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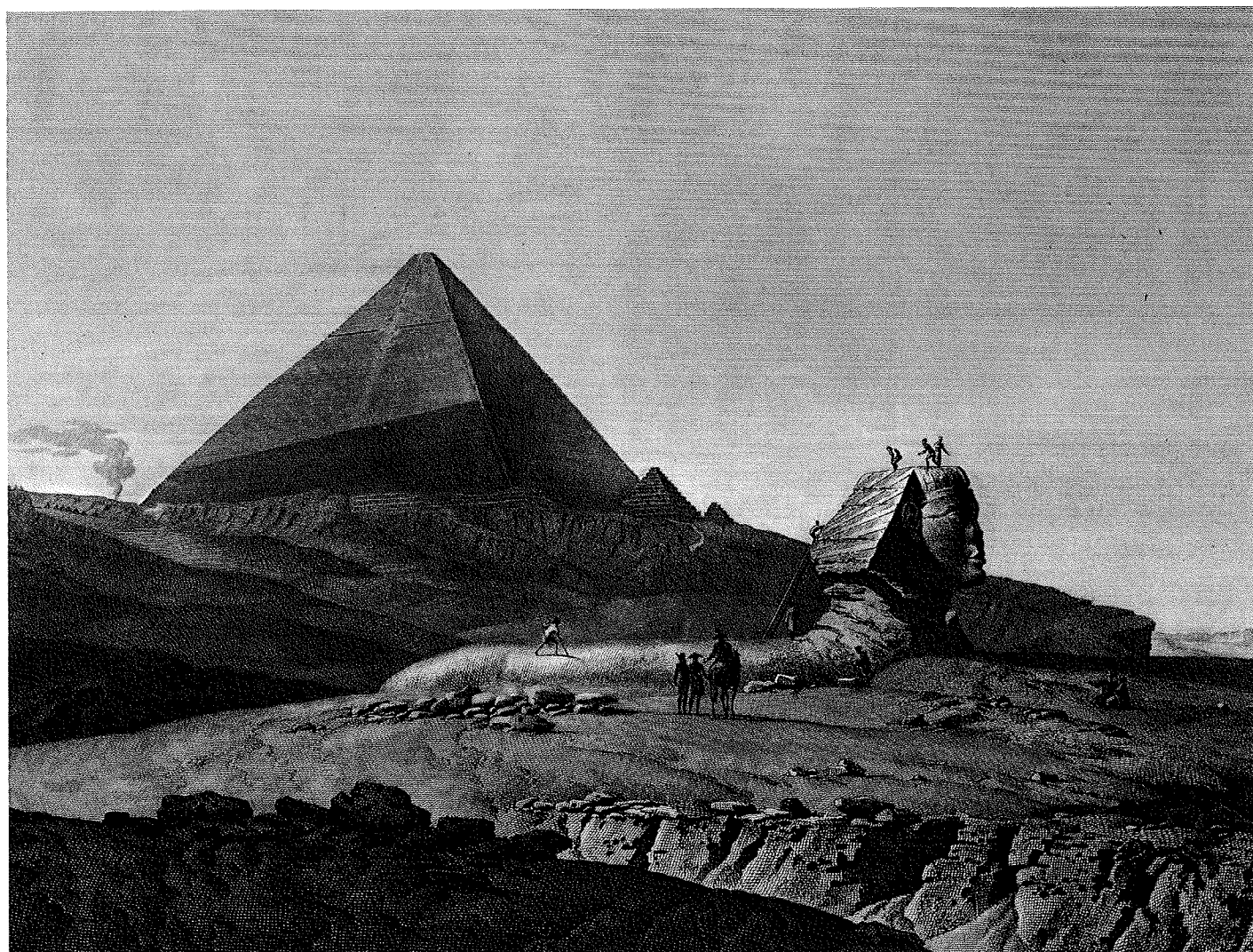
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SciTech News

The Official Bulletin for the Chemistry, Engineering, and Science-Technology Divisions and the Aerospace Section of the Engineering Division and the Materials Research and Manufacturing Section of the Chemistry Division of the Special Libraries Association





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SciTech News

Ellis Mount, Editor Emeritus



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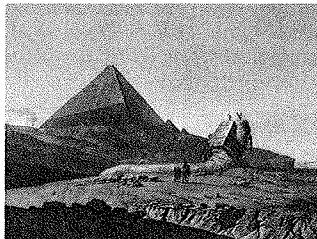
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On the Cover



In July, 1798, Napoleon Bonaparte landed a huge army in Egypt. In addition to troops, he brought along 150 scientists and engineers to study and map the country, making this the first large-scale scientific expedition in history. The results were published in a massive 23-volume work, illustrating all aspects of Egypt's geography, natural history, and antiquities. The cover image, which is a detail from a larger view, shows Napoleon himself, observing from horseback, while his scientists measure and draw the Sphinx. The collected work is called *Description de l'Égypte* (Paris, 1809-1828); the image is from volume 5 of the *Antiquités Planches*. (Photo and caption courtesy of the Linda Hall Library of Science, Engineering & Technology).

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Enthusiasm, excitement, entertainment, and excellence – and what an EXPO! Sums up my impression of SLA 2008 in Seattle, Washington, USA.

There were a gratifyingly significant number of younger faces at this conference. Was it the West Coast venue, or the fact that Web 2.0 is finally showing the importance and significance of information management? It was also nice that the scary economy did not seem to affect the attendance, as it definitely has in the past. One thought, since there is such an emphasis on being an international organization, when will we go overseas? We've already been to Brighton, England.

Though our Division boards are frustrated by the reduced programming opportunities, I for one appreciate the no-compete EXPO times, both as a former exhibitor and as an attendee. If I don't go to the exhibits, it still gives me a lot more time for catching up with colleagues, since I'm not much of a night owl.

As always in the August STN issue, you will find much more about the content of the conference sessions. I certainly second Marydee Ojala's comment in the Infotoday blog about how smoothly SLA 2008 was run. A very welcome change from some past years, when I wondered if this was the first SLA conference ever organized. Kudos to SLA HQ for that, and for attracting such a large group of vendors, with many new ones exhibiting.

Speaking of blogs, they certainly gave real-time accounts of the festivities and activities. We've included a list of some that might be of interest in this issue. It's also very exciting to have so many session podcasts available. A great way to counteract the impossibility of the session conflict situation.

I also had the opportunity to attend both the annual IFLA conference in Quebec City and an IFLA satellite meeting in Boston. What a thrill to meet colleagues from around the world. There were many countries represented from I think just about all continents. Having lived abroad during the 70s, I already know how enriching this can be to one's perspective about the world. Now I have a new perspective on librarians and libraries from a world view. And a new appreciation of how rich I and most US librarians are in technology and access. For more information about both meetings, you can go to the www.ifla.org site and the section site links from that page.

In this issue you will find a "help wanted" notice for a new *SciTech News* editor. I have enjoyed my 5 year stint tremendously, but it is time for me to pass the reins. Well, there were some hectic and frustrating times, I'll admit, but the Division leaders and content providers are amazing both in their support and their ability to meet deadlines. The Science-Technology Division has formed a task force for future directions – online, print, a combination of the two, other types of communication etc. If you'd like to contribute to the discussion, please contact Sci-Tech Chair Christine Whitaker. It will be an exciting and creative time for the next editor. I encourage you to apply if you fit the qualifications. I will be available to advise as long as needed.

Be sure to vote for your Division officers. Those ballots should be coming to your email boxes shortly.

Susan Fingerman
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2008 Annual Conference Session Reports

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Sci-Tech and Biomedical Divisions Academic Roundtable

Wednesday, Jun 18, 2008

Presented by: Science-Technology and Biomedical Divisions

Sponsored by: Elsevier, Inc, Thomson Reuters

Moderated by: Jan Schueller, Battelle, Seattle

Reported by: Kelly Blessinger, Assistant Reference Coordinator, Louisiana State University

This ninety minute session included lunch and seven roundtables for discussion. Each table was given a half hour to discuss their topic with an option for attendees to change tables after thirty minutes. At the end of the discussion period, each facilitator was asked to come to the microphone to give a summary of the major points on each topic. (Facilitators are in parenthesis).

Table 1: Debating the Future of the Reference Desk (Julie Arendt, Southern Illinois University Carbondale) While this table recognized that reference desk statistics are down everywhere, most felt reluctant to give up the collaborative nature and visibility that reference desks provide. A common theme was that the reference desk is a constant reminder that librarians are there to help.

Table 2: Recruiting Good Candidates for Open Positions (Regina W. Cannon, University of Georgia) This table suggested that beginning salary ranges should always be put on job advertisements for the most efficient and up front job descriptions. They felt that it is important for employers to be flexible both with starting dates and working schedules. Mentoring is also an important element to assist and retain new employees.

Table 3: What Affect Open Source Journals have on Academic Librarianship (Susan K. Smith, University of Kentucky) This table found that there were more questions than answers when it came to this topic. They agreed that the National Institutes of Health policy will have

impact in this area, as well as embargo periods. Some federal organizations are forcing open access, and this raised many questions regarding resistance to change. They also recognized the growth of institutional repositories.

Table 4: Future of Library Space (Beth Bloom, Seton Hall University) This table recognized that the current trend currently of other entities (such as Information Technology) taking over and utilizing library space. More online collections also equate to a shrinking print reference collection.

Table 5: Skills of Future Librarians: What Library Schools Should be Teaching (Marie Sparks CAS) This table recognized that library schools are primarily teaching theory instead of practice, and most students come out needing more of a practical background. Future librarians need to be made aware that group work becomes teamwork. Additional subject areas to be taught include organizational/interpersonal relationships, communication, management, speaking/presentation skills, negotiating skills, space planning and advanced search techniques.

Table 6: Generational Differences in Staff and Patrons (Nancy Curtis) This table talked about the millennial culture, in particular the differences in styles of parenting with the "helicopter parent" phenomenon. They also decided that differences were more cultural milieu than generational.

Table 7: How to encourage students to pursue science/technology librarianship (Linda Maddux, Reed College Library) One innovative idea was to participate/create a venue to tell others about science librarianship, such as career dating (like speed dating for careers).

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Science & Technology Resources 101

Monday, June 16, 2008

Presented by: Science-Technology and Engineering Divisions

Sponsored by: IEEE

Speakers: Mary Frances Lembo, Hanford Technical Library Pacific Northwest National Laboratory and James Manasco, Ekstrom Library, Collection Development & Special Collections, University of Louisville

Reported by: Kelly Blessinger, Assistant Reference Coordinator, Louisiana State University

This year in Sci/Tech 101 Mary Frances Lembo and James Manasco discussed nanotechnology and aerospace resources.

Mary Frances began her presentation on nanotechnology resources with a brief definition. She pointed out that nanotechnology is multidisciplinary and can include fields such as physics, biochemistry and engineering. Mary Frances chose to primarily discuss resources involving physics. She showcased free websites such as DOE (Department of Energy) Patents: <http://www.osti.gov/doepatents/>; <http://www.science.gov/>, a federated search for many government agencies; and <http://worldwidescience.org/>, a gateway to over fifty million pages. She also demonstrated the usefulness in searching for this topic in subscription databases such as Compendex, CSA Materials Research Database, INSPEC and IEEE Xplore. Mary Frances mentioned that Compendex and Inspec users can now register for tools for collaboration (tags & groups). CSA and Compendex also are now SFX enabled (link resolving software). CSA also provides "discovery links" which allow for links to images and links to other databases.

Mary Frances went on to show some of the societies and associations related to nanotechnology, including the Center for Responsible Nanotechnology, the IEEE Nanotechnology Council, the International Association of Nanotechnology and the Materials Resources Society. These societies are helpful for obtaining information on current developments and events in the field and may include calls for papers.

Mary Frances gave examples of some of the leading journals in the field of nanotechnology

including Nano Letters [ACS]; SMALL [Wiley]; Lap on a Chip [Royal Society of Chemistry]; Biosensors and Bioelectronics [Elsevier] and Nanotechnology [Elsevier]. She concluded with other avenues for research in this field such as Science Daily(<http://www.sciencedaily.com>) and <http://www.azom.com/>, a site that gives the facts and not the hype.

James Monasco started his discussion of aerospace resources with a definition from Wikipedia. He then gave details on print materials for background information such as The Cambridge Aerospace Dictionary and The Standard Handbook for Aeronautical and Astronautical Engineers. James profiled useful websites such as <http://aerofiles.com/>, which details the history of military, civil and commercial aviation from 1903-present, <http://www.aerospaceweb.org/> and <http://www.astronautix.com/>, all useful for background information. He continued with some databases, indexes and abstracts that are available for a fee such as Aerospace & High Technology Database (1962-), AIAA Electronic Library, Web of Science and Compendex, which James described as the "mother database for engineering disciplines."

Other web information included the Homeland Security Digital Library's web site, available at <https://www.hsdl.org/>, the NASA Technical Reports Server at <http://ntrs.nasa.gov/>, and the Aerospace and Defence Engineering page at <http://www.intute.ac.uk/sciences/>, which provides abstracts for every weblink. James then went on to show some useful sites for US and International Patents such as <http://www.uspto.gov/patft/index.html>, <http://ep.espacenet.com/>, and <http://www.uspto.gov/web/menu/other.html>.

He also discussed societies that might be helpful such as the European Space Agency (<http://www.esa.int>), Royal Aeronautical Society (<http://www.raes.org.uk/>) and the Society of Flight Test Engineers (<http://www.sfte.org/>.) James concluded the session by giving a cluster of other websites that would be helpful for research in this field. For further information, the PowerPoint slides can be found on the Conference Handouts portion of the SLA website.



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Who Cited Whom and Where? – Citation Tracking Tools and Evaluation

Monday, June 16, 2008

Presented by: Science-Technology Division

Sponsored by: Thomson Reuters, Scientific and Elsevier, Inc.

Moderated by: Susan Fingerman

Reported by: Carol Lucke, Biological and Physical Sciences Reference Librarian,

Naval Research Laboratory Research Library, carol.lucke@nrl.navy.mil

This session was packed, with barely any standing room. Part one presented two speakers who have both written about and extensively used the citation analysis tools available to the library community. Part two consisted of three vendor presentations

The first speaker was Dana Roth, Chemistry Librarian at the California Institute of Technology and winner of this year's SLA Hall of Fame Award. Dana reprised and updated his well-known article in *Current Science* (89:9, p.1521, 2005), "The emergence of competitors to the Science Citation Index and the Web of Science" (<http://www.ias.ac.in/currsci/nov102005/1531.pdf>).

He first discussed multi-subject comprehensive databases like SciFinder, Scopus and Google Scholar, and demonstrated how to search each one to locate citations for specific authors or works. Subject specific databases that can be used for citation searching include the NASA ADS (Astrophysical Data System- <http://adswww.harvard.edu/>) which contains many more *Astrophysical Journal* articles than Web of Science; CiteSeer (<http://citeseerx.ist.psu.edu/>) which is specific for computer science literature; SPIRES HEP (High Energy Physics, from Stanford- <http://www.slac.stanford.edu/spires/>) and MathSciNet from the American Mathematical Society. Roth concluded by demonstrating the patent databases useful for citation gathering: Citation Bridge (<http://www.ias.ac.in/currsci/nov102005/1531.pdf>), US Patent and Trademark Office (check for the "Referenced by" to find citations <http://www.uspto.gov/>), esp@cenet (<http://ep.espacenet.com/>) which includes European, WorldWide, and WIPO (World Intellectual Property Office) patents and Google Patents (<http://www.google.com/patents>).

Dr. Kiduk Yang, the next speaker, is an assistant professor at the School of Library and Information Science (SLIS) at Indiana University (IU) and is the director of the WIDIT (Web Information

Discovery Integrated Tool) Research Laboratory (<http://widit.slis.indiana.edu/>). He spoke about the findings of his research project published in the *Journal of the American Society for Information Science and Technology*, (Meho, L. & Yang, K, 58(13), 2105-2125, 2007): "The impact of data sources on citation counts and rankings of LIS faculty: Web of Science vs. Scopus and Google Scholar."

Dr. Yang explained what many librarians recognize as the limitations of conventional citation analysis: it's a one-dimensional assessment which can effect a misleading evaluation, and there is little competition to the standard for citation analysis, Thomson's Web of Science. His research project took 1100 publications in journals and conference proceedings from the IU SLIS department and collected the citations to those papers, for the time period 1996-2005, from Web of Science, Scopus and Google Scholar.

His findings indicate:

- Scopus had 14% more citations
- There is a 56% overlap and 42% uniqueness between WoS and Scopus
- Scopus covers a larger percentage of conference papers
- An individual's citation count can vary from 5% to 99% by combining the counts of the two databases and removing duplicates
- Google Scholar had twice as many unique citations as the union of WoS and Scopus
- Adding in nonduplicated citations from Google Scholar can increase the citation count from the union of WoS and Scopus by as much as 93%
- There are many more non-English citation counts in Google Scholar

While it took from 100 to 300 hours to obtain and remove duplicates from the union of WoS and Scopus citations, it took over 3000 hours to clean up the resulting citation counts from Google Scholar for the 1100 publications. While the three databases can complement each other in attaining the most accurate citation counts for our patrons, the amount of work needed to maximize the count is significant. He is working on a CiteSearch system to refine the search strategy, parse search results, eliminate duplicate citations and extract and normalize citation metadata. Check out Dr. Yang's web page at: <http://www.slis.indiana.edu/faculty/spotlight/index.php?facid=22>

The first vendor to speak was graduate student Jevin West from the University of Washington (UW) in Seattle (<http://www.biology.washington.edu/index.html?navID=41&parecID=804>). He is one of the developers of EigenFactor (<http://www.eigenfactor.org/>), a freely available journal analysis tool from Carl Bergstrom of UW. EigenFactor evaluates journals based on following citations to the journals where those citations occur. Much like Google evaluates the links to a specific website to rank it, EigenFactor assesses the journals that cite a particular article, who cites them, and so on. The resulting "Eigen Factor" a journal receives is a measure not only of its citation performance, but also its price, adjustments for differences in citation numbers across disciplines and uses five year data instead of two. Jevin also demonstrated some new developments coming to EigenFactor that will allow tracking of a journal's influence and links through time. Check out this great FREE tool.

Helen de Mooij, Scopus Product Manager, Elsevier, Amsterdam, demonstrated the newest enhancements to Scopus: Author and affiliation search refinements, citation tracker and, the newest, the journal analyzer. A user can select

up to ten journals and graphically view their performances for any time period from 1996 to the present. Check out this website for a more detailed explanation: <http://info.scopus.com/journalanalyzer/>.

Ann Kushmerick, Manager, Research Evaluation and Bibliometric Data Global Sales Support for Thomson Reuters, finished out the session with descriptions of new and upcoming improvements to Web of Science. Thomson is offering a free website, Researcher ID (<http://www.researcherid.com/>), at which researchers can register and be assigned a unique ID. The goal is to prevent the common problem of author misidentification. She briefly presented some new enhancements: analyze results, citation report and citation tree (to be released soon). A new product called the Institutional Citation Reports Database offers a new bibliometric measure, the C Index. This customized tool normalizes citation counts across scientific fields and takes into account that some sciences are more highly cited than others.

Look for these informative presentations on the Sci-Tech Division website.

Science of Coffee

Monday, June 16, 2008

Presented by: Science-Technology, Physics-Astronomy-Mathematics, Food, Agriculture & Nutrition, Biomedical & Life Sciences, Chemistry, and Pharmaceutical & Health Technology Divisions

Sponsored by: Prenax, Inc., New England Journal of Medicine, John Wiley & Sons, Inc., Blackwell, Annual Reviews, and Nature Publishing Group

Reported by: Carol Lucke, Biological and Physical Sciences Reference Librarian, Naval Research Laboratory Research Library, carol.lucke@nrl.navy.mil

A lively session, the Science of Coffee was presented by Dr. Joe Vinson of the University of Scranton. Nature handed out a compilation of coffee articles recently published in Nature magazine. Coffee was available for all listeners.

Dr. Vinson is an analytical chemist who teaches at the University of Scranton in Pennsylvania. His undergraduate work in chemistry was completed at the University of California, Berkeley during the "free speech 60's," and he attained his Ph.D.

in Physical, Organic and Analytical Chemistry at Iowa State University, Ames, Iowa. A member of the American Chemical Society's Speakers Bureau, Dr. Vinson often gives presentation on the science of coffee, as well chocolate, and has authored numerous scholarly articles. Please visit his website for more information: <http://academic.scranton.edu/faculty/VINSON/>

After listing the general reasons coffee is so popular (a habit, to get going, as a pick-me-up) Dr. Vinson began with an historical overview of the coffee bean. The origin of the name has a couple of possibilities: from the Arabic quahwa (for wine) or possibly it was named for the Kaffa region of Ethiopia where it was first gathered, roasted, watered and tasted around 1000 BC. The first coffee house was in Istanbul, Turkey, and Pope Clement the VIII is credited with popularizing coffee in the late 1500's. When asked to declare coffee the "bitter invention of the devil" because of its popularity among Muslims, he first decided to try it. Reportedly he liked it so much that he "baptized it" in order to "cheat the devil."

Other bits of coffee trivia include:

- The shutting of 2000 coffee houses in London after a women's petition against coffee
- Cappuccino originated when Vienna was rescued from the Turks in 1683. The rescuers were led by a Capuchin monk. When the Turks left their coffee behind, the monk tried it with milk and cappuccino was born.
- In 1714 Louis XIV received coffee trees as a gift and sent them to Martinique: the first coffee cultivation in the New World.
- The Boston Tea Party led to the preference for coffee in the US
- Germans developed the decaffeination process
- Admiral Joe Davis of the US Navy outlawed "grog" for sailors on duty and told them to drink coffee: hence a "cup of Joe"
- Voltaire drank 40 cups of coffee a day

After treating the audience to many interesting statistics about coffee (What country consumes the most? Finland), Dr. Vinson began our basic chemistry lesson. Chlorogenic Acid is the major antioxidant found in coffee. Free radicals are normal by-products of cells burning oxygen. Free radicals attract electrons from other molecules, thus causing damage to the body. Antioxidants capture free radicals and short circuit the damage. Antioxidants make up about 40% of a serving of coffee, more than other antioxidant donor (listed in descending order of percentage of antioxidants): tea, chocolate,

bananas, dry beans, corn, lager beer, red wine, apples, tomatoes and potatoes.

Coffee also contains caffeine (about 80 milligrams per serving). Caffeine is steroid oil which acts as a stimulant. Studies have shown that the brain actually changes after coffee ingestion: there is improvement in one's ability to perform complex tasks, a more positive attitude can be measured and a recent French study indicates that caffeine may actually slow the decline of memory due to the aging process. A Finnish study indicates that 3 cups a day are optimal for slowing cognitive decline.

Why does caffeine stimulate you? It appears that caffeine binds to the sleep inducer receptor in the brain. Just the smell of coffee (or chocolate) has been shown to increase the accuracy and speed of typing, and to reduce stress.

Other benefits? Caffeine increases sports endurance and is a legally allowed stimulant for Olympic athletes. The risk of Type 2 (adult onset) diabetes is lower for coffee drinkers. While caffeine slightly raises blood pressure, the antioxidants in coffee blunt that effect. Sexual function in the elderly has been shown to increase with 1 cup of coffee per day. Coffee is NOT linked to heart disease, cancer or osteoporosis.

