and campaign styles have changed dramatically over time, from the front porch approach of the presidential campaigns of the 1800s to the social media campaigns of today. Political debates aren't limited simple to presidential campaigns, and this work examines how this American institution has shaped the government and its policies on personal, local, state, and national levels…"

H.W. Wilson is publishing a new updated second edition:

- *American Reformers* (Oct. 2017, ISBN: 978-1-68217-196-7, $195) is in its second edition and "brings together informative biographies of 600 men and women who were the principal architects of reform in America from the seventeenth century to modern times. Designed for students and the general reader, coverage includes not only the chief facts of each subject's life, but also offers a thought-provoking assessment of the subject's significance to the general reform movement in this country. Last published in 1985, this new second edition offers over 100 new entries, to extend its coverage into the twenty-first century…"

Collecting to the Core — Chemical Safety in the Academic Lab

by **Jeremy R. Garritano** (Research Librarian for Sciences/Engineering, Brown Science and Engineering Library, University of Virginia; Chemistry Subject Editor, *Resources for College Libraries*) <jg9jh@virginia.edu>

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Column Editor's Note: *The "Collecting to the Core" column highlights monographic works that are essential to the academic library within a particular discipline, inspired by the* ***Resources for College Libraries*** *bibliography (online at* ***http://www.rclweb.net****). In each essay, subject specialists introduce and explain the classic titles and topics that continue to remain relevant to the undergraduate curriculum and library collection. Disciplinary trends may shift, but some classics never go out of style. —* ***AD***

Over the last decade, there has been increased scrutiny focused on improving chemical safety in academic laboratories. A number of incidents, ranging from minor injuries to fatalities, has caused various groups to call for increased investments in safety culture and new methods for chemical safety education. For those unfamiliar with the issue, an editorial in *ACS Central Science* provides useful background on some of the recent incidents and proposed solutions.[1] Academic librarians, especially those serving the sciences, should be aware of the most current publications and reports particularly because of rapid changes across policy, regulations, and philosophical approaches to safety education. Additionally, because of the increasing availability of open data and information on the Internet, many of the reports and publications acknowledge the importance of using appropriate information resources. While it may be assumed that, through coursework, students are provided the necessary safety information to carry out lab experiments, making these resources available through the library broadens their access, enhances a safety culture throughout the institution, and provides individuals (such as independent study students, student entrepreneurs, and novice researchers) with the latest industry reports, best practices, guidance, and data.

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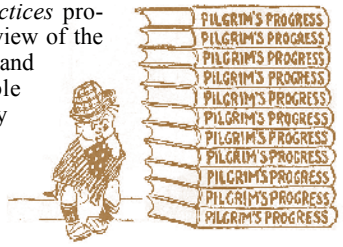
Many of the resources described here are freely available online, but librarians may opt to purchase print copies to keep in labs or for ready reference when access to electronic devices or the Internet is not available. This column includes a selection of resources regarding chemical safety in academic labs, therefore it does not cover industrial or process safety as is more common in engineering professions, nor does it cover related areas such as biohazards and safety related to equipment or instrumentation, such as lasers. Additionally, the resources described below do not provide extensive coverage of environmental or occupational health and safety, including topics related to industrial hygiene, toxicology, and related legal aspects. Other resources are available that cover those areas.