So pour yourself a cup of coffee, check out www.cosic.org from the Institute for Scientific Information on Coffee and then go to the Sci-Tech Division website for the presentation slides.

E-Science, Cyberinfrastructure and Information Professionals

This symposium series encompassed four sessions spread out over Monday through Wednesday, and sponsored by different combinations of Divisions. It was a huge, very successful and innovative effort.- *ed.*

Cyberinfrastructure: Building Bridges

Monday, June 16

Presented by: Engineering and Biomedical & Life Sciences Divisions

Sponsored by: Basch Subscriptions, inc.

Moderated and Reported by: Daureen Nesdill, and April Love, University of Utah

The NSF Office of Cyberinfrastructure developed the Sustainable Digital Data Preservation and Access Network Partners (DataNet Partners) program, over which Lucy Nowell is Director. She explained how the program supports projects

that will integrate the expertise of scientists with that of information professionals and experts working in cyberinfrastructure, computer and information sciences to establish protocols that will provide reliable preservation and access to digital data.

Dr. Nowell began her talk with the film clip *Did You Know?* It bombarded us with astounding statistical one-liners about the changes resulting from the use of computers. Did you know that 70% of four-year-olds have used computers? This led to a discussion of infrastructure – roads, utilities, water and now the grid. The grid is the infrastructure that allows scholars and researchers to communicate, conduct research, and acquire data from sources worldwide using the net. Larger corporations have already constructed infrastructures to facilitate

communication and the sharing of information – they just haven't labeled it cyberinfrastructure or e-science.

Laboratories, dance studios, observatories, professional societies, communications media, museums, computational infrastructure, and, yes, libraries make up the research infrastructure. Libraries' infrastructure includes the online catalog, citation databases, online journals and books, computer network services, email, IM, wikis, blogs, and of course Google and other search engines. The computational infrastructure is becoming even more important to us as information professionals. The Internet, local networks, high performance computers, middleware, virtual organizations and data comprise the computational infrastructure.

The data arena is where information professionals have a growing role. Think of all the data generated from research efforts and paid for by tax dollars or, in the case of corporations, the price of a product or service. What happens to all the data generated after research projects have been completed? We have all heard how NASA lost more than 13,000 tapes from the Apollo moon missions. By contrast consider global warming. Because we do have some data for comparison studies from decades past, we know about the changes in global weather, the shrinking of glaciers, etc.

Cyberinfrastructure: Informatics Across the Biological Science

Tuesday, June 17

Presented by: Engineering,
Biomedical & Life Sciences,
Knowledge Management,
Pharmaceutical & Health
Technology, Physics-Astronomy-
Mathematics Divisions and
Natural History Caucus

Sponsored by: IEEE, Elsevier,
Inc.

Moderated by: Ruth Gustafson,
University of California, Davis

The Tuesday morning session
introduced us to informatics.

Catherine N. Norton, Library Director of the Marine Biological Laboratory, Woods Hole Oceanographic Institution, spoke first on biodiversity informatics. She began by showing the Encyclopedia of Life (EOL), a digital library of all species. The EOL project is made up of five component groups or subprojects. The Species Sites Group, the Biodiversity Informatics Group, Scanning and Digitization Group, Education and Outreach Group, and the Biodiversity Synthesis Group are working together to provide access to all published information about any named species. The problem is that an organism can be identified by multiple names. The difference between scientific and common names is understood, with the scientific name being the authoritative name, but many species have multiple scientific names. This is where biodiversity informatics comes into play. NameBank is a biological name server authority file that is able to merge the various names of species from all known resources. NameBank

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Related URLs

Agenda for Developing E-Science in Research Libraries: ARL Joint Task Force on Library Support for E-Science Final Report & Recommendations, Nov. 2007

http://www.arl.org/bm~doc/ARL_EScience_final.pdf

Biodiversity Heritage Library

<http://biodiversitylibrary.org/>

Cyberinfrastructure Vision for 21st Century Discovery

<http://www.nsf.gov/pubs/2007/nsf0728/index.jsp>

Did You Know?

<http://www.public.iastate.edu/%7Emcleod/didyouknow/>

Encyclopedia of Life (EOL)

<http://www.eol.org/index>

NameBank

<http://www.ubio.org/index.php?pagename=namebank>

NSF Office of Cyberinfrastructure

<http://www.nsf.gov/dir/index.jsp?org=OCI>

Open source ELN software developed by Pacific Northwest National Laboratory

<http://collaboratory.emsl.pnl.gov/software/eln/>

Planetary Biodiversity Inventories (PBI)

<http://www.nsf.gov/pubs/2006/nsf06500/nsf06500.htm>

Science Commons

<http://sciencecommons.org>

Understanding Infrastructure: Dynamics, Tensions, and Design

<http://deepblue.lib.umich.edu/handle/2027.42/49353>

U.S. Long Term Ecological Research Network (LTER)

<http://www.lternet.edu/>

now contains 10.7 million names.

Quentin B. Wheeler, Vice President and Dean at Arizona State University, continued the discussion

of biodiversity informatics from a slightly different perspective. He discussed two of the most recent taxonomy projects, the Planetary Biodiversity Inventories (PBI) sponsored by the NSF, and the International Institute for Species Exploration (IISE) at Arizona State University. Both endeavors are utilizing cyberinfrastructure to build inventories of earth's species for the purpose of study. These inventories include specimens and data of all species and subspecies including domestic plants and animals.

Neil Rambo, University of Washington Libraries, spoke on academic library support for bioscience research. The new demands on libraries, including data management, preservation and curation need to be addressed. [See Wednesday's session for continuation of this talk]

William Michener of the Biology Department at the University of New Mexico spoke of longitudinal studies during the session. The U.S. Long Term Ecological Research (LTER) Network, initiated in 1980, is a network supporting the collaborative research of 1800 researchers at 26 sites around the country investigating ecological processes over long temporal and broad spatial scales. The Network facilitates the preservation and sharing of these large datasets.

Replication of experiments, such as the LTER studies, can be expensive. By preserving and sharing data, the overall cost of research is reduced. Cyberinfrastructure facilitates both interdisciplinary studies across geopolitical boundaries and the sharing of preserved data. This in turn promotes participation by those researchers and students in geographically isolated institutions and at institutions not able to afford expensive scientific equipment.

Cyberinfrastructure: Breaking Rules, Building Bridges for Both Corporate and Academic Librarians

Wednesday, June 18

Presented by: Engineering and Information Technology Divisions

Sponsored by: IEEE

Moderated by Daureen Nesdill, University of Utah

Lee Dirks, Director, Scholarly Communications at Microsoft Corporation, explained how the archiving of data will not only allow research to be interdisciplinary and conducted on a global scale, but will also allow for access to complete datasets.

Lee reported that the U.S. Interagency Working Group on Digital Data (IWGDD) is working towards storing all research data generated by federal agencies in publicly accessible repositories. The increasing call for research-generated data to be accessible and preserved requires the expertise of information professionals.

At the same session Neil H. Rambo, Director of Cyberinfrastructure Initiatives at the University of Washington Libraries, discussed the strengths of information professionals. Working with open access has provided experience working globally, developing policy and best practices and creating repositories. Standards and interoperability tools have been mastered. Understanding the life cycle of information, archiving, preservation and cataloging are skills that have long been practiced by information professionals.

Dr. Rambo continued his talk on opportunities for information professionals to become involved in research. The basis for his talk was the "ARL: Report of the Joint Task Force on Library Support for E-Science". In addition to "managing research assets" (i.e. data curation) the task force suggested that information professionals support emerging communication and publication formats (blogs and journals with links to associated data that can be manipulated) and virtual organizations (collaboration tools). Information professionals are in a position to contribute to policy development (open access, ScienceCommons).

Lee Dirks discussed ScienceCommons in greater detail. Cyberinfrastructure, or as Lee referred to it, "collaborative infrastructure," involves more than just the hardware. It involves the legal and policy infrastructure that supports sharing. The goal of the ScienceCommons is to develop policies for a decentralized collaborative infrastructure that will facilitate the discovery and reuse of data – autonomous sharing. NSF is a player with its Global Science Data Network Infrastructure.

Cyberinfrastructure is changing the work of information professionals in both corporate and academic settings. In the corporate world, proprietary research results are the norm whereas in academia research results are published in a public forum. But, in academia the shift towards technology transfer is changing what will be public – or allowed to be shared. Information professionals are in a position to influence the outcomes and we should not be hesitant to speak.

Daureen Nesdill
April Love
University of Utah
J. Willard Marriott Library

[ED Note: see separate report on Cyberinfrastructure: Everything You Need to Know About Electronic Laboratory Notebooks]

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Cyberinfrastructure: Everything You Need to Know About Electronic Laboratory Notebooks

Monday, 16 June 2008

Presented by: Chemistry, Engineering, Food, Agriculture and Nutrition, and Physics-Astronomy-Mathematics Divisions

Sponsored by: Thomson Reuters

Moderated by: Rachel Ellison, Ecolab, Inc.

Reported by: Jeanine M. Scaramozzino, Research Librarian for Physics, Astronomy & Mathematics, The UCI Libraries, jscaramo@uci.edu

Michael Elliot, CEO of Atrium Research and Consulting, was the opening speaker for this session. He discussed his experience as an electronic laboratory notebook consultant and developer in "Electronic Laboratory Notebooks: Market and Technology Overview" (<http://www.atriumresearch.com/library/AtriumResearchSLA2008%20Rev%202.pdf>).

Electronic library notebooks (ELN) were described as an effective tool for knowledge capture and the use of research data, including failed processes. Currently ELN use varies in industry between science-based R&D (22%), biopharmaceutical (27%), synthetic chemistry (35%), government (4%), academia (4%), and quality assurance/quality control (9%). ELNs usually have either non-specific ELN characteristics such as "generic", strong IP protection or e-signatures, competition against paper workbooks, content management to share results; or specific ELN characteristics, though some users find this disruptive because they are forced to use computer data entry screens instead of "regular" lab notebook entry.

Elliot described three groups of ELN software: top-tier (CambridgeSoft, IDBS, Symyx, VelQuest), second-tier (Agilent, Contur, LABTrack, Kinematik, Labtronics, Rescentris, Siemens, Waters), and custom development platforms (Microsoft SharePoint, EMC Documentum, OpenText Livelink). Some ELN software has features attractive to certain researchers, such as IDBS used by biologists, CambridgeSoft favored for chemistry, and VelQuest for regulated laboratory compliance such as FDA monitored studies.

A lack of standardization for long term record preservation among software developers is a major challenge to implementation of ELNs. Archival data is often stored in PDF/A but these formats fail for dynamic data (such as video, numerical data, computer code). No vendor

has "best in class" functionality across multiple domains so no one product may work for all customers. Elliot commented on academia's slow adoption of ELN. Graduate students and post doctoral researchers who move to industries that rely on ELN use would benefit from earlier experiences.

Elliot discussed December 2006 changes in the US Federal Rules of Civil Procedure (FRCP) that specifically addressed electronic record discovery during civil and criminal legal actions. E-records are increasingly accepted as documents of record, raising the potential for changes to US Patent laws to allow electronic documentation. However, organizations must pay proper attention to records management to prove compliance. Some companies become "sloppy" after implementing ELNs, assuming that the technology will solve all records management issues. ELN is a powerful tool, but organizations must have established rules and policies for intellectual property protection.

Research is currently being conducted on the benefits of ELN. Usage studies show that implementing ELN properly can improve workflow by providing more time to conduct experiments instead of completing paperwork. In a survey of users of an ELN at the University of Cincinnati Biomedical Research Center, users reported that time available to work on experiments increased 43.8% over previous paper-based reporting. The biggest challenge is the need to overcome the cultural barriers where ELNs are being implemented. Implementation advice is to start small, show success and build from there – the "spiral" approach.

Carl Voigt presented "Electronic Laboratory Notebook – Eastman Chemical Experience". He described the company's implementation of the CambridgeSoft E-Notebook platform, shared his product experience, and provided recommendations about successful timing and phase implementation when adopting an ELN. Eastman selected CambridgeSoft's E-Notebook (Ver. 9) for its electronic signing and witnessing features, offline operation capabilities, ability to work with common desktop applications (ex. Microsoft Office Suite, PDF, TIFF, ChemDraw), and ability to collect electronic files documenting experimental results, including the supporting data.

Voigt shared issues and lessons learned regarding the initial implementation. These were:

(1) use the recommended software configurations for initial installations and allow time for adjustments, (2) schedule the required training time for users, (3) be aware that not all analytical data can be imported into the software, (4) know that not all data can be uploaded directly from

bench to information management systems, (5) initially there may be challenges due to cultural issues with researchers around "sharing" and technical support requirements, (6) there may be initial resistance from researchers but he found that most realized the benefits of easy accessibility to work from technicians within their groups.

Computer Science Roundtable

Tuesday, June 17 2008

Presented by: Science-Technology, Engineering, Information Technology and Physics-Astronomy-Mathematics Divisions

Sponsored by: IEEE, ACM

Moderated by: Nancy Kellett, Florida State University

Reported by: Daniel Dotson, The Ohio State University

1. Ebooks as Textbooks

Some people are using ebooks as textbooks. Some of the problems identified include searching issues, i.e. students have trouble finding information, turnaways/user limits, and federated searching. Some ebooks are rented content that students can purchase access to for a specified time period. The general consensus was that they may work better for supplemental information.

2. Lecture Notes in Computer Science (LNCS)

Members of the group expressed the need for individual records for LNCS electronic volumes in the catalog, which would hopefully drive up usage. Some problems were noted with the search engine, federated searching, and not working correctly with some databases, including Google Scholar and WorldCat Local.

3. ACM & searching

People have noted some changes in the ACM search engine and other potential changes are in the works, such as facets. There was a general consensus on the need for more communication from ACM. Other issues discussed include the need for more information in author profiles, institutional views, and open linking.

4. Database errors – collaborate and correct?

Issues discussed included:

Sending problems to tech support

Poor problem support from ACM

Massive data problems in Scopus

The need for contacts for editorial feedback (as opposed to tech support)

Compendex and IEE/IET links

INSPEC (Ovid) and link resolvers

Name changes of journals (including changing the titles of old journals to the new title, creating possible confusion)

5. Survey Results – Home for Computer Science

Parker Ladwig lead the presentation and discussion of the results of the survey on a home for computer science in SLA. Most of the respondents to the survey were members of PAM, followed by SciTech, IT, and Engineering Divisions. A majority of those surveyed believed that the current level of support for computer science within SLA was adequate.

The majority felt that computer science belongs in one division – but not its own division. There was no majority opinion as to which division. The idea of making computer science a section within a division was also brought up. The idea of having a computer science listserv was brought up and this will be examined.

Hot Science Technology Sampler

Monday, June 16, 2008

Presented by: Chemistry, Biomedical & Life Science and Information Technology Divisions

Sponsored by: Thomson Reuters, Scientific, Nature Publishing Group

Reported by: Jeanine M. Scaramozzino, Research Librarian for Physics, Astronomy & Mathematics, The UCI Libraries, jscaramo@uci.edu

Royal Society of Chemistry

Richard Kidd of the Royal Society of Chemistry (RSC) discussed the Society's role in providing free teaching material and his ideas on the trajectory of society publishers. He described RSC's Project Prospect with its enhanced teaching tools for approximately 6,000 articles from 2007-present. The project includes: enhanced HTML article displays including gene and biological ontology terms and compound details; a new structure search option that allows searching by SMILES codes or displaying exact or close match results; text mining; links to patent information in SureChem; and structure download into ChemDraw. Future enhancements are planned, such as preparation recipes and related compound searches. Project Prospect will be available to subscribers at no additional cost. It demonstrates some of the possible ways to help users discover material they need by overcoming the problems of current database indexing. Other notes of interest included mention of a RSC project called SciBorg (<http://www.sciborg.org.uk/>) that uses data mining to extract materials from scientific publications. RSC's recently added titles have generated strong impact factors for 2007: *Soft Matter* (IP +5.0) and *Molecular Biosystems* (IP ~3.0). The Society is introducing three new titles: *Energy & Environmental Science* in July 2008, and *Metallonomics* (Materials) and *Integrative Biology* (Chemical Biology) in 2009.

Health Island Science Library in Second Life

Carol Perryman of the Allied Library System, community health librarian in the Health Island Science Library, discussed current medical library reference and consumer health initiatives in Second Life. These included National Library of Medicine outreach programs on technology mentoring, and training for people with disabilities and chronic medical conditions to allow for better accessibility to information. The Consumer Health Library has art displays on medical conditions such as depression, classroom instruction on the use of PubMed,

AIDS/HIV support groups, and general health information literacy tools for the lay person and more. Perryman discussed the various challenges and issues librarians face in a virtual world, including the danger of success, and how to get started.

Nature Publishing Group

Hillary Spencer of Nature Publishing Group discussed *Nature Precedings* (<http://precedings.nature.com/>), a free service initiated in June 2007 to collect grey literature, monograph manuscripts, pre-prints, conference posters, and slide presentations. *Nature Precedings* was described as "grey literature 2.0". It allows users to add and utilize commentaries, tagging, voting and RSS feeds, email alerts, social networking, Dublin Core Metadata, etc. The site acts as a free creative commons with full text that is centralized, easily searchable, provides access to timely research that is not peer reviewed or copyrighted, and allow authors to post newer versions of materials. Author benefits are numerous. The site provides third party provenance of ideas, allows ideas greater exposure, provides for pre-publication feedback/commentary, and is a repository for null or negative results. Author concerns include: being "scooped" by others, the potential for plagiarism, general discomfort with sharing online, fear that contributing to the site might prevent publication due to rules regarding pre-prints, etc.

Thomson Reuters

Bob Stewart of Thomson Reuters discussed Enterprise Alerts Manager. It uses RSS to manage and organize flows of information from numerous feed sources (database, internet, or internal source). Centralized content management includes credentialing, information feeds for specific content, editorial news, mobile delivery of content, group feed reporting, and administrative control of user subscriptions. The product makes it easy to review, annotate and share content from multiple sources, attach articles with comments, and target selections to specific groups. The product feeds directly into MS Outlook and the result looks like email, giving information professionals a content distribution solution that decreases email load.

Boeing Library Services

Josh Walters of Boeing Library Services presented "Blending 2.0 Processes with 1.0 Tools". He described using existing "1.0" technologies to create custom library web pages with a "2.0"

character and to provide an instructional bridge for institutional cultures that are moving towards "2.0". Library Services provides company groups with communication tools for their specific projects or research areas. Such customization acts as a "Search Integrator" that can introduce process and access controls, build custom search widgets, construct group landing pages, recreate special collections, create catalogs and group custom views for information resources, etc. Services are available a la carte (custom landing page, special collections, Access contact

list, administrative panel) or in bundles (Special Collections Suite, Significant Body of Work collections, My Library pages). The Library gives working groups a common place to upload their "knowledge" and this information is thus "donated" to the library. This allows for a significant body of work to become archived knowledge and a scientific/historical page for future reference. These services create a stake in the library for users and build support of the library.

Standards Update

Monday, June 16, 2008

Presented by: Engineering, and Petroleum & Energy Resources Divisions

Sponsored by: American Society of Civil Engineers (ASCE) and The Scientific Business of Thomson Reuters.

Moderator and Reporter: Lee Pharis, Manager, Information Resources, Exponent, Menlo Park, CA, lpharis@exponent.com.

ASCE – Bill Nara, Marketing, wnara@asce.org
<http://www.asce.org>

American Society of Civil Engineers (ASCE) has 55 standards. ASCE 7 "Minimum Design Loads for Buildings and Other Structures" is "the"

The Standards Update drew about 85 attendees this year. Thanks very much to Daureen Neddill, Engineering Division Chair, for ensuring an appropriately sized room. Nine speakers, representing both standards developing organizations (SDOs) and distributors, shared this past year's highlights and took questions from the audience.

ANSI – Leanne Lowry, Marketing Manager, llowry@ansi.org.
<http://www.ansi.org>

ANSI is not an SDO, but accredits SDOs with expertise in particular subject areas to write and maintain technical documents relating to those industries. Leanne described ANSI's purpose and coverage, and mentioned that ANSI has compiled ISO 14000 into interactive sections on the web. This is the environmental management standard, containing over 20 guidelines and procedures including life cycle assessment, greenhouse gases, communication guidelines and the integration of environmental aspects into product design and development.

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standard pertaining to minimum design loads. Last revised in 2005, this standard has changed to a longer, approximately 5-year, revision cycle. It is published with every other edition of the International Building Code (IBC).

FEMA 356 is now SEI/ASCE 41-06, and FEMA 310 is SEI/ASCE 31-03. These are national consensus standards in their final forms. SEI/ASCE Standards 41-06 and 31-03 were developed from the FEMA pre-standards and represent state-of-the-art knowledge in seismic engineering.

ASME – Philip DiVietro, Managing Director, Publishing, divietrop@asme.org.
<http://www.asme.org>

American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code (BPVC) supplements have been released on time. The 2010 BPVC will be released in XML. New standards relating to national security and the biomedical and pharmaceutical industries are in development. ASME standards are developed in an "honest broker" fashion, meaning one does not need to be an ASME member to contribute. Half of the contributors are not members.

ASTM International – John Pace, VP Publications & Marketing, jpace@astm.org.
<http://www.astm.org>

Almost half of the American Society for Testing and Materials' (ASTM) business is outside the U.S. They offer about 12,000 standards and test methods, and continue branching into new areas using new technology delivery modes, e.g. portals. Globally, ASTM is working with several other SDOs to develop and market specific packages or portal offerings. One example is a joint effort with DIN [German Standards] to develop a comprehensive toy safety standard package including both ASTM and European standards and regulations. ASTM is aggressively working on translations of its standards into additional languages such as Spanish, Chinese and Russian. These translated standards are "double-branded" with copyright and authentication to provide controlled, official versions of the translations.

ASTM's relationship with the Copyright Clearance Center is dissolved, so users with CCC annual licensing are no longer covered for redistribution of ASTM publications. ASTM's approach to digital rights management (DRM) has been education,

with perceived infractions met with cease-and-desist admonitions. Contact ASTM with any questions

East View Information Services – Carolyn Fennell, Marketer, carolyn.fennell@eastview.com.
<http://www.eastview.com>

East View provides information resources from Russia, China, and the countries of Eurasia. Purchase standards online from Russia (State Standards of the Russian Federation, a.k.a. GOST), and soon, from China. Descriptions of the 23,000 Russian standards can be browsed in English. If English is needed but not in stock, a translation can be purchased from East View. Publications are provided in PDF, FTP, and hard copy, and can be expedited. Carolyn gave the audience \$5 coupons for 5 minutes of their time to complete a survey - you should have been there!

IEEE – Michael Spada, Director of Product Marketing, m.spada@ieee.org. <http://www.ieee.org>

IEEE has nearly 1,300 standards and projects under development in both traditional and emerging fields, and is working closely with international organizations like ISO to make its standards more widely adopted. Individual standards or subscriptions are accessible directly from IEEE via www.ieee.org/ieeexplore. Draft standards are now available as a package to IEEE/IET Electronic Library (IEL) subscribers. IEEE is also offering a customized package called "Standards Choice," that enables a user to download any active, draft or archived IEEE standards on a variety of topics. Michael had a short, fun contest, with two winners receiving high quality prizes. You really should have been there!

IHS – Steve Noth, Product Development, Steven.Noth@ihs.com.
<http://www.ihs.com>

IHS has merged its two divisions of single documents and subscriptions distribution. In the last 18 months, IHS has made 14 acquisitions of other content companies, including Jane's Information Group.

"IHS Standards Expert", a standards and technical content management tool, is fully rolled out. NASA is so impressed with this tool

that it has customized it to include their own standards and content within their firewall.

Linda Hall Library – Chris Olson, Reference Librarian, olsonc@lindahall.org
<http://www.lindahall.org/>

The archival standards collection housed by the Linda Hall Library (LHL) are the most requested. The LHL librarians have embarked on a standards cataloging project with OCLC using Leonardo, Linda Hall's online catalog. Bibliographic reference is also a strength and the librarians can assist in identifying which standards you need or help piece together a standard's history.

Techstreet, a business of Thomson Reuters
– Andrew Bank, Director, Business Development, Andrew.Bank@thomson.com and Brian Kelley, Global Account Manager, brian.kelley@thomsonreuters.com.
<http://www.techstreet.com/>

Techstreet will begin offering "BuildingBlocks" subscriptions. Clients will pay one upfront fee and then build-as-you-go through the license period. This plan is a good fit for organizations that need to populate their subscription as the need arises, without additional fees.

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Wanted: SciTech News Editor

The Science-Technology Division, the Chemistry Division, the Engineering Division, the Aerospace Section of the Engineering Division, the Materials Research and Manufacturing Section of the Chemistry Division of the Special Libraries Association are seeking a person to assume the duties of Editor of *SciTech News*, starting with the February 2009 issue. The publication is included in H.W. Wilson's Library Literature Index and has a circulation of approximately 1,300. The journal serves as a communication tool for the participating units and non-member subscribers, as well as an information clearinghouse, including articles (peer-reviewed and not), book reviews and other items of interest to the scientific and technical library community.

Responsibilities

The editor is responsible for the editing and the arrangement of materials submitted by the participating divisions, as well as for the procurement, editing and arrangement of additional materials obtained from other sources. The editor is also responsible for the accuracy and appearance of the completed issues and ensuring that the journal is published in accordance with the established publications schedule. Additional responsibilities include but are not limited to adhering to the budget, overseeing the financial status of the publication, maintaining the subscription list and mediating claims, and consulting with the participating divisions. The editor serves on the advisory boards of the Science-Technical Division and the Engineering Division as Bulletin Editor.

The position is part-time, with the bulk of the work occurring on a quarterly basis as issues are prepared for publication. Time spent on each issue will vary depending on the amount of material included and other factors.

Qualifications

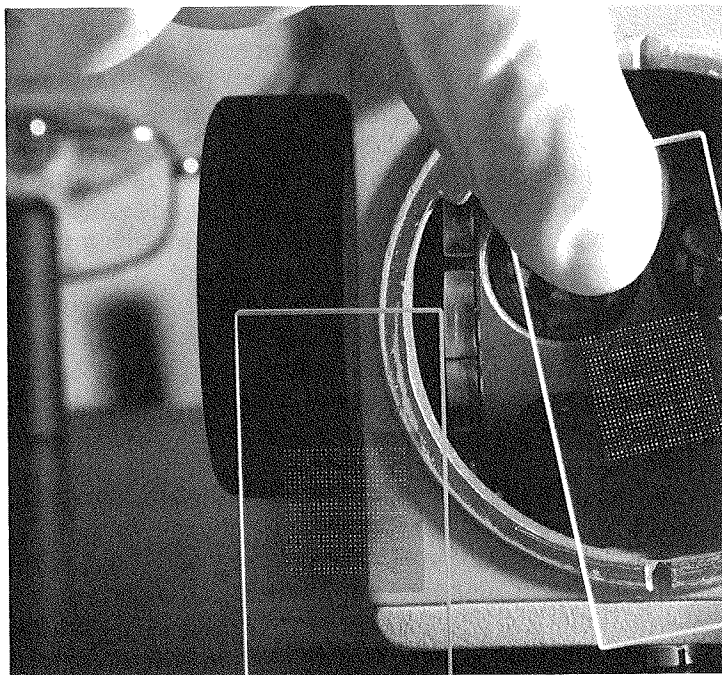
The editor should be experienced in the layout, formatting, design and editing of printed and online materials. The editor should have experience utilizing the skills and techniques required to locate and obtain additional sources, articles and related materials to enhance materials submitted by the participating divisions. Management and communication skills are required for working with division representatives, as well as outside contributors and advertisers. Ability to meet deadlines and manage budgets is essential to the successful completion of the editor's responsibilities. Skills in the area of visual appearance and content management are also required. A background in the sciences or engineering as well as familiarity with the literature of these disciplines is highly recommended. Membership in the Special Libraries Association and the Science-Technology Division will be required of the successful candidate.

A modest stipend will be provided. For additional information on the position or to submit a letter of interest outlining qualifications for the position, please contact:

Christine Whitaker
Collection Development Librarian
School of Medicine Library
University of South Carolina
Columbia, SC 29208
CWHITAKER@gw.med.sc.edu
803-733-3346

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Chemistry Division

Sue Cardinal, Chair



The Chemistry Division is concerned with chemistry and chemical technology, and the economics, educational advances, and information handling of developments in the field of chemistry and related subjects.

Greetings from Rochester, NY.

The SLA Seattle Conference was wonderful! Thanks to all the volunteers that made this happen. Congratulations to Carrie Newsom, ACS Professional Development Award Winner; to Margaret Smith, Sparks Awards Winner; to Bing Wang, 2008 Diversity Leadership and Development Program Award Winner; and to Dana Roth, a new member of the SLA Hall of Fame. A special thanks to our sponsors Elsevier, Nature, SRI Consulting, ACS Publications, Royal Society of Chemistry, Wiley, Chemical Abstracts Service, and Thomson Reuters for much needed support.

If you missed the conference, some materials are or will be posted to the web.

- Alternate Fuels presentations are posted by the Transportation Division at <http://units.sla.org/division/dtrn/seattle08.html#altfuel>
- See a future edition of ACS's LiveWire (<http://pubs.acs.org/4librarians/livewire/>) for an interview with Carrie Newsom and song lyrics for "He is the Very Model of a Chemistry Librarian" dedicated to Bartow Culp on his retirement. The lyrics were written by Judith Currano and performed by Judith and Ted Baldwin at the Networking Reception.
- Stay tuned for a web version of the poster session. Tentative dates are October 6 - November 11, 2008. See <http://forum.lib.lsu.edu/slachem/> I hope you can join us for this. Thank you to Bill Armstrong for leading this initiative.

Welcome to our new Sponsorship Chair, Loren Mendelsohn. Ted Baldwin, our new Professional Development Chair, plans to investigate providing CE courses through Click University. Judith Currano, our new Membership Chair, plans to conduct a membership survey. Meghan Lafferty, our Newsletter Editor, is looking for articles for our newsletter. Linda Shackle, Strategic Planning Chair, plans to update our strategic plan. Sophia Guevara, soon-to-be Webmaster, has started the Professional Partnerships Project Wiki at <http://wiki.sla.org/display/SLACHEM/Professional+Partnerships+Project>

Want to be involved in the next conference in Washington, D.C.? Contact Luray Minkiewicz, Chair-Elect 2008, Susan Makar, Program Planner 2009 or Cathy DiPalma, MRM Section Chair-Elect 2008 and Program Planner 2009, about opportunities to present, moderate, organize dinners, and assist our board.

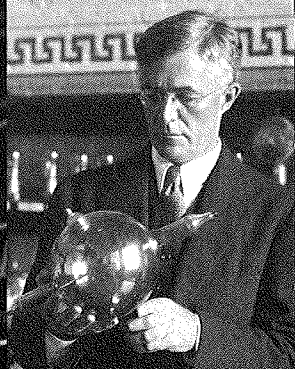
On a personal note, I am seven months pregnant! I am still smiling from the surprise shower given by the Chemistry Division Board at the end of the board meeting. I am also grateful to several individuals who assisted with luggage and moral support. What a great bunch of people to work with. ❖

Sue Cardinal
DCHE Chair 2008

A Legacy of Excellence

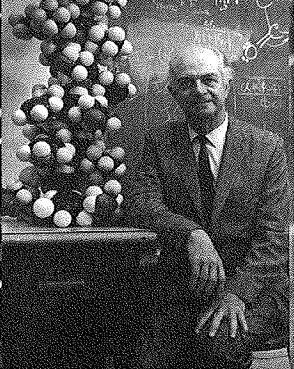
An unparalleled record of achievements
in chemistry and its related disciplines

Irving Langmuir



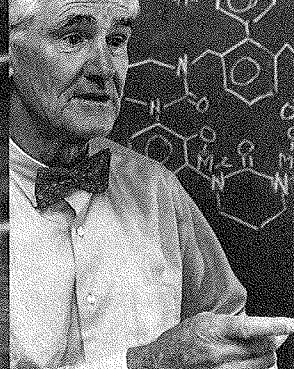
Awarded the Nobel Prize in Chemistry in 1932 for discoveries and investigations in surface chemistry.

Linus Pauling



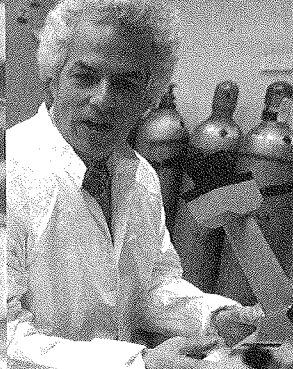
Awarded the Nobel Prize in Chemistry in 1954 for research into the nature of the chemical bond and its application to the elucidation of the structure of complex substances.

Donald J. Cram



Awarded the Nobel Prize in Chemistry in 1987 for the development and use of molecules with structure-specific interactions of high selectivity.

Stanley Prusiner



Awarded the Nobel Prize in Physiology or Medicine in 1997 for his discovery of Prions — a new biological principle of infection.

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Photo credits: Donald Cram photo from the Department of College Archives and Special Collections Olin Library, Rollins College, Winter Park, Florida; Stanley Prusiner photo by David Powers, August 12, 2002; Linus Pauling photo courtesy of the Archives, California Institute of Technology.

Materials Research & Manufacturing Section

Nora K. Stoecker, Chair

Members of the Materials Research and Manufacturing Section of the Chemistry Division share information concerning all phases of materials procurement, production, applications, and handling by means of educational activities, cooperative programs, publications, and Section-sponsored events at annual conferences.



Enjoying your Summer? I'm trying to – and keeping almighty busy at the same time. What ever happened to the "lazy days of summer"?

MRM Business Meeting

The Materials Research & Manufacturing (MRM) Section held its annual business meeting on Friday May 23rd, as an online meeting. Six MRM Board members and the Chemistry Division (DCHE) Board Secretary were in virtual attendance. Next time we'd like to have some members join in. They were all too busy or shy this time.

The minutes have been drafted and will be distributed to the MRM website and members.

Meeting highlights:

- Cathy DiPalma, Technical Information Specialist at Saint-Gobain NorPro, is the Section's current Chair-elect, as well as the 2009 conference planner. During the business meeting Cathy was unanimously approved as the 2009 Chair.
- Jack Bashian, Publisher with Smithers Rapra (and a new MRM member), was appointed Chair-elect for the Section, and will also serve as the Section's conference planner for the 2010 conference.
- MRM has 51 members according to SLA HQ, though problems tracking section members continue. If you think you are an MRM Section member, please go to the membership directory at the SLA website and double-check your record. Not all the records are correct.
- 2009 conference planning highlights were reported. The MRM Section was exploring the possibility of bringing an NSF program to the conference, but is also exploring ideas with a materials science publisher. More to come.
- The MRM Section strategic plan has four goals and four remaining years to the plan. We discussed focusing on one goal per year – with the balance of 2008 to be focused on "communications" with Section members.

Jack Bashian

2009 Chair-elect Jack Bashian is the U.S. Publisher for Smithers Rapra, publisher of polymer-related books and journals, as well as the Polymer Library Database. Jack has been in the book publishing world for more than 20 years. Prior to joining Smithers Rapra he held sales and marketing positions at Wiley, Ingram, books.com, and BookMasters, Inc. Jack and his wife Veronica live in Hudson, Ohio, with their four children.

Member Highlights

I couldn't get any of the section members to 'fess up' to any of the notable things that have surely been occurring in their lives – at least not this month. So I'll do a little bragging myself this time – to show everyone how easy it is! Nora Stoecker (that would be me!) successfully coordinated the Materials Science Resources Forum at the 2008 annual SLA conference in Seattle, WA.

Speaking of the conference

Once again a big thank you to the Taylor & Francis Group for supporting the MRM section Materials Science Resources Forum session.

Representatives from ASM International, Elsevier, FIZ-Karlsruhe, ProQuest, and Springer provided information about their materials science offerings to a full room of engaged attendees. Tracy Landfried, ARL, Earl Mounts, Alcoa, and Nora Stoecker, NKS Information Services and Sandia National Laboratories, moderated. The vendor presentations will be available online.

Warm regards,
Nora K. Stoecker, nstoecker@nksinfo.com
OR nkstoec@sandia.gov; <http://www.nksinfoservices.com>

**The Materials Research & Manufacturing Section of the
Chemistry Division Welcomes its Newest Members**

Mr. Ted Baldwin
College of Applied Science
ML 0103
CAS Library
University of Cincinnati
Cincinnati, OH 45206 2839

Winifred Halsey
DSM Desotech
Library
1122 St. Charles Street
Elgin, IL 60145

Andrea Laidlaw
WR Grace, Library
1174 Grove Avenue
Shady Side, MD 20764

Barbara Losoff
University of Colorado
at Boulder
Science Library
1435 Ithaca Dr.
Boulder, CO 80305

Susan Metcalf
SABIC Innovative Plastics
Global Technology Librarian
1 Lexan Lane
Mt. Vernon, IN 47620

Lewei Shang
Rutgers University
Library and Information
Science
12 Gulf Rd
East Brunswick, NJ 08816

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Engineering Division

Daureen Nesdill, Chair



The objectives of the Engineering Division are to provide an association for those having an interest in library and information science as they apply to engineering and the physical sciences and to promote the use of materials and knowledge for the benefit of libraries and other educational organizations.

It must have been a great conference. I arrived back in Salt Lake City late Thursday evening and slept for three days. At the 40th anniversary celebration Sunday evening I kept the business meeting to such a minimum that George Plosker of IEEE was having trouble taking pictures. We had a great crowd of about 90 people celebrating, but still half the birthday cake was left! And a big thank you to Sara Davis for leading us in the time honored tradition of singing *Happy Birthday To Us*.

I must reveal a little story about the 40th anniversary. SLA headquarters told Bob Tolliver, Past Chair, that the Division would be celebrating its 40th in 2008. That is why Kathryn Breininger, Aerospace Section Chair, and I have spent the past year planning the anniversary party. Sometime this past spring Cheryl Hansen, Membership Chair, and Bonnie Osif, Archivist, had a little discussion about the actual number of years the Engineering Division existed.



Dee Magnoni, Chair-Elect, presents Chair Daureen Nesdill with a gift of appreciation for her service.

Seems we broke off from the Science-Technology Division sometime in the '60s. They could not determine the exact date from the records of either Division. After a little investigation on the part of SLA headquarters, they apologized for providing us with misinformation. The Engineering Division is actually 42 years old, so we will be celebrating our 50th at the conference in 2016. Y'all are invited to the party and maybe we will order a smaller cake.

We had some great sessions at the conference this year. Lee Pharis moderated a lively discussion during the Standards Update. The Division was well represented at the SciTech and Engineering Contributed Papers. Lee Pederson presented a paper on "Librarian in the Lobby - Connecting in Their Space" and Scott Curtis along with his colleague from Linda Hall Library, presented a paper "If The Library Brand is 'Books,' Why Not Read a Few? Bringing Narrative Nonfiction Book Discussion to the Special Library." Good

work. You can read the papers by going to the SciTech website, <http://units.sla.org/division/dst/>. You can read all the contributed papers presented during the conference at <http://www.sla.org/content/Events/conference/ac2008/index.cfm>. The handouts from the conference should be in ClickU! by the time you receive this *SciTech News*.

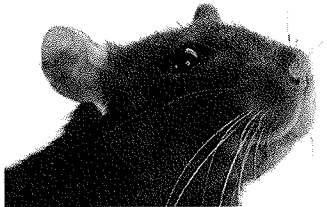
The All Sciences Poster Session and Reception on Tuesday afternoon was very well attended. We planned for 160 attendees and ran out of drink tickets before I arrived about 15 minutes into the reception. The food was great and the posters were both interesting and informative. Patricia Kirkwood and Eric Resnis did a great job coordinating the posters submitted to the session on behalf of the Engineering Division. If you weren't able to attend or missed a poster, you will have a chance to view them all in the Fall when they will be up on the Web.

At the board meeting, it was decided that the Division needed to update its procedural document. The SLA headquarters change in the fiscal year from July-June to the calendar year has been problematic for those of us planning the conference programs. With Bob Tolliver, I'll be heading a group to rewrite the document by the Leadership Summit in January, 2009. Our goal is to have the final document completed for a vote by the annual conference in June, 2009. One result of the revisions will be that both the Awards and Vendor Relations Committees will be formed in June rather than January, since the work of these two important committees revolves around the June conference. If you are interested in assisting with the rewrite drop me a line.

Bob Tolliver, Kathryn Breininger and I are in the process of accepting nominations for the positions of Chair Elect of both the Engineering Division and the Aerospace Section and also for Secretary of the Division. The election will be

held in Fall 2008 and the new Board members will take their positions January 1, 2009. Hopefully they will be able to join us in warm and sunny Savannah, Georgia for the SLA Leadership Summit that same month.

These positions each provide funding for travel to the two conferences and you will be planning for the 2010 conference in the biggest party town, New Orleans. The revision of the Division's procedural document should make program planning a lot easier for the 2010 conference. The position of Secretary is a great way to learn the ropes of the Division and then move up. If you have any questions about the positions or if you want to run, please drop me a line.



So what's a picture of a rat doing in my column? I included it for two reasons; (1) to grab your

attention and (2) to tell you about SLA's new Innovation **Laboratory**,

<http://www.sla.org/innovate/>. Do yourself a favor and take some time to investigate the tools there. See which ones you can implement in your day-to-day activities at work. Eventually we will all be required to use these social software or Web 2.0 tools in our work and even in our personal lives. Need some prodding to learn? Then check out *23 Things!*. By signing up for this free program you will learn 23 tech tools in nine weeks to earn a certificate and maybe even a prize. Dee Magnoni, Division Chair Elect, already has a blog posted - and thanks to SLA for helping members to keep current with new technology. ❖

See you in cyberspace,
Daureen Nesdill
University of Utah
daureen.nesdill@utah.edu



Board Members Cheryl Hansen, Kathryn Breining, Kathy Nordhaus, Daureen Nesdill, Bonnie Osif, Gale Harris, Patricia Kirkwood, Joan Dubis, Lee Pharis, Susan Smith, Dee Magnoni, Andrew Shimp and Sara Davis.

SLA Engineering Division – 2008 Stipend/Award Recipients

The Engineering Division is proud to announce the winners of this year's stipends and awards, presented at SLA Seattle this past June.

Jean and John Piety – Elsevier Engineering Librarians of the Year

The award to Jean and John Piety for Engineering Librarians of the Year is presented for their exceptionally long service to SLA, and especially to the Engineering Division. They have been steady fixtures at Division meetings and both have quietly mentored individual Division members as well as numerous Division Boards over the years. In addition, they have always been ready to serve the Division whenever needed.

Jean has been a member of SLA since 1958, celebrating her 50th anniversary this year, while John has been a member since 1975. Together their service to the Engineering Division, the Cleveland Chapter and SLA was well worth honoring.

SLA lists Jean as having held Cleveland Chapter positions as Networking Chair, President-Elect and President. In addition, she's been Treasurer and Director for the Sci-Tech Division. She's been a stalwart for the Engineering Division in the area of industry standards and helped develop our Division governing document. At the Association level, she has served on the Technical Standards Committee.

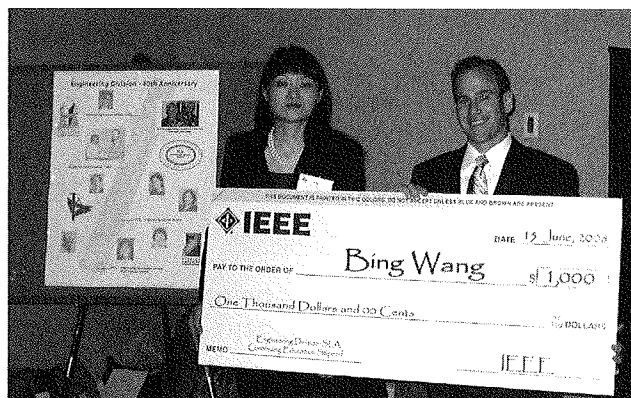


Cheryl Hansen, Engineering Division Membership Chair, accepts the Elsevier Engineering Librarians of the Year award on behalf of Jean and John Piety from Deborah Jordan of Elsevier Engineering Information.

SLA indicates that John has also served as Bulletin Editor, President-Elect and President of the Cleveland Chapter; Membership Chair, Chair-Elect and Chair of the IT Division of SLA; and on the Bylaws Committee for the Association.

SLA and the Division is honored to have had such a dedicated pair of individuals, and their \$1500 Elsevier award is truly well-deserved.

Bing Wang – IEEE Continuing Education Stipend Winner



Bing Wang receives the Continuing Education Stipend Award from Fran Staples of IEEE.

The Institute of Electrical and Electronics Engineers (IEEE) Continuing Education Stipend is given to the SLA Engineering Division member who submits the best essay on how the applicant will benefit professionally from a continuing education course. The stipend of up to \$1,000 covers expenses incurred while attending any CE course offered at the annual Special Libraries Association conference.

Ms. Bing Wang is the winner of the 2008 IEEE Continuing Education Stipend, administered by the SLA Engineering Division. Ms. Wang is currently at the Georgia Tech Library and Information Center, where she is subject librarian in Chemical and Biomolecular Engineering, Materials Science and Engineering, and Polymer, Textile, and Fiber Engineering.

Ms. Wang attended the "Diving into Patents: A Primer for Librarians" pre-conference class, the content of which she will use to redesign the bibliographic session for the School of Chemistry's senior organic synthesis class, to be taught in August, 2008. Her knowledge will also be applied to developing instructional

classes and training materials for both her assigned schools and the general public. Bing will submit an article for a future issue of *SciTech News* which will describe the benefits of having attended the class.

Ekaterina Elgayeva - Inspec Travel Stipend Award

Inspec was pleased to award their \$1200 stipend to a qualified student who's essay is judged to be the best submission addressing a topic of interest/concern in Library Science. This year's topic, selected by the Engineering Division Awards Committee, was:


Because of all the electronic resources licensed by your Library, you've been mandated to drastically reduce your physical collection over the next three years.

Describe your strategy for accomplishing this challenge, how you would address it with your loyal walk-in clientele, and a methodology for marketing your "new" (basically virtual) library.