Reports and Outcomes

In 2010, the **U.S. Chemical Safety Board** (**CSB**) deemed an explosion in a chemistry lab at **Texas Tech University** serious enough to warrant an investigation. While this sounds like a typical event for the **CSB** to investigate, the **CSB** is an independent federal agency tasked with investigating chemical accidents in industry and the **Texas Tech** incident was the first investigation at an academic institution since the **CSB's** formation in 1998. After this inquiry, one recommendation asked the **American Chemical Society** (**ACS**) to "develop good practice guidance that identifies and describes methodologies to assess and control hazards that can be used successfully in a research laboratory."[2] This resulted in two key documents released by the **ACS**. In 2012, the **ACS** released the report *Creating Safety Cultures in Academic Institutions*.[3] This document lays the groundwork for developing strong safety practices in academic environments. A key section outlines suggested lab safety topics that should be taught in undergraduate chemistry programs during the first and second years as well as more advanced topics for the third and fourth years. The report advocates for continuous learning throughout the curriculum and for integrating hazards analysis with the principles of the scientific method. It also provides a table of resources that can be used to develop lessons for the curriculum. Following in 2015, the **ACS** released *Identifying and Evaluating Hazards in Research Laboratories*.[4] This extensive report expands on the hazards analysis integration outlined in the earlier report and details areas of the hazard assessment process including hazard identification, roles and responsibilities, and assessing implementation. The report also presents five specific tools with appropriate templates. A corresponding web site translates these tools into the digital environment.[5] Libraries should ensure both the web site and report are readily available to researchers. Between the publication of these **ACS** reports, the **National Research Council** (**NRC**) convened a panel of experts from various areas and produced *Safe Science: Promoting a Culture of Safety in Academic Chemical Research*.[6] While this report may not be as useful for individual students, it does make recommendations for institutions, research groups, and training and learning. It also discusses various campus roles (such as provosts, department chairs, safety professionals, and individual researchers) and what each can do to promote a safety culture. These recent reports provide key background information and highlight the shift in academia from simply following the rules to building a broader safety culture.

Best Practices

The **ACS** report discussed above, *Identifying and Evaluating Hazards in Research Laboratories*, is one example of a source for best practices. However, a few other resources are also worth mentioning. A classic in this area is *Prudent Practices in the Laboratory: Handling and Management of Chemical Hazards*.[7] The most recent 2011 edition modernizes and should replace the previous edition, published in 1995. This new edition further emphasizes the culture of safety and takes a more expansive approach to chemicals in the lab, including biohazards, radioactive materials, and nanoparticles. *Prudent Practices* provides a comprehensive overview of the entire laboratory environment and therefore should be available in most libraries even if only via access to the free online version.[8]



More focused resources are also available, such as *Destruction of Hazardous Chemicals in the Laboratory*.[9] While appropriate for more advanced students and researchers, this resource is well-organized and provides detailed procedures for the destruction of specific compounds. Organized by either specific compound or broader class of chemical compound, each entry includes a description of the compound, a narrative description of the destruction procedure, step-by-step instructions for destruction, appropriate analytical procedures to verify destruction, and related compound information. A benefit to this compilation is that the authors have curated the destruction methods from the scientific literature and ongoing research, with each entry containing multiple citations. As the title implies, however, the focus is on hazardous (and sometimes extremely hazardous) substances. Therefore, the title may not prove as useful to first- and second-year students, but when needed can provide extremely specific information about a particular compound. An additional advantage to this title is that it includes select methods related to biological toxins and to compounds of importance for pharmaceutical research. This interdisciplinary nature makes it useful in a wider variety of advanced lab courses and beyond chemistry.

If there is intent to keep up with current trends in chemical safety in terms of news, best practices, and education, it would be useful to provide access to the *Journal of Chemical Health and Safety*.[10] While journals are not the focus of the *Resources for College Libraries* database or this "Collecting to the Core" series, it is notable because even though this journal is an official publication of the **ACS Division of Health and Safety**, **ACS Publications** does not publish it. Those institutions that subscribe to all **ACS** publications may be missing this title, and it is worth acquiring.

For Undergraduate Students

While the previous resources provide information on best practices for all researchers, some recent publications have been developed solely for undergraduate students. *Laboratory Safety for Chemistry Students* is a textbook (2nd edition, 2016) that the authors intend for use throughout the chemistry curriculum.[11] Each chapter is divided into three areas: introductory (first-year), intermediate, and advanced topics, allowing students to reference different sections of the same chapter depending on their course and level of understanding. Practice questions are provided at the end of each chapter. Most importantly, in the 2010 first edition of this textbook the authors introduced the RAMP concept that has been widely adopted and is referenced heavily in recent reports by the **ACS**. RAMP is a mnemonic that introduces a set of safety principles from which the more commonly encountered safety rules are derived. By focusing safety education on RAMP, it encourages students, especially if they forget a specific rule, to apply the principles to minimize risk and related hazards regardless of the situation. With this new approach to chemical safety education, students are encouraged to: **R**ecognize chemical hazards; **A**ssess the risks of the hazards present; **M**inimize the risks of those hazards; and **P**repare for emergencies.