Ekaterina Elgayeva, a student of Library/Information Science at Dominican University in River Forest, Illinois, submitted the winning essay entitled "Strategic Methodology for Transitioning into the Virtual Realm." The entire essay can be found in this issue of *SciTech News*. ❖

Joan C. Dubis, The Boeing Company
Awards Chair

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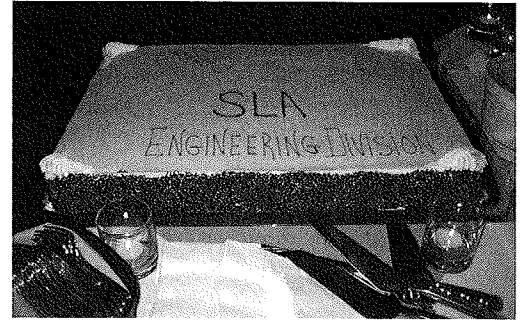
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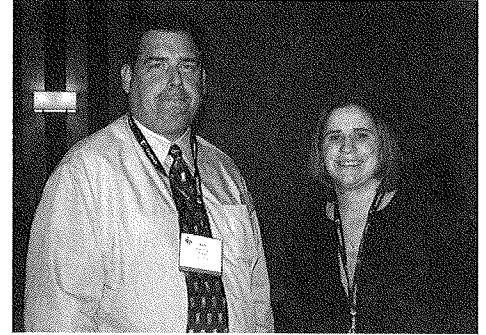
Celebrating with the Engineering Division



Joan Dubis, George Plosker of IEEE, and Chair Daureen Nesdill



The delicious birthday cake.



Keith Ross of Elsevier and Rebecca Cerame of Northrup Grumman



Three cheerful party-goers.



Inspec sponsors Karen Berryman, John Lloyd and Dawn Hicks.



Division Sponsors Keith Ross, John Ziegler and Deborah Jordan from Elsevier, Fran Staples from IEEE and Ron Rodrigues from Dialog.



Bing Wang, Fran Staples of IEEE, and Randy Reichardt

Inspec Travel Award Winner - Ekaterina Elgayeva - Winning Essay Strategic Methodology for Transitioning into the Virtual Realm

An effective strategy to reduce physical collections over the span of three years is three-fold. The first step is to complete a comprehensive print collection evaluation, assessing condition and frequency of material use. The second step is to actively engage in digital collection development and, thereafter, management, in order to assure a compatible level of electronic content available for patron access. The final, and most critical, step is to achieve a level of awareness of electronic resources accessible to clientele and encourage their use.

Although the resultant availability of remote access undermines the notion of 'library as place' to a great extent, such changes must be embraced to position the library in the vast world of Web 2.0 and sustain its relevance. Despite existing disadvantages associated with electronic resources, in the long run, digital collections will increase material accessibility and function as a viable preservation technique for print originals.

A thorough evaluation of physical collections

encompasses accurate assessment of materials' physical condition as well circulation rates. If the latter cannot be determined electronically, a user-based survey will be conducted to establish which collections can be transferred to offsite storage or, if necessary, sold, and which need to be kept on the shelves. If at all possible, print materials with high circulation rates should be retained, while those with lower circulation rates should be transferred or sold.

Because the gradual restructuring of collections will largely affect the library's loyal walk-in clientele, they will comprise the bulk of survey respondents. A concise questionnaire regarding frequency of specific collection as well as individual item use will be available at several access points within the library, in both print and digital formats (i.e. at the circulation desk but also on the library home page).

Accordingly, requests to keep specific collections

and items will be accommodated by the library as best able. Provided necessary funding and equipment, monographs sought by loyal walk-in clientele and those in need of conservation will be prioritized for on-site digitization. A possible avenue to gain financial support for digitization is to look into collaborative action, including mass digitization initiatives. Donor assistance, fundraising and grant funding are also viable options.



Ekaterina Elgayeva receives the Inspec Travel Award from Dawn Hicks of Inspec.

Availability of remote access to materials as a result of the library's transition into the virtual realm will most likely not affect the loyal walk-in clientele, for, arguably, that specific user group will maintain its preference for the library facility, even if it is to access electronic collections. In effect, ample financial and human resources must be allocated to comprehensive training of library staff in order to effectively help walk-in clientele navigate electronic materials.

Effective digital collection development must follow the assessment process of print

resources, whereby a network of trustworthy electronic content providers is established and a sufficient amount of content is purchased. Additionally, a content management system, such as *Sanderson CMI*, *Content Manager* from Inktomi, or *Solid8 Content Management Module*, will be implemented to address the changing nature of management of library resources. The necessity to increase server space, institute simple content pathways to assure ease of collection navigation, and conform to DRM standards for materials digitized on-site, are all integral to the successful upkeep of electronic resources.

As open access content management assumes greater prominence, new methods of content management will be considered, including the gradual embrace of search engine methodology by expanding metadata to encompass a search engine hit. Partnerships between Google and OCLC, University of Michigan and Columbia

University, to name a few, have already achieved greater content accessibility, and, similarly, the move forward for special libraries will require progressive abandonment of traditional methods.

According to findings of OCLC's *Perceptions of Libraries and Information Centers* (2005), users are largely unaware of electronic resources available to them, so an aggressive marketing approach to maximize that level of awareness is absolutely dire. Interactive seminars and workshops on digital resources will be held within the library to encourage electronic collection use. Fliers and leaflets containing information about existent and forthcoming collections will be available at main access points within the library. Moreover, this information would be distributed to patrons electronically (i.e. via e-mail and library home page) on a monthly or quarterly basis, provided there are significant changes to available content.

Emphasis will also be placed on the level of convenience associated with electronic resources in the context of remote access for clientele that prefers that option. A focus on delivering a service compatible to that of a search engine,

but ultimately superior in its level of authority and accuracy will also be part of the marketing methodology. The process of contextualization of a given topic, as opposed to a mere provision of content, is simplified via availability of electronic resources, and the library will capitalize on making clientele mindful of this advantage.

Although many challenges are inherent in carrying out this strategy, the on-going challenge will be unremitting change. In order to remain relevant, the library will need a continual focus on user-centered demands, thus, a satisfaction survey will be distributed quite frequently. Evaluation of utilized technologies, investment into newly emerging ones, including the content management system, as well as scheduled software and hardware updates, is a must in a virtual library environment. Thus, financial resources to preserve digital collections will need to be allocated, while research about, investment into and incorporation of new technologies will assure the library's auspicious progression into the future.❖

Ekaterina Elgayeva, Dominican University, River Forest, Illinois

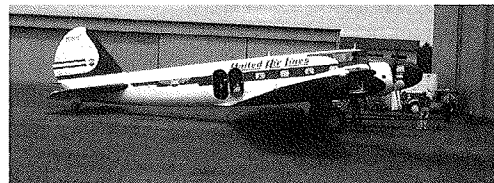


Pam Enrici, Daureen Neddill, and Susan Fingerman join our tour guide Greg Coe and Sheree Van Berg, Aircraft Maintenance Technician at the Center.



Under reconstruction.

Boeing Museum of Flight Restoration Center



A vintage United Air Lines plane almost ready to take off.



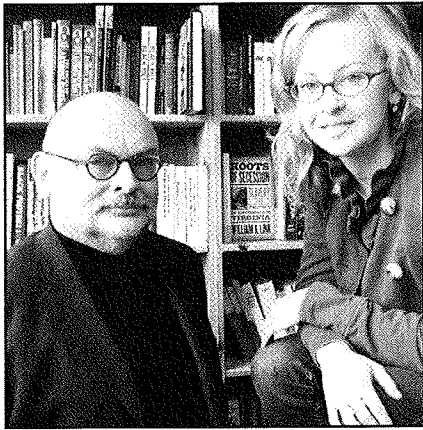
Pam Enrici emerges from the first commercial jet airliner, the De Havilland "Comet" from the early 1950's, built in the UK before the Boeing 707 and operated by BOAC.

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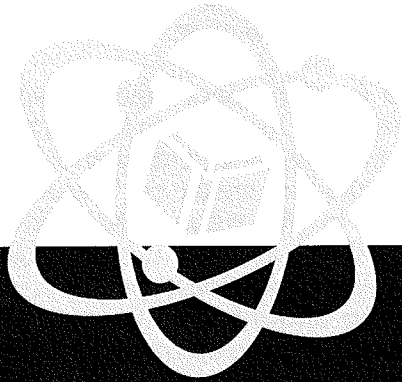
—Michael Powell, Owner,
with daughter Emily Powell

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Aerospace Section

Kathryn Breininger, Chair



The Aerospace Section of the Engineering Division encourages communication and cooperation among information professionals concerned with aerospace, aeronautical and related technologies. In addition, it fosters dialog with entities such as NASA, the AIAA and other important sources of technical data and bibliographical services.

The 2008 SLA conference is now a thing of the past – but carries on in what we have learned and shared during our time together in the beautiful Pacific Northwest. Conference attendees were treated to some beautiful early summer weather, as well as a couple of our misty Northwest days. I hope all who attended had an opportunity to explore the area, and put it on their lists of places to visit again!

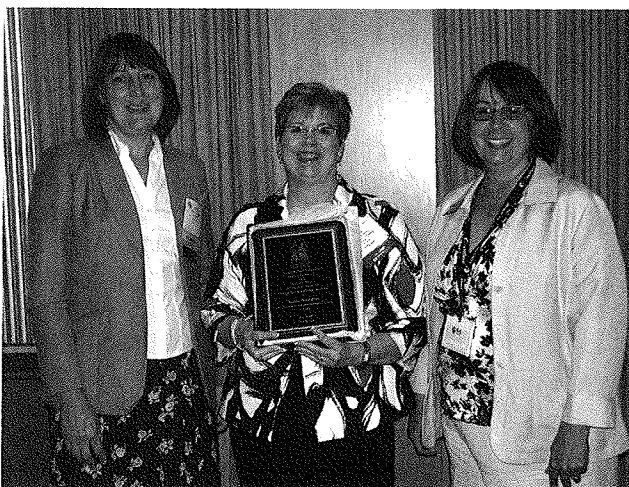
The Aerospace sessions were especially good, and were all well attended. Our Aerospace Breakfast Business meeting was attended by over 50 members and provided an opportunity to network, meet old friends and make new ones. The breakfast meeting was held in the top of the Sheraton Hotel with a beautiful view across the Sound, although a bit misty that morning. I would like once again to thank our sponsors, AIAA and Jane's for supporting us through their generosity to SLA, and the Aerospace Section in particular.

The minutes from the June 2007 business meeting were approved, and several announcements were made, including that membership in the Engineering Division is now about 400 members and Aerospace Section just over 100 members. SLA 2009 will take place in Washington D.C. and will be the 100th anniversary celebration of SLA. This year the Leadership Summit will be in Savannah, Georgia in January. All interested in leadership, and any in leadership positions in SLA are encouraged to attend if at all possible.

The nominating committee is still looking for volunteers for Aerospace Chair Elect. Volunteering in SLA provides opportunities for you to develop leadership skills, technical and interpersonal skills; to contribute to the profession, and to build your career through

skills you can acquire volunteering for SLA. Plus it is an opportunity to increase your network! If you are interested please contact me, or the Engineering Chair, Daureen Nesdill.

The highlight of the Aerospace Breakfast meeting was the presentation of the George Mandel Memorial Award. It was my pleasure to be able



Aerospace Chair, Katherine Breininger, AIAA Mandel Award Winner Kathy Nordhaus, Janice Saylor, AIAA.

to present this award to Kathy Nordhaus from Raytheon. Kathy is a member of a number of SLA divisions, including the Science-Technology Division, the Leadership Management Division, and the Engineering Division. She has contributed to the profession throughout her career and through her participation in SLA. We appreciate her continued involvement and assistance in moving the profession forward. I

also would like to thank again the sponsors for this award; Dr. David Mandel and AIAA. Their continued support enables us to recognize exceptional leadership and contributions. Thank you also to the Mandel Award Committee; Mary Crompton, Amy Smith and Gale Harris. We appreciate your thoughtful consideration and selection of our award winner.

Another focus for Aerospace was the speaker session. We were very fortunate in having Michael Garrett, Director of Airplane Performance, Boeing Commercial Airplanes, speak on "Aeronautics, Then, Now and in the Future." Michael is an airplane enthusiast, and his passion for and knowledge of aeronautics and airplanes provided for a stimulating and informative session. He took us from the beginning attempts at sustained flight and the issues that the Wright Brothers and other early innovators faced, to the present and future, where we still face the same issues as we continue to innovate in improving our flight technology. The future is focused on improving

fuel efficiency, and developing green alternatives to our current fuel mixtures. In addition to the talk, attendees had an opportunity to receive from AIAA a complimentary copy of *100 Years of Flight: A Chronicle of Aerospace History, 1903-2003* writing by Frank H. Winder and F. Robert van der Linden, National Air and Space Museum. This book nicely complemented Michael Garrett's talk. I would also like to thank Linda Hall Library, the sponsor for our Aerospace speaker session.

Another nice complement to the Aerospace speaker session was the tour of the Museum of Flight, Boeing factory and more. This tour included the Museum of Flight Restoration Center (see pictures on page 32), the Boeing Assembly Plant and the Future of Flight Aviation Center. Participants explored the past, present and future of aviation in a half day, taking a bus from the convention center with an enthusiastic tour guide providing entertaining and information dialogue along the way. Daureen was on the

tour, and described some of what they saw and learned: "We got to climb into the Comet - the 1st passenger jet. We were told there are 700 volunteers working to restore the planes. One of the volunteers showed us how an early flight simulator worked. At The Boeing plant we watched workers still building the first Dreamliner - it was super large. The entire staff and their desks, computers, etc were relocated to the floor where the Dreamliner was being assembled so to speed up the process. I don't remember the size of the plant, but we were told the number of football fields it took up. We saw workmen getting around on bicycles." If you are in Seattle again, I highly recommend this tour - I have been on it four times!

I hope you all enjoyed your time in Seattle and at SLA. See you next year in Washington D.C.

❖

Kathryn Breininger
Chair, Aerospace Section



Chris Grady and Janice Saylor
of AIAA



Jane's Sponsors Rich DiMezzo, Jane Bridgeman, Matt Donohue, Lewis Duncan at the Aerospace Breakfast

AIAA Electronic Library

The American Institute of Aeronautics and Astronautics was formed in 1963 through the merger of the American Rocket Society and the Institute of the Aerospace Sciences. AIAA has added the journal content published by those two societies (1930–1962) to the AIAA Electronic Library. Here are some of the pioneers that you'll find in the IAS/ARS eJournal Archive:

Alfred Africano
Holt Ashley
Richard H. Battin
Geoffrey de Havilland
Jimmy Doolittle
Donald Douglas
Charles Stark Draper
Hugh L. Dryden
Krafft Ehrlicke
Alexander H. Flax
Robert Goddard
Jerry Grey
H. R. Grummann
Jerome Clarke Hunsaker
Clarence "Kelly" Johnson
Robert T. Jones
Wolfgang Klemperer
David Lasser
William Littlewood
W. Randolph Lovelace II
Frank J. Malina
Glenn Martin
Max Munk
John Northrop
Gordon Oates
A. K. "Tony" Oppenheim
G. Edward Pendray
Jean Piccard
C. G. Rosby
William R. Sears
Igor I. Sikorsky
A. M. O. Smith
Athelstan F. Spilhaus
John Stack
Martin Summerfield
Theodore Theodorsen

Robert Truax
Hsue-Shen Tsien
Walter Vincenti
Theodore von Kármán
Fred Whipple
Theodore Wright

Pioneering Women

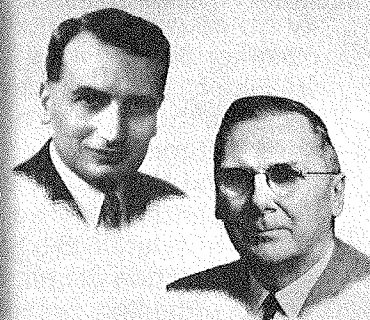
Beverly Beane (1941–1960)
Martha E. Graham (1949)
Elizabeth Hahneman (1948)
Wilhelmina D. Kroll (1949)
Rose A. McFarland (1940)
Pauline M. Sherman (1957)
Dolores Ulford (1951–1953)
Eva M. Winkler (1955–1959)

Pioneering Institutions

Allison Engineering Company
Aluminum Company of America
Armstrong Siddeley Motors, Ltd.
The B.E. Goodrich Company
Boeing Airplane Company
Boeing School of Aeronautics
Caltech
Central Aero-Hydrodynamical Institute, Moscow
Civil Aeronautics Administration
Curtiss Aeroplane and Motor Co., Inc.
Curtiss-Wright Corporation
The Daniel Guggenheim Airship Institute
The Dow Chemical Company

Eastern Air Lines, Inc.
The Glenn L. Martin Company
Goodyear-Zeppelin Corporation
Kawanishi Aircraft Co., Ltd., Japan
Lockheed Aircraft Corporation
McDonnell Aircraft Corporation
MIT
National Advisory Committee for Aeronautics
National Bureau of Standards
New York University
Northrop Aircraft, Inc.
Pacific Railway Equipment Co.
Resinous Products and Chemical Company
Scientific Research, Air Ministry, England
Service des Fabrications de l'Aéronautique, Paris
Sperry Gyroscope Company
Stanford University
Tokyo Imperial University, Japan
United Aircraft Corporation
University of Cincinnati
University of Colorado
University of Michigan
University of Minnesota
U.S. Navy Department
Vultee Aircraft, Inc.
Westinghouse Research Laboratories
Woods Hole Oceanographic Institution

All There Is to Flight



Free content includes vintage advertisements, editorials, awards, book reviews, tables of contents, and first pages.



Search the AIAA Electronic Library at www.aiaa.org/electroniclibrary and purchase individual papers. Institutions may subscribe to the entire collection; contact Chris Grady at chrisg@aiaa.org, 888.854.6851, or 703.264.7509.



060384

78 Years of Pioneering Research



All There Is to Flight

AIAA Electronic Library

The American Institute of Aeronautics and Astronautics was formed in 1963 through the merger of the American Rocket Society and the Institute of the Aerospace Sciences. AIAA has added the journal content published by those two societies (1930–1962) to the AIAA Electronic Library. Samples of the rare content that you'll find in the IAS/ARS eJournal Archive:

1930

- To the Moon in 15 Years Says Pelterie
- Oberth Rocket Ready

1931

- Predicts 3-Hour Berlin-New York Flight
- Italian Rocket Plane Makes Successful Flights
- Moon Flight Will Cost \$2,000,000,000, Says Astronomer

1934

- Flying Boats for Transoceanic Service
- Metallurgy in Aviation
- Speed of Air Driven Rotors in Gyroscopic Instruments
- Air Force Measurements on Bodies Moving Through Still Air

1941

- Possibilities of the Two-Stroke Cycle for Small Aircraft Engines
- Review of the Effects of High Altitude Flying
- Aircraft Plywood and Adhesives

1942

- A New Instrument for Celestial Navigation
- An Improved Longitudinal Stability Calculation

1943

- Aerodynamic Performance of the Towed Glider
- Limits of Human Heat Regulation
- Design-Strengthened Materials

1944

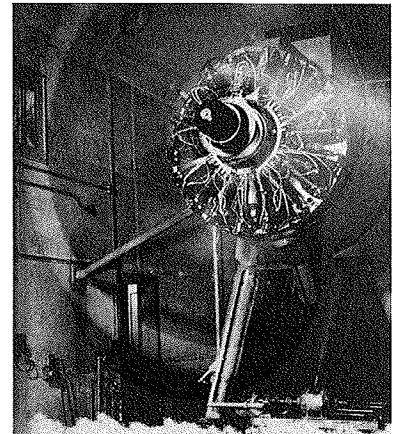
- Propeller Design Requirements
- Periodic Aerodynamic Forces on Rotors in Forward Flight

1945

- Calculated Gust Loads for Tailless Airplanes
- The Glauert-Prandtl Approximation for Subsonic Flows of a Compressible Fluid
- The New York Rocket Battalion: Experiences of a Civil War Rocket Unit

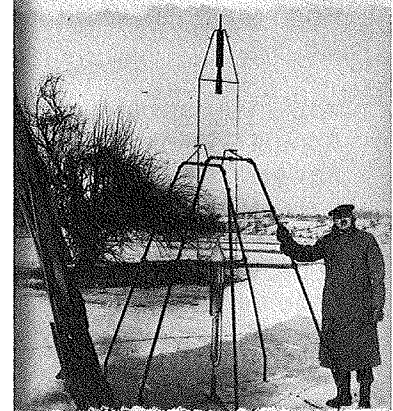
1946

- British Aircraft Gas Turbines
- German Development in the Field of Rocket Powered, Controlled Missiles
- Liquid Propellant Rocket Development



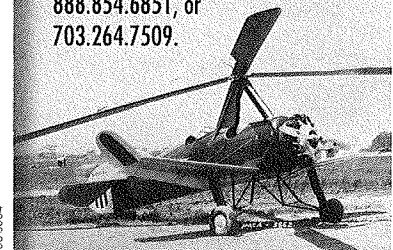
Free content

includes vintage advertisements, editorials, awards, book reviews, tables of contents, and first pages.



Search

the AIAA Electronic Library at www.aiaa.org/search and purchase individual papers. Institutions may subscribe to the entire collection; contact Chris Grady at chrsg@aiaa.org, 888.854.6851, or 703.264.7509.



08-C084

78 Years of Pioneering Research



Science-Technology Division Christine Whitaker, Chair



The objectives of the Science-Technology Division shall be to draw together those members of the Special Libraries Association having an interest in the role of library and information science as applied to the recording, retrieval and dissemination of knowledge and information in all areas of science and technology, and to promote and improve the communication, dissemination and use of such knowledge for the benefit of libraries and their users.

The Seattle conference was a great experience. All of the Science-Technology Division's (DST) programs were well received and executed. I would like everyone to join me in thanking the Program Planning Committee members for 2008: Kelly Blessinger, Valrie Davis, Pam Enrici, Claudia Lascar, Carol Lucke, and Pam Yorks. Great work everyone!

of the conference experiences from your home or office. It is a great way to keep up-to-date.

For those unable to attend the Annual Conference, you can still share in part of the experience. You can meet the candidates for 2009 Board of Directors and watch a short video of the candidates' speeches delivered at the conference. Go to the Board of Directors site at <http://www.sla.org>.

Planning for the Centennial Conference in Washington D.C. is underway, and we look forward to a fun time then. The SLA Centennial Commission has been working hard on year long celebratory events for the Association. This is a really fun thing – an SLA postage stamp! We can promote our Association all year long by using these stamps, so check them out now at SLA Marketplace.

While you are logged on, click on the Events/Annual Conference tabs to view SLA Contributed Papers and get some of the Conference handouts. These include James Manasco and Mary Frances Lembo's handouts from "Science and Engineering Resources 101," which feature nanotechnology and aerospace resources. Other session handouts will be posted there soon.

Also introduced at the Conference was SLA's 23 Steps program for asynchronous learning about social software. Sign up now and learn about blogs, wikis and other tech innovations at your own pace. It's all free at SLA.org under Useful Resources.

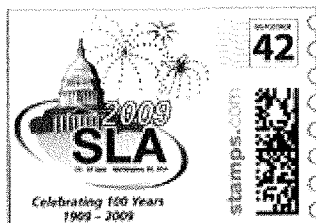
Several sessions were recorded and will be available as podcasts. I am eagerly awaiting their arrival, since I am never able to attend all of the sessions that I need. I will be visiting the "60 Gadgets in 60 Minutes" podcast on the Law Division website. Also of interest is "Podcasting the Librarian Way," soon to be on the IT Division website.

This is also the place to get a look at the Innovation Lab, where you can get "hands-on" with the latest emerging technologies. The Lab offers a wide variety of Web 2.0 software learning tools to help you become more business savvy and technologically adept. "The Innovation Lab provides tools to SLA units ...to build and implement useful services for your members."

I encourage everyone to start watching the Division websites as well as sla.org to access many

The free learning opportunities at SLA just keep growing. Now I have no more excuses! ❖

Christine Whitaker
CWHITAKER@gw.med.sc.edu



SLA Centennial Stamps are a great way to show your enthusiasm and support for the Association's 100 year anniversary. Stamps are sold per sheet, each containing 20 U.S. First Class postage stamps with the SLA 2009 conference logo.

**SciTech Division and European Chapter Student Travel Award
Winning Essay – by Hannah Lewin, University College, London**

My main motivation for doing the MA course was to be able to take on more responsibility and to be able to enact change and development. In my library assistant roles I have had many ideas about service improvements and marketing opportunities but can only really understand how feasible they are and certainly how I could put them into practice by being in a professional post. So I guess my motivation is frustration albeit in a positive way, as I want to make things better in the information world. The opportunities that the formal course offers, such as being able to critically evaluate new technologies and learn from [the] best, or in fact worst, practice will be invaluable for my professional career.

Engaging with colleagues and tutors on the course is not all academic, it also encourages professional involvement. Our tutors are supportive of our professional body, CILIP, and they work closely together in terms of offering advice to potential library professionals through joint road shows. Individual tutors are also professionally involved in committee work and publications and so I have become involved and have joined the committee of the Career Development Group as student representative and have had an article published in our newsletter *Impact*, inspired by the impetus that this gives your personal development as well as for the dynamics of the profession overall.

I hope to use my degree as a catalyst for a career and not just a series of jobs. I will use it as a theoretical foundation that will be cementing the practical skills that I have already developed on the job. I have a health background and my science A-levels have proven invaluable so I would like to continue in the evidence-based medicine field.

The science of coffee... and more social networking technologies than you can shake a stick at

Hannah Lewin, winner, Sci-Tech Division and European Chapter Student Travel Stipend Award

[*Ed. Note – As part of her award, Hannah was asked to report on her experiences at the Conference*]

Arriving at the Seattle-Tacoma airport at 10pm at night, I was so excited my tiredness evaporated, and I was starving. This was the only time during the conference that I could have described myself thus, as there was a copious amount of food. The only thing I regret not doing at the conference

I think that the challenges that face information professionals center around our professionalism and status. We have to prove our worth when the internet gives so much, to promote ourselves as founts of knowledge and navigators through an increasingly complex information landscape. Where the lines between private interest and information provider are blurred, such as in health information websites or wikipedia, we should be trusted to point out the pitfalls of using such information. The challenge is being confident enough to say that our skills as information professionals are our unique selling point; knowing where to find information is a skill, a skill that allows everyone else to concentrate on doing *their* job.

In the UK specifically, public librarians have been under fire. Jobs have been cut and librarians made redundant or downgraded, doing the same job for less money. The main challenge here is communication, communicating to the public as well as government what they do, what service is being provided and how the professional qualification leads to this great service. When I go to the optician or the doctor they display their qualifications on the wall, maybe we should do the same. I don't work in public libraries but have always used them for education and leisure although I have always sought them out. I think marketing a clear message about what libraries can offer is the major challenge both in this sector and in every information job. I think our work is not obvious to most people, which is why I can be found talking to as many people at events and whenever I meet anyone new: self-promotion starts at home.❖

was bringing my gym kit and working off some of the breakfasts, snacks and canapés.

I had a reason to be fairly excited (as well as a little nervous) about the conference. The rule of thumb is to pack as much into the experience as possible, fight the jetlag and just talk to as many strangers as possible. With the exception perhaps of the Seattle vagrants who tried to share a conversation with me as I power walked

from my hotel to the conference center (I had the pavements/sidewalks to myself as no one walks in America).

I had printed out my timetable and checked with my mentor Nevenka beforehand that I had everything important in there. I started off by meeting everyone from Sci-Tech and SLA Europe (co-sponsors of the award) at the Zig Zag café before the conference started. We chatted about professional matters such as the important question of whether to have dessert (we did). I missed the first timers session but instead was thrown into the management deep end with the Sci-Tech board meeting and it was fascinating to see what goes on behind the scenes. Discussions revolved around the mixture (or tension) between time to see the exhibitors and time for sessions and how we should be celebrating 100 years of SLA next year in Washington, D.C.

Many of the sessions encompassed understanding how social networking tools and/or the principles behind them can be used to manage information, market our services and communicate our message. Seth Godin's talk at the closing address on combining new technology with old products (adding sundae to meatballs in his book *Meatball Sundae*) was really interesting. Basically you have to think about why you're using the technology and whether your company is fine with making meatballs, or whether you really should be evolving into a creative innovative producer of the sundae; a combination of the two may not be that palatable. Tools I took home with me included Pbwiki (wikis on a peanut butter sandwich theme), Kaboodle (shopping recommendations), Rollyo (make your own search engine) and the eponymous Twitter (up to the minute postings- a little too much information methinks).

Another session I really enjoyed was the science of coffee. Seattle is extremely hot on this beverage and I sampled about four different kinds whilst I was there. So I like to think by the

time this talk came around it was consolidating my practical knowledge with some theoretical background. Coffee is the second largest traded commodity in the world and Finland the largest coffee consumer. A Finnish audience member said it is put in babies milk to literally wean them onto it. Coffee not only gives you a hit, the caffeine goes straight to the brain, but scientists are discovering new properties that might be a result of the antioxidants that are found in coffee in high levels. Decaf is just as good in that respect. More information can be found on the Coffee Science Information Center website <http://www.cosic.org/>.

An even more off piste session I went to was the last day's discussion of American cinema in WWII hosted by the Military Libraries Division. I'm a lapsed film buff so this was my chance to nerd up on the films often plucked from obscure sources and lost to the digital switchover, and to learn about trends in movie making in this pivotal moment in history. Robert McLaughlin and Sally Parry were a brilliant duo. They are husband and wife and their strong partnership was inspiring. The room was packed with many wanting to ask them about their research and their accompanying book. So now I have to watch *Casablanca* again...



Nevenka Zdravkovska, International Relations Committee Chair, Sheila Rosenthal, Sci-Tech Awards Committee Chair, Hannah Lewin, Sci-Tech Division and European Chapter Student Travel Stipend Award winner, and Barbara Robinson, representing the European Chapter of SLA.

I experienced so much in Seattle: sunburn, Russian pasties and a brilliant exchange rate. No, seriously, I was honestly spurred on by the enthusiasm of all the people I met, the vendors I harassed and the American can-do attitude. I'd like to thank again Nevenka Zdravkovska and Sheila Rosenthal for looking after me, as well as Dale Riordan

and Sarah Oelker for welcoming me at the Newcomers Brunch. And all the other board members who, once I knew them, I then took advantage of this and waved/said hi to them at all times during the conference. I hope to get more involved with the committee and see everyone at another SLA conference. ❖

S. Kirk Cabeen Travel Stipend Award – Winning Essay by Gail Stebbins, University of Pittsburgh, Pittsburgh, PA

Breaking Rules, Building Bridges

These days librarians are facing their greatest challenge yet, the faceless user. Today library patrons may never enter a library building. How best do we help someone when we know nothing about them? How do we build bridges to assist the unknown user?

One of the ways that we can assist is to observe how our patrons use the Internet to do their research. But how relevant is it to observe information seeking behavior by patrons in ILS and databases like ASP that we ourselves are dissatisfied with? Perhaps, we could break the rules and see how our patrons use the Internet not for research, but for tasks like shopping, getting the news, and even listening to music.

As librarians we need to contact our constituency and survey them to determine which web applications they are currently using and which applications they would like to have to gather information. How do our patrons keep current? Do they subscribe to listservs, do they subscribe to RSS feeds, or perhaps they use Google Alerts? Do our patrons track their book and media collections on LibraryThing or on similar applications? Do they use personal cataloging software to track their media and connect to other members and

see what they are reading? Are they using products like Pandora Internet radio that learn about their tastes and deliver content based on those findings? Do our patrons just bookmark sites in their browsers or are they using del.icio.us and other web-based tagging sites? Do they shop online and if so are they using any of the classification features that the shopping e-tail sites offer? Librarians need to gather information on how their patrons use not only the library but all things digital.

In the January 4, 2008 issue of the *Economist* there was an article titled "Going by the book" that discussed how a team of "researchers discovered the main biochemical pathways in drug addiction...without having to do a single experiment." Their secret was library research. The researchers read "over 1,000 studies of the biochemistry and genetics of drug addiction" to draw their conclusions. Interviewing research teams like this one will allow us to replicate this type of experience for others.



S. Kirk Cabeen award winners Betsy Ronan Herzog and Gail Stebbins

As librarians, it is not enough to know how to manage content. We have to build a bridge to our patrons and learn how they interact with the digital world. We have to develop systems that meet or exceed our patron's expectations.❖

Sci-Tech Division Mentoring Program – Call for Participation

The Student Relations Committee of the Sci-Tech Division is expanding and looking both for folks to serve as mentors as well as those who are seeking a mentor. We have had a successful year with 20 members taking advantage of the Mentoring Program. As we continue to build on this success, we hope that more of you will join us in expanding the program by volunteering to be a mentor or a mentee. For more about the Sci-Tech Division Mentoring Program or to sign up go to <http://units.sla.org/division/dst/stmentoring.html> or contact:

Hilary Davis
Hilary_davis@ncsu.edu
919-513-0654

SLA Asian Chapter Conference Announcement

The SLA - Asian Chapter is organizing an international conference of Asian Special Libraries on "Shaping the Future of Special Libraries: Beyond Boundaries" to be held at the India Islamic Cultural Centre, New Delhi, India from 26-28 November 2008.

The Asian Chapter cordially invites all members of SLA to submit papers, to attend the conference and to visit India

Some of the objectives of the Conference are: to bring together special library professionals to a common platform; to promote special libraries; to facilitate the exchange of ideas and help to bridge the knowledge gap amongst the professionals associated with special libraries; and to develop professional competencies.

This conference is expected to attract more than 1000 participants from India, Asia and around the globe. For details please visit: <http://units.sla.org/chapter/cas/ICoASL2008.html>

Submission of Papers:

LIS professionals are welcome to contribute papers for presentation on the above themes and

related themes. The Papers should be based on research surveys; case studies or action plans rather than theoretical explanations and should not have been published earlier. Papers should be sent to asiansla@gmail.com

Dates to Remember

Last Date for Submission of Abstract/ Proposal (Extended)- August 15, 2008

Last Date for Submission of Final Papers - September 15, 2008

Early Bird Registration - September 30, 2008

Last Date for Registration - November 15, 2008

For further information, please contact :

P.K.Jain, Organising Secretary, ICoASL 2008

c/o. Institute of Economic Growth

University of Delhi Enclave

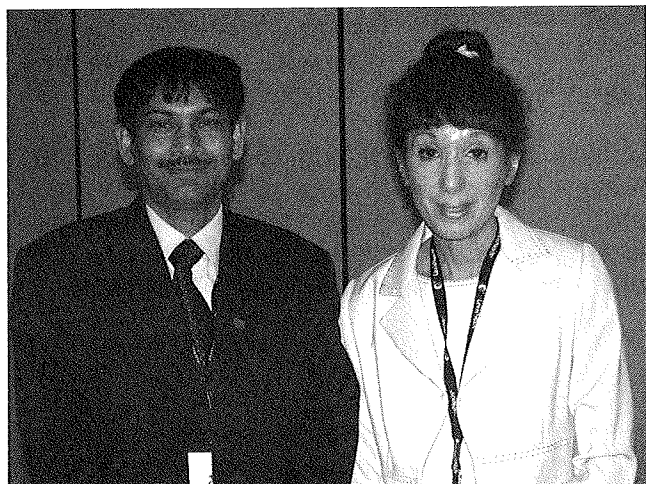
DELHI- 110007 India

Ph. 91-11-27667463; 27666364; 27666367.

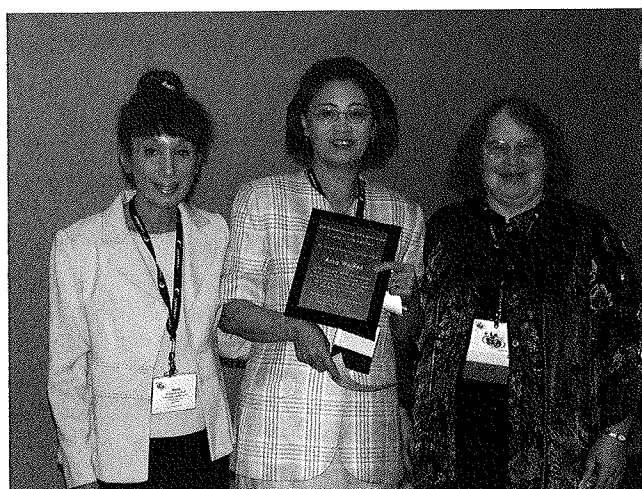
Fax: 91-11-27667463; 91-11- 27667410

Cell: 09899110787

Email: asiansla@gmail.com; asianchaptersla@yahoo.com



Hilditch Award winner Debal Chandra Kar and Committee Chair Sheila Rosenthal

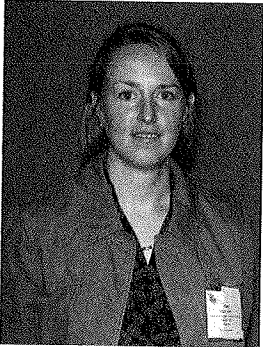


Sheila Rosenthal, Anna Ren, winner of the Sci-Tech Division Achievement Award, and Division Chair Christine Whitaker

Science-Technology Division Slate of Officers

Elections will be held September by email ballot.

Candidate for Chair Elect



Hilary Davis, Candidate for Chair-Elect

Hilary Davis

hilary_davis@ncsu.edu

Hilary Davis is Assistant Head, Collection Management for Engineering and E-Science at the North Carolina State University Libraries. She works with faculty, students and researchers in the physical sciences and engineering and leads the department's data analysis efforts for collection assessment. Hilary was named one of Library Journal's "Movers and Shakers" for 2008. She holds an MLS from University of Missouri-Columbia and an MS in Biology from University of Missouri-St. Louis. As a student member, Hilary found an abundance of networking and professional engagement opportunities with the St. Louis Metro Area Chapter of the SLA. She has been active in both the Physics-Astronomy-Math Division (moderator of Math Round table in 2006) and the Chemistry Division of SLA (recipient of Marion Sparks award in 2005 and liaison to the NSDL).

Hilary is currently chair of the Student Relations Committee of the Sci-Tech Division and has led the Committee to revive the Mentoring Program, embark on a LIS Liaison program connecting library school programs with Sci-Tech members, and to conduct extensive outreach to all 41 LIS programs in the US and Canada. Most recently the Committee conducted a contest to collect ideas for engagement with students by offering two free student memberships to SLA and the Sci-Tech Division [see article this issue] Her aims are to encourage more students to look toward a career in science librarianship by leveraging

the opportunities and network of colleagues within SLA, in particular the Sci-Tech Division; to work with the Division to continue on the paths of success already established, such as collaboration with other divisions and vendors to support attendance to the annual conferences by students and international members; and to help foster collaboration both within the Division and with other organizations to actively "grow the profession" and further realize our potential as partners within the broader landscape of E-science. More about Hilary: http://www4.ncsu.edu/~hmdavis4/hilary_davis_resume_may2008.pdf



Kelly Blessinger and Cheryl Hansen, Candidates for Treasurer

Candidates for Treasurer

Kelly Blessinger

kblessi@lsu.edu

Kelly is currently the Reference Assistant Coordinator for the Middleton Library at Louisiana State University. In this capacity, she serves as the subject liaison and collection development coordinator for Geology, Geography & Anthropology and the Reference collection. Kelly received her undergraduate degree in Earth Science from Eastern Michigan University and her MLIS from the University of South Carolina. Kelly has been active in SLA since 2000, and has served in a variety of leadership positions on the regional and national levels. Kelly served as the President of the Louisiana/Southern Mississippi Chapter from 2004-2005 and in numerous roles in the Geography and Map Section. Her most recent positions within the organization include functioning as the Membership Chair for the Louisiana/Southern Mississippi Chapter and serving on the Science and Technology 2008 Program Planning Committee.

Cheryl A. Hansen

cahansen@esi-il.com
 Research Librarian for Engineering Systems, Inc. (ESI) headquartered in Aurora, Illinois with offices in Colorado, Texas, Louisiana, Missouri, Georgia and Florida. Previous positions were with Triodyne Inc., The Illinois College of Optometry Library and the University of Wisconsin-Madison K. F. Wendt Engineering Library. Cheryl received her MLS from the University of Wisconsin-Madison in 1980 and a BA in Art History in 1979. She has been an active member of SLA since 1984. She is a member of the Engineering Division, the Science & Technology Division and the Illinois Chapter of SLA. As a Sci-Tech Division member Cheryl served on the Awards Committee for many years and is currently the Division Treasurer. As an Engineering Division member she has served on their Awards Committee as well as having served terms as Archivist, Secretary, Membership Chair and Division Chair.

Outside of work, Cheryl is married to an engineer, Doug, who is with CBI. They have two daughters, Kate and Ellen who will both be attending college this fall and a large dog, Ike. They will be empty nesters as of the end of August. They live in Naperville in the old section of town with a large garden. Cheryl has been active with a variety of school functions over the years and also has been a volunteer and board member for a group working with teen parents, Greater DuPage MYM. She also serves as an Elder at Knox Presbyterian

Church. She was named Volunteer of the Year for MYM in 1999 and in 2002 was honored by the Naperville National Exchange Club with the Kendzora Book of Golden Deeds Award.

Jennifer Hansen

Jennifer.Hansen@microsoft.com



Jennifer Hansen, Candidate for Treasurer

Jennifer is currently the Science & Technology Librarian at Microsoft. In this position, she's responsible for the science and technology content portfolio. She's an avid internal blogger, and enjoys spreading the word about new and exciting technologies. Prior to joining Microsoft, she was a principal in the technology company, WebFeat. Jennifer has been a Librarian for the past 14 years, and she's worked in various types of libraries and library related organizations, from non-profit (Bill & Melinda Gates Foundation) to public (King County Library System; Monroe County Public Library) to corporate (Microsoft; WebFeat; Reams Asset Management Company, LLC). She's been a member of SLA since 2006. ❖



Loyal Science-Technology Division Members

These members of long standing were recognized at the Science-Technology Division Annual Business Meeting and Awards Breakfast.

- Judith Barnett – 30 years (1978)
- Mary Barravecchia – 35 years (1973)
- Elizabeth Bryson – 25 years (1983)
- William Budington – 30 years (1978)
- Bill Cohen – 30 years (1978)
- Vera Chase – 65 years (1943)
- Lucy Curci-Gonzalez – 30 years (1978)
- Cynthia Hill – 30 years (1978)
- Maryde King – 35 years (1973)
- Cheryl Lamb – 30 years (1978)
- Irene Laursen – 35 years (1973)

- H. R. Malinowsky – 45 years (1963)
- Marvine McNeil Brand – 55 years (1953)
- Jean Miller – 45 years (1963)
- Paul Murphy – 25 years (1983)
- William Ogden – 25 years (1983)
- Sarah Omanson – 62 years (1946)
- Jean Piety – 50 years (1958)
- John Piety – 33 years (1975)
- James Reilly – 35 years (1973)
- Gloria Zamora – 30 years (1978)



Anna Ren, award winner, and George Zajdel of ASTM International, Achievement Award sponsor

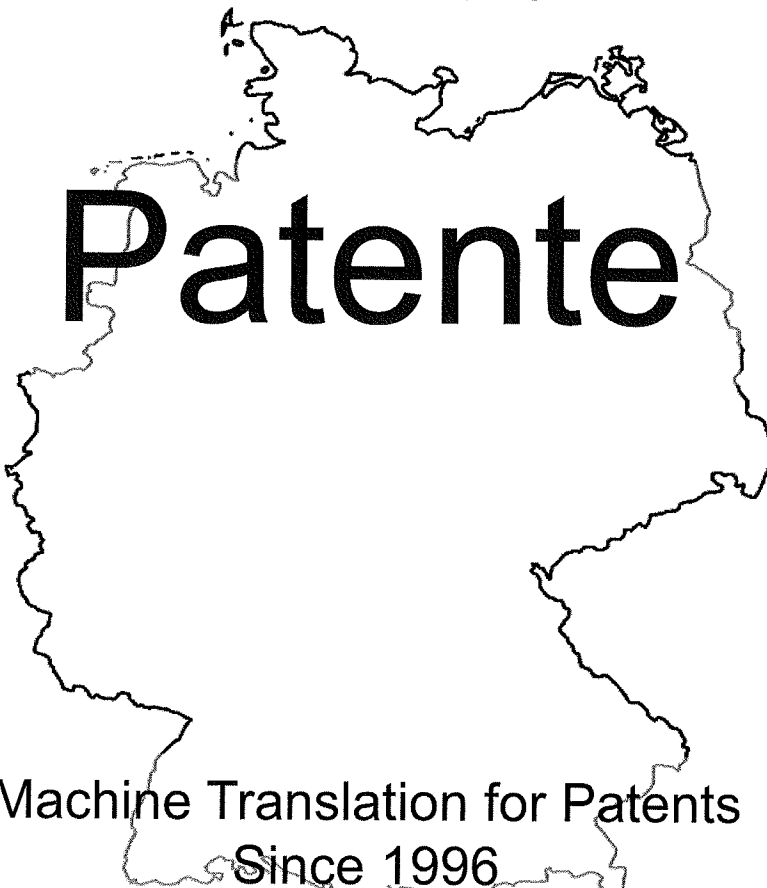


Carol Lucke with Philip DiVietro of ASME



Gloria Zamora, SLA President-Elect, receives her Appreciation Award for her 30 year membership in the Sci-Tech Division from Christine Whitaker, Division President.

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Web Reviews

Lisa R. Johnston



Reviews of web resources of interest to *SciTech News* readers.

“Don’t be evil”: Give Google some credit OR Google tools that libraries can learn to love.

With Google, you already search the web, share photos/movies/music, map directions and discover new things...but there are some tools you may have missed. This web search engine is on a mission to “organize the world’s information and make it universally accessible.” So let’s explore the new tools and technology that pair Google-efficient tools with library-quality results to weave together a rich information web that goes beyond just the World Wide Web.

We’ll look at tools located in the “More” tab at the top of every Google search page, such as, Google Docs, RSS Reader, Google Scholar, and iGoogle Research Gadgets that will help you access, evaluate, and share information in an easy collaborate environment.