The **ACS Joint Board-Council Committee on Chemical Safety** released the eighth edition of *Safety in Academic Chemistry Laboratories* this year.[12] It has been published in various forms since 1972 and remains a key publication, especially for academia. The audience for the most recent edition has been further narrowed to first- and second-year students, and at less than 75 pages, it is heavily illustrated and readable. It uses RAMP as a guiding principle and encourages students to take an active role regarding their safety in the lab. Sidebars present questions for reflection or further discussion and "In Your Future" boxes highlight advanced topics student may encounter in later coursework. Of note to information professionals, a two-page appendix includes a list of recommended web sites related to safety information.

Data (For Everyone)

In terms of communicating chemical safety information, there have been two major developments in recent years. In 2012, the **U.S. Occupational Safety and Health Administration** (**OSHA**) aligned with the **Globally Harmonized System of Classification and Labeling of Chemicals** (**GHS**) and in 2015 moved from the Material Safety Data Sheet (MSDS) to requiring the Safety Data Sheet (SDS) format for communicating the hazards of various chemical products.[13] Both of these

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changes were meant to bring the United States in line with international efforts towards standardization. A vendor should produce an SDS for every compound it sells and because multiple vendors may sell the same compound this also means that there are multiple SDS for a single chemical compound. Perhaps the best-known site that aggregates SDS from multiple sources is "Where to Find MSDS and SDS on the Internet."[14] This site is a pathway linking to other sites that either aggregate SDS or provide their own SDS. Over 100 sites are listed across industry, government, and academic institutions. The *OSHA Occupational Chemical Database* brings together data from multiple publications and sources into a single entry for a particular chemical compound.[15] Similar to the SDS, it provides information on first aid, personal protection, emergency response, and exposure limits. Besides the hazards of individual chemicals, there is also interest in identifying whether certain compounds are incompatible or highly reactive when in the same environment. Two core resources specifically cover this type of information. The *Wiley Guide to Chemical Incompatibilities*, while having an industrial focus, is still quite useful in the lab.[16] Arranged alphabetically by compound name, it covers almost 9,000 profiles. Each profile is a brief entry providing chemical and physical properties related to chemical safety, information about potential incompatibilities (e.g., forms explosive mixture with air, violently reacts with X, may form explosive sensitive materials when mixed with X, etc.), and specific information about extinguishing fires that involve the particular compound. In some cases it also details more general incompatibility with construction or environmental situations (such as whether a compound corrodes plastics, metals, rubbers, or coatings). A similar resource is *Bretherick's Handbook of Reactive Chemical Hazards*.[17] A key difference is that *Bretherick's* documents the source where the incompatibility was first noted, whether in a trade journal or scientific article, therefore it is focused on actual events, mainly in lab settings. It also is composed of two volumes — the first addresses individual compounds like the *Wiley Guide* — but the second volume contains entries for broad classes of compounds that the *Wiley* source lacks. Providing access to both of these complementary texts is ideal.

While not comprehensive, the works discussed here are key information resources for chemical safety in academic labs. With continued emphasis on chemical information as it relates to chemical safety, librarians can ensure access to both free and licensed resources and, as a result, contribute to advancing a culture of safety at their institutions.

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grandkids! It's a lot! **October** studied Italian in College and in her years at the **UNC library** and lived over there in high school for a while so she knows the drill. How exciting!

Birkbeck's Centre for Technology and Publishing is pleased to announce the open-source release of its software for academic publishing. "**Janeway**" is a press and journal system designed for open-access publishing that is free to download, use, and modify. Written in **Django/Python** from the ground up and still under active development, the software includes a submission system, a peer-review management workflow, **Crossref DOI** integration, OAI feeds, Open Journal Systems import mechanisms, an extensible plugin architecture, and much more. **Janeway** is **licensed under the AGPL** meaning that anyone is free to use and modify the software, so long as they make their changes similarly open (even if they modify the code in private and publicly host that instance). The software is lightweight and can run on **shared hosting platforms** that support **WSGI**, such as Reclaim Hosting, contribute to the growing ecosystem of open-source platforms for open-access publication and to assist presses in lowering their overheads of running a platform. **Janeway** has

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