“Virtual Reference”

<http://www.google.com/goog411>

Obviously users (and librarians) find it convenient to “google” any question for a quick ready reference answer using Web search. But let’s say you want more reference options from more locations? Google was early to adopt alternate modes of “reference” services that libraries are just now testing out. Phone reference is typical, but automated, voice-activated service is Google-411. Try dialing 1-800-GOOG-411 to perform a free information search based on local businesses. The automated service is surprisingly quick and easy to navigate using your voice. Once you hear the result you want, saying “yes” will connect you or get address information.

Google 1-800-GOOG-411

Dial from any phone
1-800-GOOG-411
 (1-800-466-4111)

About 800-411
 Google's new 411 service is fast, fun and easy to use. Give it a try now and see how simple it is to find and connect with local businesses for free.

Like the video? Want to comment or post a link to this video? Visit our comment page at www.google.com/411 and find your opinion on the 411 service.

- 1 Dial 1-800-GOOG-411 from any phone
- 2 Give the location and business type
- 3 Connect to the business for free
- 4 Done!

<http://www.google.com/SMS>

Google SMS is a text-messaging service that does the same thing. Simply text “google”

(or 46-6453,) your zip code and search information and they will text you back the results (carrier SMS charges may apply). Some good examples of use are “02138 library” or “55105 movie.” The results are not always precise but they return in less than 30 seconds.

“Current Awareness”

<http://www.google.com/alerts>

The screenshot shows the iGoogle homepage with a search bar at the top. Below the search bar are several widgets: "BeTwittered" with a list of tweets, "Slashdot" with news links, "NYT's Most E-mailed" with a list of articles, "digg" with a list of items, and a "Weather" widget for Minneapolis, MN. The page is densely packed with information and navigation options.

I’ve been running a Google Alerts for a few months now, and they are unobtrusive, interesting, and useful. It depends on your search topic, but weekly reminders of new blogs, news, or web pages updated with your search are a great way to stay on top of things. Plus they are incredible easy to setup and manage. Google gives relevant examples such as “keeping tabs on your favorite sports teams.” However, sci-tech librarians might also like the tool as an alternative to RSS feeds that tend to pile up unnoticed.

<http://www.igoogle.com>

Speaking of RSS, Google’s customized gadget page, iGoogle, is another useful tool that might help with web information overload. Your RSS feeds can be loaded into this page as a multi-task reader and by “adding stuff,” your page becomes a research hub of useful resources. Google widgets (aka “stuff” in iGoogle) can be anything and many libraries have created their own customized tools to search their catalog, list favorite databases, and view which books users

have checked out. Most of the code for Google widgets is open source, so find gadgets that you find useful and make them your own. Some nice library-related gadgets are: "Google Books," "Wikipedia," and "Google Scholar Citation Counter" (calculates an author's h-index). Other fun stuff includes "NASA image of the Day" and "Google Translate."

"The OPAC"

<http://www.google.com/googlebooks>

Amid copyright battles and intellectual property feuds, Google Book Search is finally starting to grow from its controversial infancy to the healthy, robust realization that searching the full-text of books is good for libraries. Why? Each book from Google's scanning project includes a link to an OCLC Open Worldcat search allowing users to find the book in nearby libraries. Need more? A new feature, called Library Catalog Search displays records from libraries around the world that do not yet exist in Google Books. This search feature is expected to get better as Google integrates OCLC seamlessly into their book search, allowing them to display which local libraries own the item by knowing the location of their users.

The screenshot shows a Google Patents search result for a patent titled "Metal wheeled truck for books, videos and tapes". The patent number is D456374, filed on April 17, 1998, and issued on June 26, 1999. The inventor is Hal S. Wady, and the assignee is Smith System Inc. The U.S. Classification is D24 21; D24 12, and the International Classification is 1202. The patent includes a drawing of a wheeled cart with shelves. The page also lists citations and references by other patents.

Patent Number	Title	Issue date
D152243	SERVICE CART FOR SERVICE STATIONS AND THE LIKE	Jun 1949
D172276	COMBINED BOOKCASE AND TABLE OR THE LIKE	Aug 1954
D186570	BOOK TRUCK	Oct 1963
D234466	AVARIABLE COPY X	Aug 1975
D366531	Side-loading dish and tray cart	Nov 14, 1989
D382256	Book cart	Jul 26, 1995

picture can really help things along. For example, the "Metal wheeled truck for books, videos and tapes" ... also known as a book cart.

<http://scholar.google.com/scholar>

Numerous studies have recently found that Google Scholar is comparable, occasionally superior, to mainstay article databases such as Web of Science and Compendex. And even though it is still unclear as to where Scholar indexes and where it doesn't, users can still appreciate the simple search box with advanced search features that would make even a Sci-Tech librarian proud. Additional links search Scholar for articles "Cited by" the source and "Related Articles" for results sharing references to the source.

The screenshot shows a Google Books search result for the book "The Whale and the Supercomputer: On the Northern Front of Climate Change" by Charles P. Whitham. The book is available in paperback for \$20.95. The description discusses the impact of climate change on ecosystems and the role of supercomputers in modeling climate. The page also includes reviews and references from web pages.

The real bonus for libraries are the clear and easy "library links" to the full-text articles. Scholar works with a library's link resolver to determine which journals and papers they've subscribed to electronically, and then Google users from that institution can gain access.

These library links can be set up under Scholar Preferences. Once you are in Preferences, you may also set Google Scholar to work with your favorite citation manager. The results from a Scholar search will then show a citation export link to deliver references to your RefWorks, EndNote, RefMan, or BibTex account.

"Abstracts and Indexes"

<http://www.google.com/patents>

Patents currently searches the public domain United States Patent and Trademark Office (USPTO) website and international searching is anticipated. The Google Patents Search allows you to not only search by keyword, but also by thumbnail images. It is surprising how often everyday items have contorted names and a

"Library as place"

<http://docs.google.com>

Collaboration and coming together are main reasons for the existence of libraries. These needs haven't diminished and hopefully never will. But

in the age of the internet a new need just as important has surfaced for digital collaboration. Google Docs has incredible collaboration power and is worth a look. With all the usual features of proprietary software, your word documents, data spreadsheets, and slide presentations can all be created and stored online, so leaving your jump-drive at home is not a problem.

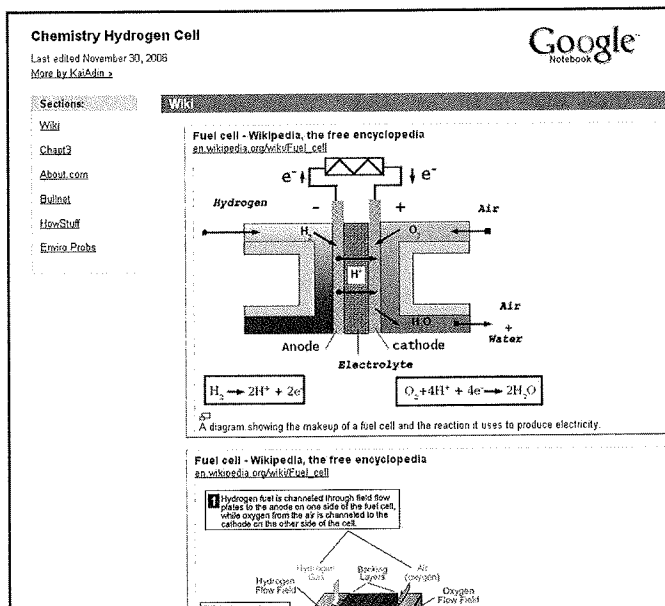
Users also have the option to make their work public or share with certain individuals, making the version control feature very useful by saving each revision and tracking when and by who changes were made. My personal favorites are the cool visualization gadgets that come with Google spreadsheets. Timelines, motion charts, or other visualization elements can make data more interactive. And when a gadget is displayed on your iGoogle page (see above) each time you

change or edit your data your visualization will be dynamically updated.

“Annotated bibliography”

<http://www.google.com/notebook>

Although nothing could ever replace a librarian’s love for his/her annotated bibliography, creatively describing the information you find online might catch on with this new tool. Notebook allows you to clip and collect information as you search the web. It combines “labels” (i.e. tagging) with annotations and snippets of text, images, or video to keep track of information. These collections are then made “public” and searchable so you can share your findings with others with similar interests. This time-saving tool might be appropriate for student groups beginning their research project or single users simply trying to keep track of their bookmarks in a more comprehensive way. ❖



Google Scholar search results for "Cosmological Constant". The interface shows search filters for Blogs, Books, Products, Groups, Patents, and Scholar. The results list several articles, including "Observational Evidence from Supernovae for an Accelerating Universe" and "Measurements of Q and A from 42 High-Redshift Supernovae".

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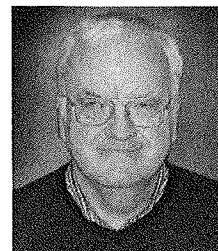
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ACM Transactions on Reconfigurable Technology and Systems (TRET). 1936-7406. ACM. v.1, 2008. 4/year. <http://tretscse.sc.edu/index.html>

TRET is a new journal focused on research in, on, and with reconfigurable systems and on the underlying technology (which is currently that of FPGAs but could include other approaches involving an adaptable fabric) that supports these systems for computing or other applications. *TRET* will be a journal that covers reconfigurability in its own right. Topics appropriate for *TRET* include all levels of reconfigurable system abstractions and all aspects of reconfigurable technology including platforms, programming environments and application successes, such as the systems architecture of a reconfigurable platform, the programming environment of a reconfigurable system, applications on which success can be demonstrated, and the underlying technology from which reconfigurable systems are developed.

Annual Review of Analytical Chemistry. 1936-1327. Annual Reviews. v.1, 2008. \$197.00. <http://www.annualreviews.org/>

This publication addresses measurement science in general with a focus on concepts, materials, chemicals, and/or processes. Topics reviewed include atmospheric analysis, atomic force microscopy, CARS imaging, electrochemistry on the nanoscale, nanoparticle sensors, on-chip multiplexing analysis, planetary and interstellar chemistry, nuclear magnetic resonance, mass spectrometry, microfluidics, biosensors, and chromatography.

Applied Physics Express (APEX). 1882-0778. Japan Society of Applied Physics. v.1, 2008. Weekly online, monthly in paper. \$2,040.00 (includes Japanese Journal of Applied Physics) <http://apex.ipap.jp/>

Formerly Japanese Journal of Applied Physics, Part 2, *Applied Physics Express (APEX)* is a letter journal devoted solely to rapid dissemination

of up-to-date and concise reports on new findings in applied physics. The motto of APEX is high scientific quality and prompt publication. Papers for APEX will be published online within two weeks, in the fastest case, from receipt to online publication. The journal publishes articles dealing with the applications of physical principles and emphasis will be given to developing and emerging fields in applied physics. Topics covered include semiconductor, superconductor, spintronic, dielectric, and organic materials; photonics, quantum electronics, and plasmonics; device physics; nanoscale science and technology; thin films, surfaces, interfaces, and crystal growth; plasmas, atomic, molecular, and chemical physics, and applied nuclear physics; instrumentation, measurement, and fabrication technologies; and interdisciplinary areas such as bioelectronics/photonics and environmental/energy technologies.

Fungi. 1941-4943. v.1, 2008. 5/year. \$35.00. <http://www.fungimag.com/editorial.htm>

Each issue of *Fungi* explores the world of mycology from many different angles. With regular features ranging from toxicology to medicinal mushrooms, from photography to book reviews, *Fungi* informs everyone from beginner to professional mycologist. Additionally, every issue features peer-reviewed technical papers ranging from original research findings to reviews of taxonomic groups to new records of North American species. The user-friendly website posts supplemental information for published articles, plus extras. Recent articles include "The wild epicure: mushroom love, morels: seasonality, meditation, celebration", "Medicinal mushrooms: irofulven—Halloween trick or a beacon of light?", and "Fungi and sustainability".

High Performing Buildings (HPB). 1940-3003. ASHRAE. v.1, 2007. 4/year. Free. <http://www.hpbmagazine.org/>

This quarterly magazine is published by the Society of Heating, Refrigerating and Air-

Conditioning Engineers (ASHRAE) and distributed to building owners, facility managers, architects, contractors and engineers. The magazine's goal is to help decision makers in the building community learn about the benefits of innovative technologies and energy-efficient design and operation through case studies of exemplary buildings, developed through the support of leading practitioners in the sustainability movement. *High Performing Buildings* is available in digital form at no cost. Building projects highlighted in the latest issue include the new Seattle City Hall, Sweetwater Creek State Park in Georgia, Cambridge (MA) City Hall Annex, 31 Tannery Project in Branchburg, New Jersey, and Indian Springs Metropark in White Lake, Michigan.

The Journal of Building Performance Simulation (JBPS). 1940-1493. Taylor & Francis. v.1, 2008. 4/year. \$468.00. <http://www.tandf.co.uk/Journals/titles/19401493.asp>

This official journal of the International Building Performance Simulation Association (IBPSA) publishes research, technology and tool development related to building performance modelling and simulation. This includes modelling and simulation aspects of building performance in relation to other research areas such as building physics, environmental engineering, mechanical engineering, control engineering, facility management, architecture, ergonomics, psychology, physiology, computational engineering, information technology, and education. The scope of topics includes theoretical aspects of building performance modelling and simulation; methodology and application of building performance simulation for any stage of design, construction, commissioning, operation or management of buildings and the systems which service them; uncertainty, sensitivity analysis, calibration, and optimization; and methods and algorithms for performance optimization of buildings and their systems.

Journal of K-Theory: K-theory and its Applications to Algebra, Geometry, Analysis and Topology. 1865-2433. Cambridge University Press. v.1, 2008. 6/year. \$800.00. <http://journals.cambridge.org/action/displayJournal?jid=KAG>

Journal of K-Theory is concerned with developments and applications of ideas and methodologies called K-theory, which have their origin in the work of Alexander Grothendieck in

algebraic geometry. Subsequently they have taken hold in various areas of topology, algebra, and analysis and in recent times have contributed to the establishment of noncommutative geometry. Recent articles include "The invariant subalgebra and anti-invariant submodule of $K^*K(p)$ ", "Equivariant intersection theory and surgery theory for manifolds with middle dimensional singular sets", and "On compact and Fredholm operators over C^* -algebras and a new topology in the space of compact operators".

Journal of the Ocean Science Foundation. 1937-7835. v.1, 2008. 4/year. Free. <http://www.oceansciencefoundation.org/josf.html>

The Ocean Science Foundation (OSF) is a non-profit non-governmental organization (NGO) set up to facilitate research on endangered tropical marine ecosystems. The Foundation's mission is to collaborate with conservation and academic NGOs in scientific research projects based in developing countries, especially projects on the ecology and conservation of coral reefs. Among other efforts, OSF is developing a 53-foot catamaran as a research platform for projects in the field. Recent articles include "Redescription of *Coryphopterus tortugae* (Jordan) and a new allied species *Coryphopterus bol* (Perciformes: Gobiidae: Gobiinae) from the tropical western Atlantic Ocean."

Optics and Photonics Letters (OPL). 1793-5288. World Scientific. v.1, 2008. <http://www.worldscinet.com/opl/opl.shtml>

Optics and Photonics Letters (OPL) is an open access journal which offers rapid dissemination of original and timely results in various fields of optics and photonics, with emphasis on peer-reviewed short communications. Articles cover the latest research in optical sciences and technology, including free-space optics, integrated and fibre optics, nonlinear optics and lasers, bio/nano-optics and photonics, photonic materials and devices, and optical and photonic technology.

Ground Improvement, Proceedings of ICE 1755-0750. Institution of Civil Engineers. v.161, 2008. 4/year. £217.00. http://www.ice.org.uk/services/services_journals.asp

This journal publishes high-quality, practical papers relevant to engineers, specialist contractors and academics involved in the development,

design, construction, monitoring and quality control aspects of ground improvement. It covers a wide range of civil and environmental engineering applications, including analytical advances, performance evaluations, pilot and model studies, instrumented case-histories and innovative applications of existing

technology.

Articles in the latest issue include "Eccentricity effect on a footing supported by a stone column", "Uplift of shallow foundations with cement-stabilised backfill", and "Subgrade modulus of geocell-reinforced sand foundations". ❖



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GEOGRAPHY

G70 2007-050932 978-1-59385-565-9
A primer of GIS; fundamental geographic and cartographic concepts.
 Harvey, Francis.

Guilford Pr., ©2008 310 p. \$50.00

This textbook examines the choices considered when creating geographic representations and cartographic representations, transforming spherical coordinates to planar coordinates, and modeling geographic data. Harvey (geography, University of Minnesota) introduces the three generic options for recording the locations and characteristics of things and events, the principles of remote sensing, map design elements, and geostatistical methods. Fifteen color plates are provided in the middle of the book, while black and white images are scattered throughout.

PRODUCTION, INDUSTRY, COMMERCE

HD9502 2007-036185 978-1-60021-957-0
Energy outlook until 2030.

Title main entry. Ed. by Timothy A. Burlingame.

Nova Science Publishers, ©2007 326 p. \$98.00

This volume reproduces the text of *Annual Energy Outlook 2007*, a report produced by the Energy Information Administration, the independent statistical agency within the US Department of Energy. The report presents long-term projections of energy supply, demand, and prices through 2030 that are based on results from EIA's National Energy Modeling System. In addition to summarizing projected energy market trends, it also includes discussion of evolving legislation and regulatory issues and key energy issues, such as the potential for biofuels in US transportation markets and the impact of rising construction costs on energy markets. The report is also available at the Energy Information Administration's website.

SCIENCE (GENERAL)

Q183 978-1-904275-32-9
Essentials of scientific computing; numerical methods in science and engineering.

Zalizniak, Victor.

Horwood Publishing, ©2008 218 p. \$100.00 (pa)

Before a student or research scientist can master the idea of computer modeling, the basics of classical numerical methods must be learned. Zalizniak (Krasnoyarsk State U., Russia) reviews the various mathematical numerical techniques for students of engineering, physics and computer science, and shows how iterative processes, extrapolation and matrix factorization are related. An introduction to MATLAB is also included. Distributed in the US by ISBS.

Q336 2007-032031 978-1-59904-705-8
Artificial intelligence for advanced problem solving techniques.

Title main entry. Ed. by Dimitris Vrakas and Ioannis P. Vlahavas.

Information Science Reference, ©2008 370 p. \$180.00

Vrakas and Vlahavas, both of the Aristotle U. of Thessaloniki, have written this book to teach IT researchers, system engineers, educators and students about the latest research on automated problem solving. Focusing on the development, programming and analysis of artificial intelligence software systems, the authors discuss optimization techniques, heuristics, constraint satisfaction, software configuration and planning. Emphasis is placed upon the relationship between advanced problem solving techniques and search categories.

Q342 2008-271034 978-0-470-10526-9

Computational intelligence in bioinformatics.

Title main entry. Ed. by Gary B. Fogel et al.

John Wiley & Sons, ©2008 355 p. \$79.95

Bioinformatics has become increasingly useful in science and industry, but the limitations of traditional algorithms have made modeling difficult. At the same time, researchers have made significant advances in computational intelligence, and it appears from these 13 articles their work could significantly ease the current bottleneck. Papers address gene expression analysis and systems biology (including such topics as neural classifier and swarm intelligence in multi-class cancer diagnosis, gene expression profiles and evolutionary computation, clusters in gene expression data, and the application of evolutionary computing to gene networks), sequence analysis and feature detection (including fuzzy-granular models for identification of marker genes, evolutionary feature selection, fuzzy approaches to the analysis of CpG island methylation patterns), molecular structure and phylogenetics (including evolutionary algorithms in a variety of applications and machine learning approaches for prediction of human mitochondrial proteins), and medicine (featuring evolutionary algorithms for chemotherapy and fuzzy ontology text mining of biomedical texts).

MATH, COMPUTERS

QA9 2007-007725 978-0-521-70757-2

An introduction to many-valued and fuzzy logic; semantics, algebras, and derivation systems.

Bergmann, Merrie.

Cambridge U. Pr., ©2008 329 p. \$36.99 (pa)

Suitable for graduate and advanced undergraduate courses, this opens with a succinct review of the philosophy of fuzzy logic, its history and scope. Bergmann (computer science emerita, Smith College) then reviews classical propositional logic, including its language and semantics, and the language and semantics of first-order logic. She then describes alternative semantics for truth-values and truth-functions (with numeric truth-values and abstract algebras), then covers the semantics of three-valued propositional logics, derivation systems for three-valued propositional logic, three-valued first-order logic semantics, derivation systems for three-valued first-order logic, alternative semantics for three-valued logic, fuzzy propositional logics, fuzzy algebras, semantics of fuzzy first-order logics, derivation systems for fuzzy first-order logic, extensions

of fuzziness and fuzzy membership functions. Bergmann provides exercises with each chapter.

QA76 978-89-31434-38-5

Windows Vista accelerated

Hart-Davis, Guy.

YoungJin.com, ©2007 314 p. \$24.99 (pa)

Hart-Davis has been writing about computers, Windows, and widely-used programs for 15-plus years, and is the author of several books and an online newsletter. He offers users an accessible guide to the latest version of Microsoft's leading operating system, Windows Vista. Applicable to the Home Basic, Home Premium, Business, and Ultimate editions of Windows Vista, the text takes users step-by-step through the features: installing and upgrading to Windows Vista; navigating the user interface and running applications; working with files and folders; customizing Windows to suit individual needs; connecting to the internet and using Internet Explorer; enjoying music, video, DVD, and TV; using e-mail and Instant Messaging; managing hardware, printers, and fonts; handling security concerns; troubleshooting problems; and using the Windows Vista Ultimate features. Illustrated throughout with full-color, crisp screenshots and graphics.

QA76.5915 2007-037380 978-1-59904-840-6

Advances in ubiquitous computing; future paradigms and directions.

Title main entry. Ed. by Soraya Kouadri Mostefaoui et al.

IGI Publishing, ©2008 361 p. \$99.95

We are now wired cradle to grave, or at least most of the time in between. The technological and social implications are immense, but fortunately the 12 articles in this look into the future are comprehensive, and they are drawn from those presented at the Third International Workshop on Ubiquitous Computing held in 2007. Topics include mobile phones and visual tags that link the physical world to the digital, context-aware mobile learning on the semantic web, model-driven development for pervasive information systems, device localization in ubiquitous computing environments, programmable ubiquitous computing environments from a middleware perspective, determinants of user acceptance for a ticketing system, kinetic user interfaces, mobile traffic information and monitoring systems, ambient business through open innovation in a ubiquitous computing world, activity-oriented computing, and threats to privacy in emerging applications. The editors include a comprehensive index.

QA76.76 2007-036760 0-7897-3727-2

100 things you need to know about Microsoft Windows Vista.

Geier, Eric.

Que Publishing, ©2008 204 p. \$24.99 (pa)
Written for PC users with moderate Windows experience, this guide reviews the system requirements for upgrading to Vista, tours the new Windows interface, and explains what is different from Windows XP. Step-by-step instructions demonstrate how to revert to the Windows classic look, access desktop settings, find renamed applications, speed up performance with a USB flash drive, and capture screenshots.

QA76.9 2007-038084 978-0-393-06228-1

The big switch; rewiring the world, from Edison to Google.

Carr, Nicholas.

W.W. Norton, ©2008 278 p. \$25.95
Just as electricity provision moved from a model of in-house generation to supply by utilities, Carr (a former executive editor of the *Harvard Business Review*) predicts that the world of information technology is undergoing a "big switch" to a utility-based model in which personal computers will become obsolete in the face of the World Wide Computer. He presents a wide-ranging analysis of the implications of the "big switch" for a general audience, examining likely impacts on corporate economies, consumer habits, software integration, media creation, war, democracy, religion, and other spheres of life.

QA76.9 2007-010253 978-0-470-04492-6

Handbook of applied algorithms; solving scientific, engineering, and practical problems.

Title main entry. Ed. by Amiya Nayak and Ivan Stojmenovic.

Wiley-Interscience, ©2008 544 p. \$100.00
Providing a combination of theory, algorithms, and simulations, this handbook bridges the gap between algorithmic theory and its applications. It explains how to apply algorithms and discrete mathematics to practical problems in application areas such as computational biology, computational chemistry, wireless networks, and computer vision. It also covers adapt mining, evolutionary algorithms, game theory, and basic combinatorial algorithms and their applications. The book's 18 self-contained chapters contain chapter exercises. It can be used as a text for a graduate course in basic algorithmic, combinatorial, and graph theoretical subjects and their applications in other disciplines. It can also serve as a resource for researchers, practitioners, and students in computer science,

life science, and engineering. The authors are both affiliated with the University of Ottawa, Canada.

QA402 2007-061748 978-0-89871-643-6

Linear programming with MATLAB.

Ferris, Michael C. et al. (MPS-SIAM series on optimization; 7)

SIAM, ©2007 266 p. \$45.00 (pa)

As part of the *MPS-SIAM series on Optimization*, this textbook introduces computer programmers and IT professionals to MATLAB software, and how it is used to develop algorithms and optimize mathematical applications. The authors, who all teach in the computer science department at U. of Wisconsin-Madison, show how to use MATLAB in a variety of applications, such as solving large linear problems, sensitivity analysis and parametric linear programming. A mathematical review is offered for those who need a refresher course in the basics of linear algebra and the simplex method.

ASTRONOMY

QB981 2007-282019 978-0-521-86875-4

Elements of string cosmology.

Gasperini, Maurizio.

Cambridge U. Pr., ©2007 552 p. \$85.00

The fascinating and emerging science relating string theory's impact on the foundations of primordial cosmology are clearly presented in this detailed text. Designed to present string theory to astrophysicists and, in turn, cosmology to string theorists, the volume presents chapters on basic string cosmology equations, conformal invariance and string effective actions, duality symmetries and cosmological solutions, inflationary kinematics, and the string phase. Subsequent chapters describe scalar perturbations, the anisotropy spectrum of the CMB radiation, dilaton phenomenology, and elements of brane cosmology. Gasperini (theoretical physics, U. of Bari, Italy) has presented a Ph.D. course on this topic and organized the chapters and content accordingly, with more advanced topics and computations presented in separate appendices at the end of many of the chapters. The text is designed for teaching graduate courses, and will also be of interest to readers with basic knowledge of relativity and quantum field theory.

QB981 2007-033467 978-1-56881-309-7

The wraparound universe.

Luminet, Jean-Pierre.

AK Peters Ltd., ©2008 316 p. \$39.00

An astrophysicist at the Paris-Meudon Observatory in France, Luminet champions one particular approach in a debate about the size and shape

of the universe—cosmic topology—that has been going on now for some 25 centuries. One consequence of a wraparound universe—he personally favors a spherical dodecahedron—is that the whole shebang may be a lot smaller than it looks. Eric Novak's translation of *Univers chiffonné*, published in 2001 by Librarie Arthème Fayard, includes corrections and an afterword reporting the latest observations.

PHYSICS

QC75 2007-030290 978-0-385-52069-0
Physics of the impossible; a scientific exploration into the world of phasers, force fields, teleportation, and time travel.

Kaku, Michio.

Doubleday, ©2008 329 p. \$26.95

Kaku (theoretical physics, City University of New York), well known to viewers of science documentaries as an entertaining and understandable science interpreter, continues as such in this new book. He confesses his lifelong fascination with science fiction and the ideas of force fields, invisibility rays, hyperspeed space ships, time travel and more, and then examines each of these science fiction staples, concluding that one day we may manage almost all of them. Kaku writes in a conversational style with clear explanations of the physics involved. Happily, he also largely avoids irritating analogies, which generally confuse rather than clarify but are often used by scientists to explain their work to laymen. Kaku respects the intelligence of his readers, even if they haven't studied non-linear equations.

QC174 978-981-270-702-4

The physics of the Z and W bosons.

Tenchini, Roberto and Claudio Verzegnassi.

World Scientific, ©2008 419 p. \$89.00

As an advanced study of the Standard Model of particle physics, Tenchini and Verzegnassi's textbook explains most of the properties of current reactions, including Flavour Changing Neutral Currents (FCNC) and Neutral Weak Currents. Through detailed and persistent explanations, the authors track the development in this field from the first theoretical proposal of the W boson to today's consistent and repeatable mathematical applications. Starting with weak current interactions, the book guides physics students through the characteristics of Z and W bosons within the Standard Model in a technical, straightforward manner. Tenchini is affiliated with INFN Pisa, Italy; Verzegnassi, with the U. of Trieste, Italy.

QC670 2007-050220 978-1-934015-20-9

Maxwell's equations and the principles of electromagnetism.

Fitzpatrick, Richard.

Infinity Science Press, ©2008 438 p. \$69.95

Suitable for upper-division electromagnetism courses or as a professional reference, this gives readers a solid background before launching into Maxwell's equations and electromagnetic waves. Working with text, examples, and illustrations, Fitzpatrick (physics, U. of Texas, Austin) begins with vectors and vector fields, moving immediately to time-independent Maxwell equations. Time-dependent Maxwell equations, electrostatic calculations, dielectric and magnetic media, magnetic induction, electromagnetic energy and momentum, electromagnetic radiation, and relativity and electromagnetism. He provides information on physical constraints, useful vector identities, and Gaussian units in appendices, provides a concise list of further reading, and supplies summaries at the beginning and exercises at the end of every chapter. This is an accessible and well-organized treatment of an essential discipline.

QC688 2007-031117 978-0-8194-6961-8

Field guide to lasers.

Paschotta, Rüdiger. (SPIE field guides; v.FG12)

SPIE, ©2008 139 p. \$37.00 (pa)

Intended for practicing engineers and scientists, this desktop reference reviews the construction, operation, and physics of laser beams, optical resonators, waveguides, and semiconductor, solid-state bulk, fiber, and gas lasers. Topics include gain saturation, Gaussian beams, diode bars and stacks, wavelength tuning, pulse generation, Q switching, mode locking, laser noise, and safety. Spiral binding.

QC793 2007-041605 978-1-56881-345-5

Beyond the nanoworld; quarks, leptons, and gauge bosons.

Dosch, Hans Günter.

AK Peters Ltd., ©2008 282 p. \$39.00

Writing for readers with a general interest in science, Dosch (emeritus, physics, U. of Heidelberg, Germany) describes the development of particle physics in its search for particles and forces beyond the world of atoms and molecules (the nanoworld). He chronologically traces the history of the science in order to give readers a basic understanding of lepton, quarks, and gauge bosons, the elementary building blocks underlying atomic structure. He also discusses the ongoing search for the so-called Higgs boson, which must exist if the standard model

of particle physics is correct. In addition to providing readers with a basic understanding of these particles, he also aims to show how closely intertwined theoretical and experimental advances have been in the search for them.

QC871 2007-034585 978-0-8493-3588-4

Atmospheric acoustic remote sensing.

Bradley, Stuart.

CRC / Taylor & Francis, ©2008 271 p. \$119.95

Used to determine wind speed, wind direction and turbulence in the atmosphere, sonic detection and ranging (SODAR) systems and radio acoustic sounding systems (RASS) apply sound waves as a methods of measurement. Devices with these features are increasingly popular in environmental applications as well to determine such measurements as ground-level pollution. Bradley (physics, U. of Auckland) reviews the basic science behind these systems first, then describes the working environment, which is atmosphere near the ground and sound in the atmosphere, and examines sound transmission and reception, SODAR systems and signal quality, SODA signal analysis, RASS systems, and applications in environmental and boundary layer research and measurements of wind power and loading, complex terrain and sound speed. For students and nonspecialist professions he gives the requisite mathematical background and also gives sample data sets and MatLab codes. Especially handy is an appendix on the installation of SODAR or RASS.

QC981 978-0-521-70597-4

Climate change 2007: impacts, adaptation and vulnerability. (CD-ROM included)

Title main entry. Ed. by Martin Parry et al.

United Nations Publications, ©2007 976 p. \$85.00

Climate Change 2007 is the Fourth Assessment Report of the Intergovernmental Panel on Climate Change and consists of three main volumes. This volume addresses the impacts of climate change, the vulnerability of natural and human environments, and the potential for response through adaptation. It evaluates evidence that observed changes in the climate have already affected physical and biological systems; assesses potential impacts on ecosystems, water resources, agriculture and food security, human health, coastal and low-lying regions, industry, and settlements; provides assessment for the major regions of the world; discusses the relationship between

mitigation and adaptation; evaluates key vulnerabilities to climate change; and assesses aggregate damage levels and the role of multiple stresses. The other volumes discuss the physical science basis of climate change and mitigation strategies. The CD-ROM reproduces the report in electronic form. The paperbound edition is distributed in the US by the United Nations.

CHEMISTRY

QD196 2007-010102 978-1-60021-656-5

Inorganic polymers.

Title main entry. Ed. by Roger De Jaeger and Mario Gleria. *Nova Science Publishers*, ©2007 925 p. \$145.00

With interest increasing in inorganic macromolecules for their potential in industrial and technological applications, editors De Jaeger (U. des Sciences et Technologies de Lille, France) and Gleria (Istituto ISTM del CNR, Padova, Italy) decided to offer a follow-up to their 2004 book titled *Phosphazenes: A Worldwide Insight*. Nineteen contributed chapters (by authors based in Europe, the US, and Japan; their e-mail addresses are supplied) discuss silicones in industrial applications, nanostructured materials, photochemistry of polysiloxanes, polysilanes, polycarbosilanes, polysilazanes, chiral inorganic polymers, and luminescent dendrimers based on metal complexes, among other topics.

QD381 2007-029090 978-0-471-72543-5

Organic and physical chemistry of polymers.

Gnanou, Yves and Michel Fontanille.

Wiley-Interscience, ©2008 617 p. \$100.00

The aim of this text is to break the traditional boundaries between polymer chemistry and the physical chemistry and physics of polymers. The text provides a thorough introduction to the fundamentals of polymers, including their structure and synthesis as well as their chemical and physical properties. Emphasis is on the nature of synthesis of polymer chains, polymers as a class of materials that exhibit both viscous and elastic behaviors, and the assembly of polymer chains. The book can be used as a text for advanced undergraduate and graduate students in physical and polymer chemistry, and as a practical reference for researchers and professionals in the polymer industry. Gnanou is director of research at the National Center for Scientific Research in Organic Polymer Chemistry at the University of Bordeaux, France. Fontanille is emeritus professor at the University of Bordeaux, France.

QD461 2007-024689 978-0-470-18096-9

Dihydrogen bonds; principles, experiments, and applications.

Bakhmutov, Vladimir I.

Wiley-Interscience, ©2008 241 p. \$125.00

Focusing on its role in organizing interactions in different chemical functions and molecular aggregations, Bakhmutov (chemistry, Texas A&M U.) includes an introduction to weak covalent interactions and dihydrogen bonding for non-specialists and includes experimental and theoretical approaches to investigations for the experienced. He defines hydrogen-bonded systems in a brief summary and provides the concepts of dihydrogen bonding in a concise overview, then describes the experimental criteria of dihydrogen bond formation, theories and experiments related to intramolecular dihydrogen bonds, intermolecular dihydrogen-bonded complexes from Groups 1A-4A to Xenon dihydrogen-bonded complexes, intermolecular dihydrogen bonding in transition metal hydride complexes, correlation relationships for intermolecular dihydrogen bonds, dihydrogen bonding in supramolecular chemistry and crystal engineering, and dihydrogen bonds as intermediates in intermolecular proton transfer reactions. Each chapter includes references. The result is eminently practical and remarkably accessible.

QD462 2007-002393 978-1-60021-620-6

Quantum chemistry research trends.

Title main entry. Ed. by Mikas P. Kaisas.

Nova Science Publishers, ©2007 261 p. \$129.00

Nova staff editor Kaisas has enlisted the help from contributors all over the world to discuss the latest trends in quantum chemistry, and how quantum mechanics and field theory are being used to address problems in the general field of chemistry. These articles, which are written with research chemists in mind, discuss such trends as new tools for treating intermolecular interactions, calculating quantum dot structures and using the Hamilton-Jacobi Equation in relativistic quantum chemistry.

GEOLOGY

QE522 2007-038441 978-0-632-05443-5

Fundamentals of physical volcanology.

Parfitt, Elizabeth A. and Lionel Wilson.

Blackwell Publishing, ©2008 230 p. \$69.95 (pa)

For those curious about volcanos, especially those of us who live within sight of an active one. This well written textbook covers the formation

of volcanos, the different types of eruptions, lava flows, monitoring for volcanic activity, climatic results of eruptions, and even volcanos on other planets. Parfitt is a research fellow at U. of Lancaster UK, and Wilson is in the environmental science department at the same university. The work is complete with a glossary, many photos, and questions for discussion and further research.

QE606 2007-032819 978-0-8137-2434-8

Exhumation associated with continental strike-slip systems.

Title main entry. Ed. by Alison B. Till et al. (Special paper (Geological Society of America); 434)

Geological Society of America, ©2007 270 p. \$80.00 (pa)

This collection of geological studies on the subject of exhumation concentrates on strike-slip faults, and how plate boundaries can affect these natural but potentially dangerous occurrences. Edited by Till (U.S. Geological Survey, Roeske (U. of California, Davis), Sample (Northern Arizona U.) and Foster (U. of Florida)), these papers discuss such geological exhumation topics such kinematics, deformation processes, dextral offset and patterns of bedrock uplift. This series of highly-technical articles was written primarily for geologists in the field.

QE627 2007-018635 978-0-8137-2431-7

Tectonic growth of a collisional continental margin; crustal evolution of southern Alaska.

Title main entry. Ed. by Kenneth D. Ridgway et al. (Special paper; 431)

Geological Society of America, ©2007 658 p. \$155.00 (pa)

This work integrates new geophysical and geologic data, including many field-based studies, to better link the sedimentary, structural, geochemical, and magmatic processes that are important for understanding the development of collisional continental margins. Material is in sections on synthesis of the regional geophysical and geological framework; Mesozoic magmatism, deformation, and basin development; Cenozoic magmatism, deformation, and basin development; and investigations related to mineral exploration. All of the research presented focuses on the convergent margin region of southern Alaska. Numerous b&w maps, color photos, and color images are included. Ridgway is affiliated with the Department of Earth and Atmospheric Sciences at Purdue University.

BIOLOGY

QH75 978-1-59726-135-7

State of the wild; a global portrait of wildlife, wildlands, and oceans, 2008-2009.Title main entry. Ed. by Sharon Guynup. (Series: title) *Island Press*, ©2008 286 p. \$29.95 (pa)

Forty-two international conservation specialists and writers contribute 29 chapters to the second text in a science-based series produced by the Wildlife Conservation Society which addresses emerging issues in wildlife conservation, the conversation of wild places, and future directions of conservation efforts. Where the first volume focused on wildlife hunting and trade, the second book turns to the integration of wildlife health, human health, and the health of domestic animals—an increasingly critical dimension of conservation that is underappreciated by the mainstream conservation community. Also included are essays on the conservation of wildlife; conservation of wild places; people, culture and conservation; and the art and practice of conservation. Illustrated throughout with b&w photographs, the text is academic but accessible to general readers concerned about conservation issues.

QH324 2007-034278 978-0-470-04144-4

Analysis of biological networks.

Title main entry. Ed. by Bjorn H. Junker and Falk Schreiber. (Bioinformatics; computational techniques and engineering)

Wiley-Interscience, ©2008 346 p. \$90.00

Junker, a biologist with a strong background in bioinformatics, has teamed with Schreiber, a noted computer scientist, to edit this textbook on biological networks and modern analytical protocols. Designed for graduate level courses in biochemistry and bioinformatics, this book covers such topics as the basics of graph theory, network motifs and clustering, ecological networks, signal transduction and network centralities. This book is the latest entry in the *Bioinformatics: Computational Techniques and Engineering* series from Wiley.

QH390 978-1-58829-777-8

Environmental genomics.

Title main entry. Ed. by C. Cristofre Martin. (Methods in molecular biology.)

Humana Press Inc., ©2008 364 p. \$99.50

Environmental genomics seeks to predict how organisms will respond at the genetic level to changes in their external environment; more generally it encompasses the impact that environmental conditions have on gene

transcription, protein levels, the stability of the genome itself, or the diversity of genomes in a population. Here scientists describe methods for profiling gene expression, detecting whole-genome mutation, and determining species diversity.

QH438 2007-035291 978-0-313-34900-3

Just genes; the ethics of genetic technologies.

Barash, Carol Isaacson.

Praeger, ©2008 264 p. \$49.95

Barash is head of a private consulting firm founded in 1994, which specializes in genetics, ethics, and policy. She has worked with leading public and private institutions worldwide on the ethical integration of new genomic technologies, has published numerous articles and books, and has taught ethics at several American universities. Her text offers general readers an opportunity to better understand the complexities involved in adopting new genetic technologies, and to learn how to better identify and analyze ethical issues arising in several areas in which genetic advances are already affecting health care and agriculture. Using case studies and examples throughout, she explores a range of current topics, from stem cell research to genetically modified food, genetic mapping and cloning.

QH506 2007-930588 978-1-58829-899-7

Chromosomal mutagenesis.

Title main entry. Ed. by Gregory D. Davis and Kevin J. Kayser. (Methods in molecular biology; 435)

Humana Press Inc., ©2007 235 p. \$99.50

Forty-two international academics and researchers contribute 16 chapters reflecting the variation among organisms regarding the ease of chromosomal mutagenesis and manipulation. The papers focus on a range of chromosomal mutagenesis techniques for both prokaryotic and eukaryotic organisms, and present a variety of state-of-the-art methods in step-by-step laboratory format, including insertional gene disruptions, gene knockouts, stimulated homologous recombination techniques and novel tools based on integrases, eukaryotic transposons, triplex forming oligonucleotides, group II introns, and engineered site-directed nucleases. In particular, the authors seek to highlight techniques that expand the genetic toolbox beyond model organisms into a wider variety of cell types and organisms.

BOTANY

QK110 2007-030688 978-0-7627-4298-1

Medicinal plants of North America; a field guide.

Meuninck, Jim.

FalconGuide, ©2008 159 p. \$16.95 (pa)

A biologist who has extensively studied plants used as medicine by Native Americans, herbalists, and holistic practitioners, defines what makes a wild plant medicinal and types of herbal preparations. With color photos, references to Germany's Commission E, and cautions, Meuninck profiles traditional and modern uses of plants found in yards, Eastern U.S. forested areas, wetlands, the mountain West, and deserts. The guide includes a list of life expectancies in several countries, top garden herbs, and resources. *FalconGuide* is an imprint of Globe Pequot Press.

ZOOLOGY

QL368 2007-048391 978-0-415-25785-5

Paramecium genetics and epigenetics.

Beale, G.H. and John R. Preer.

CRC Press, ©2008 191 p. \$99.95

Honored and emeritus now, long-term researchers into the pathogenic protozoa here describe how it can be used as a model for studying both the simple Mendelian aspects of genetics and all other aspects of inheritance, conveniently bundled into the term epigenetics. They explain laboratory techniques for investigating such topics as genetic processes, mating types, micronuclei and macronuclei, cortical morphogenesis, and behavior.

QP356 2007-046827 978-1-58562-273-3

Science and psychiatry; groundbreaking discoveries in molecular neuroscience.

Snyder, Solomon H.

American Psychiatric Pub., ©2008 477 p. \$65.00

A Nobel Prize-winner in physiology/medicine introduces Snyder (Johns Hopkins U.), a pioneer in the field of psychopharmacology who helped identify receptors for neurotransmitters and drugs and their role in how psychotropic agents work. This collection reprints about two dozen research papers authored/coauthored by Snyder from 1973-2005, with accompanying commentaries by peers on topics in the book's nine sections. They review major discoveries in the field or point out their relevance to clinical practice. In the closing piece, Snyder speculates about factors conducive to creativity in scientific discovery.

QP406 2007-050489 978-0-87893-669-4

The neurobiology of learning and memory.

Rudy, Jerry W.

Sinauer Associates, ©2008 380 p. \$74.95

Besides psychology, says Rudy (U. of Colorado-Boulder), biochemistry, cellular-molecular biology, electro-physiology, neuroanatomy, neuropsychology, and other disciplines now have something to say about learning and memory. He integrates the findings into a coherent framework that can be understood by students with a rudimentary background in psychology and the neurosciences. He covers the synaptic basis of memories, molecules, and neural systems.

QP519 2007-930114 978-1-58829-659-7

Affinity chromatography; methods and protocols, 2d ed.

Title main entry. Ed. by Michael Zachariou. (Methods in molecular biology; v.421)

Humana Press Inc., ©2008 343 p. \$99.50

This second-edition volume from Humana Press's "Methods in Molecular Biology" series provides practical knowledge for beginners and also serves as an up-to-date reference for more seasoned researchers who are developing affinity separations for various applications. The new edition expands on traditional approaches and features new protocols as well. Twenty-one contributed chapters edited by Zachariou, a pharmaceutical project-management director, are arranged in three sections focusing on various modes of affinity chromatography; the use of purification tags; and various applications, among them: monolithic bioreactors for macromolecules, plasmid DNA purification, phosphorylated proteins, and analysis of proteins in solution using affinity capillary electrophoresis.

QP551 2007-040536 978-0-470-51297-5

Computational methods for mass spectrometry proteomics.

Title main entry. Ed. by Ingvar Eidhammer et al.

John Wiley & Sons, ©2007 284 p. \$100.00

As explained by the authors, proteomics is "the study of the subsets of proteins present in different parts of an organism and how they change with time and varying conditions." Eidhammer and Flikka (both from the U. of Bergen, Norway) are joined by Martens (European Bioinformatics Institute) and Mikalsen (Norwegian Radium Hospital Oslo) to present the various technologies and methods currently employed in the field of proteomics. Recent developments in instrumentation should appeal to graduate students in bioinformatics and molecular biology, as well as research

scientists currently working in the field.

QP551 2007-942569 978-1-58829-864-5

Molecular modeling of proteins.

Kukol, Andreas. (Methods molecular biology; 443)

Humana Press Inc., ©2008 390 p. \$99.50

As it grows in popularity and possible applications, biomolecular simulation has moved from a small group of specialists to the wider academic community. Nonspecialists, however, will likely need help in the step-by-step processes they need to solve problems, particularly when they are dealing with software packages dedicated to molecular modeling. This collection of articles gives tips on troubleshooting and avoiding pitfalls as well as basic procedures and concepts and reviews of methods. General topics include methodology (including Monte Carlo simulations), free energy calculation (including those applied to membrane proteins), molecular modeling of membrane proteins (including implicit membrane models for simulation) protein structure and determination, conformational change (including protein mis-folding in disease), and applications to drug design (including molecular docking). Includes links to free software.

QP606 2007-933147 978-1-58829-683-2

Telomerase inhibition; strategies and protocols.

Title main entry. Ed. by Lucy G. Andrew and Trygve O. Tollefsbol. (Methods in molecular biology; 405)

Humana Press Inc., ©2007 193 p. \$95.50

Due in part to the selective nature of telomerase inhibition as an anticancer approach, this field has expanded considerably over the past decade. In this text, 30 international academics and researchers contribute 14 chapters providing researchers with a diverse and comprehensive set of tools with which to study telomerase inhibition. These include recently developed methods having widespread application, such as targeting the telomerase holoenzyme, its RNA template, and other elements associated with telomerase activity. Additional methods involving the screening of telomerase inhibitors and telomerase inhibition combined with other chemotherapeutic agents are also presented.

MICROBIOLOGY

QR82 2007-037155 978-0-375-42430-4

Microcosm; E. coli and the new science of life.

Zimmer, Carl.

Pantheon Books, ©2008 243 p. \$25.95

The bacteria *E. coli* is perhaps most popularly recognized as an agent of human disease,

but in fact most forms of *E. coli* are harmless and, even more significantly for the purposes of Zimmer (a science writer for *The New York Times*), the bacteria has been the subject of sustained study by scientists for over 100 years, making it an ideal window into the history of life. He gives the general reader a tour of the science of *E. coli*, describing its lessons for the nature of life, processes of evolution, and even modern genetic engineering.

QR84 2007-029416 978-0-8493-9214-6

Thermophiles; biology and technology at high temperatures.

Title main entry. Ed. by Frank Robb et al.

CRC / Taylor & Francis, ©2008 353 p. \$159.95

Tools like whole genome analysis and community sequencing have changed all areas of biology, but perhaps the study of thermophiles more radically than most, because scientists can now examine data in air conditioned offices instead of elusive microbes in really hot places, at least sometimes. Researchers from the US, Europe, and Japan discuss the molecular basis of thermostability, heat-stable enzymes and metabolism, the genetics of thermophiles, and minimal complexity model systems.

QR201 2007-941654 978-1-58829-740-2

Bacterial pathogenesis; methods and protocols.

Title main entry. Ed. by Frank R. DeLeo and Michael Otto. (Methods in molecular biology; 431)

Humana Press Inc., ©2008 311 p. \$99.50

Bacterial infections are a leading cause of death around the world, and this textbook, part of the *Methods in Molecular Biology Series* from Humana Press, focuses on the pathogenesis of the most common types. Edited by DeLeo (Rocky Mountain Laboratories) and Otto (National Institutes of Health), this book presents a variety of studies from leaders in microbiology, cell biology and related fields that examine the mechanisms of bacterial pathogenesis, and the relationships between the host and these pathogens. Case studies involving animal models are also discussed, along with therapeutic options commonly used to treat these deadly pathogens.

MEDICINE (GENERAL & PUBLIC ASPECTS)R853 2007-029936 978-1-58488-577-1
Computational methods in biomedical research.

Title main entry. Ed. by Ravindra Khattree and Dayanand Naik. (Biostatistics series; 24)
Chapman & Hall/CRC, ©2008 408 p. \$99.95
Written by active researchers in the field, this work explores current and emerging computational statistical methods used in biomedical research. It introduces each topic at a basic level, before moving on to more advanced discussion of applications. The book begins with microarray data analysis, machine learning techniques, and mass-spectrometry-based protein profiling. It then uses state space models to predict US cancer mortality rates and provides an overview of the application of multistate models in analyzing multiple failure times. Also described are various Bayesian techniques, the sequential monitoring of randomization tests, mixed-effects models, and the classification rules for repeated measures data. The book concludes with estimation methods for analyzing longitudinal data. A few color figures are included. The book will be useful for those involved in advanced biomedical and pharmaceutical research, including biostatisticians, medical researchers, pharmaceutical scientists, and reviewers in regulatory agencies. Khattree is affiliated with Oakland University. Naik is affiliated with Old Dominion University.

R859 2007-018568 978-0-06-137336-7
Dr. Weinberg's guide to the best health resources on the Web.

Weinberg, Harlan R.
Harper Collins Publishers, ©2008 275 p. \$14.95 (pa)

To simplify Internet medical topic searches, Dr. Weinberg (Northern Westchester Hospital, Mt. Kisco, New York) presents an annotated list of reliable general online health resources, collections by disease/topic, and even aerospace medicine resources. The guide lists academic and consumer sites ranging from AIDS/HIV to wound care, indicating whether they are free or require subscription. Patients are apt to be especially interested in sites on clinical trials and patients' rights.

PSYCHIATRYRC552 2007-030542 978-0-521-88422-8
Therapy after terror; 9/11, psychotherapists, and mental health.

Seeley, Karen M.
Cambridge U. Pr., ©2008 242 p. \$35.00
In the days immediately following 9/11 even those of us who watched from the other side of the country vividly recalled images and needed immediate answers to questions. Mental health professionals on the front lines in New York had to deal with the horror placed upon their own souls in the dust and ruin along with that of their clients. Practitioner Seely (anthropology, Columbia U; psychology, Barnard College) explains how the crisis affected those professionals who counseled the victims and were themselves victims. Basing her observations on interviews, she shows the remarkable variety of behaviors in the first minutes and days, the impact on those already in care, and the personal and professional consequences for therapists. She includes commentary on the political dimension of mental health practices and the increasing medicalization of the mental health system.

PLANT CULTURE, FORESTRYSD387 2007-045097 978-1-4200-5341-8
Hyperspectral remote sensing of tropical and sub-tropical forests. (CD-ROM included)

Title main entry. Ed. by Margaret Kalacska and G. Arturo Sanchez-Azofeifa.
CRC / Taylor & Francis, ©2008 320 p. \$129.95

Found useful in assessing ecosystem characteristics in temperate environments, hyperspectral sensors and data are coming to the tropics. This reference includes the basics but moves quickly on to describe applications and analysis techniques that have the potential to work well in complex tropical conditions. The 13 articles address how remote sensing relates to plant functional groups (in terms of physiology, ecology and spectroscopy), assessment of carbon dynamics and the biodiversity of forests, the affects of soil type and leaf characteristics, spectral expression of gender, species classification of tropical leaf reflectance, spectral data in the study of a *Sirex noctilio* attack on pine forests and on exposed wood and deciduous trees, using hyperspectral imagery to assess damage caused by logging, reflectance calibration of airborne hyperspectral spectrometer data, an assessment of phenologic variability, and remote sensing of canopy chemistry and

physiology as well as biodiversity in rain forests.

TECHNOLOGY (GENERAL)

T11 2007-006412 978-0-89503-337-6

Motives for metaphor in scientific and technical communication.

Giles, Timothy D. (Baywood's technical communications series)

Baywood Publishing Co., ©2008 178 p. \$44.95

Giles (technical communication, Georgia Southern U.) gives a thoughtful and scholarly presentation on the use of metaphor in scientific and technical disciplines. The author uses the current controversy over cloning as an example of why scientists should be aware of how they use metaphor to describe and explain science to the general public and how it can be useful in research. The book includes a historical examination of the use of metaphor and analogy in the research and explanations of discoveries by science icons such as Newton and Descartes. Topics also include re-introducing metaphor in technical communication classrooms and texts. The intended audience is professors and students of technical communication, technical communication professionals, and scientists and engineers.

T11 2007-532617 978-1-55111-814-7

A strategic guide to technical communication.

Graves, Heather and Roger Graves.

Broadview Press, ©2007 310 p. \$36.95 (pa)

Serving as an introduction to the field, this textbook includes step-by-step instructions on how to approach technical writing, and how to implement graphics and data seamlessly into the presentation. From designing proper layouts to researching technical subjects and analyzing pertinent data, Heather Graves and Roger Graves have created a perfect example of what they teach, providing a comprehensive, concise and easy-to-read book that catches the eye and delivers useful information on every page. The two authors have written extensively about teaching writing, and Roger is affiliated with the the department of writing and technical and professional communication at the U. of Western Ontario, Canada.

T36 2008-006300 978-0-7844-0920-6

Becoming leaders; a practical handbook for women in engineering, science, and technology.

Williams, F. Mary. and Carolyn J. Emerson.

Am. Society of Civil Engineers, ©2008 199 p. \$29.00 (pa)

Williams, the Director of Canada's Institute for Ocean Technology, and distinguished consultant Emerson go far beyond the usual heap of tips about getting along with the boys and concentrate instead on developing communication and leadership skills women can take with them on their way up. They cover strategies for undergraduate and graduate students, job hunting, career development, personal networks and mentors, work-life balance, family support, time management, media appearances, tenure strategies, public service, sexual harassment, organizations, commonly asked questions and sample answers, and promotion of women's participation. Their strategies could also work well of women academics and professionals not in engineering, science or technology.

T56 978-0-9802858-6-4

The principles of project management.

Williams, Meri.

SitePoint, ©2008 204 p. \$39.95 (pa)

Williams, a manager, offers a simple and easy to understand guide to project management that explains what it is, its stages, planning, communication, and finishing the project. She uses many examples from the technology industry, but the book is meant for managers in any field.

T58 2007-036858 978-1-59904-567-2

Information systems engineering; from data analysis to process networks.

Title main entry. Ed. by Paul Johannesson and Eva Söderström.

IGI Publishing, ©2008 369 p. \$99.95

This work bridges the gap between research and practice by providing a reference point on the design of software systems that evolve seamlessly to adapt to rapidly changing business and organizational practices. It explores the foundation, history, and theory of enterprise modeling and information systems engineering, and presents recent research results and experiences from applications in industry. Intention-driven conceptual modeling, modeling early requirements, interconnecting e-business model components, and translating schemas between data modeling languages are some areas addressed. The audience for the book includes scholars, researchers, and practitioners. Johannesson is affiliated with the Royal Institute

of Technology, Sweden. Söderström is affiliated with the University of Skövde, Sweden.

T385 978-1-934356-03-6

Augmented reality; a practical guide.

Cawood, Stephen and Mark Fiala. (Pragmatic programmers)

Pragmatic Bookshelf, ©2007 311 p. \$34.95 (pa)

Technical writer and speaker Cawood, and computer vision researcher and industrial engineer Fiala, both Canadian, describe techniques to create a kind of twilight world that incorporates elements of physical reality and virtual reality to make virtual objects seem present in the real world. The approach commonly involves augmenting objects of two or three dimensions to a real-time digital video image. The code they present will run on Windows, MacOS or Linux. Distributed in the US by O'Reilly Media.

T385 2008-008486 978-0-470-26058-6

AutoCAD 2009 and autoCAD LT 2009; no experience required.

McFarland, Jon.

Sybex, Inc., ©2008 818 p. \$34.99 (pa)

This introduction to AutoCAD software applications is designed to serve both novices and experts, allowing the reader to jump in at any point and take advantage of the drawing files by using the companion website. McFarland, who teaches AutoCAD, VIZ and 3ds Max courses at the university level, uses plenty of practical, step-by-step tutorials that employ plenty of graphics and sample screens, as opposed to technically-oriented text. This volume has been recently updated to reflect changes in the new AutoCAD 2009 and AutoCAD LT 2009 software packages.

T385 2007-027112 978-1-56881-306-6

Data visualization; principles and practice.

Telea, Alexandru.

AK Peters Ltd., ©2008 502 p. \$64.00

For advanced undergraduate or early graduate students of computer science, mathematics, and engineering sciences, Telea introduces the principles of data visualization as it is practiced in such realms as signal theory, imaging, computer graphics, and statistics. They emphasize techniques and methods with broad applications, figuring users will discover specialized ones as needed. Color is used throughout.

ENGINEERING (GENERAL, CIVIL)

TA166 978-0-470-16570-6

Decision making in systems engineering and management.

Title main entry. Ed. by Gregory S. Parnell et al. (Wiley series in systems engineering and management)

Wiley-Interscience, ©2008 438 p. \$115.00

To fill a perceived gap in undergraduate texts for systems engineering courses, Parnell and fellow systems engineers at the United States Military Academy at West Point present a multidisciplinary framework for solving complex problems, for example, which next-generation radar system to choose. After introducing systems thinking, life cycle models, modeling and analysis, and life cycle costing, chapters treat systems engineering practices; a System Decision Process entailing the phases of problem definition, solution design, decision-making, and solution implementation; and the roles of systems engineers in current and future operating environments. Chapters include worked examples and exercises. The text may also be used as a supplement for graduate courses and reference for professionals in related fields.

TA168 2007-034222 978-1-4200-5491-0

Systems thinking; coping with 21st century problems.

Boardman, John and Brian Sauser. (Industrial innovation; 4)

CRC / Taylor & Francis, ©2008 185 p. \$89.95

Linear thinking has gotten us pretty far, but it limits our ability to deal with large and complex data sets, such as those associated with multinational development of the creation of advanced technologies. Boardman and Sauser (both Stevens Institute of Technology) apply their diverse educational and industrial experiences from such parts as Texas and Liverpool to explain the systems approach to thinking, sure in the knowledge that it is the next big thing. They explain why the systems approach works in the case of large concepts as well as those that are relatively small, give readers a strong foundation in basic concepts, and address applying engineering concepts to the art of cognition, understanding the dynamics of the systems approach, applying "soft" skills, building a method and a team approach, using essential characteristics wisely, coping with paradox, and celebrating complexity. The result is rigorous yet eminently accessible.

TA345 2007-061804 978-0-89871-638-2

Linear feedback control; analysis and design with MATLAB.

Xue, Dingyü et al. (Advances in design and control)

SIAM, ©2007 354 p. \$99.00 (pa)

Designed as a professional resource but also suitable for classroom use and self-study, this text reduces the mathematics to working examples that bridge the gap between theory and applications. Xue (control engineering, Northeastern U., Shenyang, China) and his academic colleagues describe analysis and design techniques for linear feedback control systems entirely within the context of the math software, starting by introducing feedback control methods and giving mathematical models of feedback control systems. With examples and exercises they describe how to analyze linear control systems and perform simulation analyses of nonlinear systems, show how to accomplish model-based controller design and proportional integral derivative controller design, develop robust control systems design and begin on projects with fractional-order controllers. In an appendix they present a feedback control system and analysis tool.

TA355 2007-026360 978-1-4200-5178-0

Friction-induced vibrations and sound; principles and applications.

Sheng, Gang.

CRC / Taylor & Francis, ©2008 408 p. \$149.95

For many engineers and industrial designers, friction-induced vibration is much more than annoyance; it can cause significant problems with the reliability and quality of mechanical components. Here practitioner and researcher Sheng provides recent advances from a range of industries in an imminently applicable and unified theological framework that he focuses on real-world engineering situations. He starts with the basics of vibrations and sound, including linear and nonlinear vibrations, random vibrations and the fundamentals of sound. He then introduces the concepts behind contact and friction, including that on the nano and molecular scales, and thoroughly covers the effects of friction-induced vibration and sound, including that found in social life and nature. He applies these concepts to specific applications in hard disk drive systems, power transmission belts, and vehicle brake systems. The result is a very handy professional reference as well as a student text.

TA403 2007-033398 978-0-471-74004-9

Inorganic materials synthesis and fabrication.

Title main entry. Ed. by John N. Lalena et al.

Wiley-Interscience, ©2008 303 p. \$100.00

Incorporating both background and information on advanced technologies, Lalena (chemistry, University of Maryland University College-Europe) covers the most important techniques in solid-state synthesis and materials fabrication in this reference on the preparation of single-phase inorganic materials. Offering an interdisciplinary approach, the book explains basic principles of crystallography, thermodynamics, and kinetics, explores crystallographic and microstructural considerations, and discusses the chemical energetics and atomistics of reactions and transformations in solids. Other areas covered include nanomaterials synthesis, and aspects of materials fabrication such as texture control, forming processes, and consolidation methods. The book also presents biographical sketches of distinguished materials scientists of the 20th century. It will be useful as a text and reference for students and professionals in materials science, engineering, chemistry, and physics.

TA409 2007-038845 978-0-8493-8432-5

Fundamentals of fracture mechanics.

Kundu, Tribikram.

CRC / Taylor & Francis, ©2008 286 p. \$89.95

Engineering students will find this a comprehensive and progressive study of the elementary principles of fracture mechanics, beginning with a review of the fundamentals of continuum mechanics and the theory of elasticity as it applies to fracture mechanics. With a wealth of references to practical applications, Kundu (civil engineering and engineering mechanics, U. of Arizona) explains the elastic crack model, energy balance, the effect of plasticity, the J-integral, fatigue crack growth, stress intensity factors for some practical crack geometries, numerical analysis, the Westergaard stress function and advanced topics such as stress irregularities at crack corners, fracture toughness and the strength of brittle matrix composites, and dynamic effects. Kundu includes references and exercises with each chapter. The result is useful for personal reference and self-study as well as classroom use.

TA418 2007-029214 978-1-60021-824-8

Fullerene research advances.

Title main entry. Ed. by Carl N. Kramer.

Nova Science Publishers, ©2007 305 p. \$129.00

This work presents research on carbon 60, the fullerene molecule. Subjects include photodynamic therapy with fullerenes, mass spectrometric research of polymer-fullerene composites, and identification features for the free radical adducts of organometallic fullerene derivatives. Other subjects examined include dumbbell-shaped bisfullerene and conjugated oligomer hybrids, superelastic materials for tribological applications, ultraviolet light-filtering properties of fullerene materials, polymerization in the presence of carbonaceous nanoparticles, and fullerenes under pressure, adsorption, selective adsorption, and engineered adsorption.

TA418 2007-031507 978-0-8031-4269-5

Guide to friction, wear and erosion testing.

Budinski, Kenneth G. (ASTM stock number; MNL56)

ASTM International, ©2007 132 p. \$77.00 (pa)

Budinski, chairman of ASTM Subcommittee G02.50 on Friction, reviews current friction, wear, erosion, and lubrication fundamentals, and describes the bench tests that are most often used to study and solve tribology problems. Tests are compared and critiqued. Information is presented to help the reader select a test that he or she might use to address a tribology concern. The scope of the book includes tests that are used to study engineering materials, tests used to solve tribology problems, and limited product tribotesting. The tests described are predominantly standard tests developed by consensus through ASTM International. The intended readership includes students, designers, maintenance personnel, researchers, and academicians. Veteran tribologists will find the guide useful as a reference for ASTM test numbers and test details. B&w photos are included.

TA418 2007-019886 978-0-470-06740-6

The physics and chemistry of nanosolids.

Owens, Frank J. and Charles P. Poole.

Wiley-Interscience, ©2008 539 p. \$85.00

Owens (physics, Hunter College, City U. of New York) and Poole (physics and astronomy emeritus, U. of South Carolina) have revamped their *Introduction to Nanotechnology* of 2003 to update their material and make it more accessible to advanced undergraduate and

graduate students. They assume readers have only an introductory understanding of the physics and chemistry of macroscopic solids and models developed to explain properties, starting with the basics on the physics of bulk solids. They carefully explain methods of measuring properties of nanostructures, including spectroscopy, properties of individual nanoparticles, the chemistry of nanostructures, characteristics of polymer and biological nanostructures, cohesive energy, vibration and electronic properties, quantum wells (as well as wires and dots), carbon nanostructures, bulk nanostructured materials, mechanical properties, magnetism, nanoelectronics, spintronics, molecular electronics and photonics. Their attention to proper pedagogy throughout pays off in their range of excellent exercises.

TA418 978-3-527-31836-0

Organic nanostructures.

Title main entry. Ed. by Jerry L. Atwood and Jonathan W. Steed.

Wiley-VCH, ©2008 352 p. \$200.00

"One of the great opening frontiers in molecular sciences," declare Atwood (chemistry, U. of Missouri at Columbia, US) and Steed (inorganic chemistry, Durham U., UK), "is the upward synthesis, understanding of structure and application of molecules and molecular concepts into the nanoscale." They present 14 papers from contributors judged to be leading experts working on the cutting edge of this revolution on the nanoscale, each of which is intended a self-contained illustration of the way the nanoscale is influencing current theory and research across the molecular sciences. Specific topics include artificial photochemical devices and machines, rotaxanes as ligands for molecular machines and metal-organic frameworks, strategic anion templation for the assembly of interlocked structures, synthetic nanotubes from calixarenes, supramolecular architecture based on organometallic half-sandwich complexes, endochemistry of self-assembled hollow spherical cages, polynuclear coordination stages, from structure to function for polyoxometalate nanocapsules, nanocapsules assembled by the hydrophobic effect, opportunities in nanotechnology via organic solid-state reactivity, and organic nanocapsules.

TA658 2007-035134 978-0-8493-8532-2

Smart structures; innovative systems for seismic response control.

Cheng, Franklin Y. et al.

CRC Press, ©2008 652 p. \$129.95

This book consolidates results from a number of research projects carried out at the University of Missouri-Rolla, providing researchers, engineers, and advanced students with a self-study reference on designing more resilient structures. The book concentrates on structural formulations, mechanisms of control systems, and numerical algorithms. It also provides step-by-step numerical examples to illustrate mathematical formulations and interpret physical representations. After a chapter on basic concepts of smart structure systems, chapters cover base isolation systems, damping systems, smart seismic structures using active, semi-active, and hybrid control systems, sensing and data acquisition systems, optimal device placement for smart seismic structures, and active and hybrid control on shallow and embedded foundations. Appendices cover MATLAB, Green's function, and element stiffness and mass coefficients. Cheng is affiliated with the University of Missouri-Rolla.

TA710 2007-532012 978-0-7277-3486-0

Risk and variability in geotechnical engineering.

Title main entry. Ed. by M.A. Hicks.

Am. Society of Civil Engineers, ©2007 225 p. \$125.00

This work presents techniques for characterizing, quantifying, and modeling geomaterial variability, and describes methods for quantifying the influence of this variability on the performance of geotechnical structures. It includes refereed journal papers by leading international researchers along with written and informal discussions on a selection of key submissions that were presented at a May 2005 symposium held at the Institute of Civil Engineers. There is also an additional paper that was published in the journal *Géotechnique* in August 2005. The papers consist of both theoretical and practical guidance, and include case histories and discussion of applications in foundations, retaining structures, slopes, and soil-structure interaction. Hicks is head of geotechnical engineering at the University of Manchester.

TA1520 978-0-8493-3762-8

Photonic signal processing; techniques and applications.

Binh, Le Nguyen. (Optical science and engineering; v.130)

CRC / Taylor & Francis, ©2008 359 p. \$119.95

According to the author (director, Center for Telecommunications and Information Engineering, Monash U., Australia), photonic signal processing has the potential to overcome the electronic limits for processing ultra-wideband signals and also provides signal conditioning that can be integrated in-line with fiber optic systems. He wrote this book to address the emerging techniques of processing and manipulating of signals propagating in an optical domain. Over the course of six chapters he provides an introduction to the photonic components essential for photonic processing systems, discusses the representation of photonic circuits using signal-flow graph techniques, describes photonic signal processors such as differentiators and integrators, examines applications in the generation of solitons and in optically amplified fiber transmission systems, illustrates the compensation of dispersion using photonic processors, and explains the design of optical filters using photonic processing techniques.

TA1540 2007-022429 978-0-470-06806-9

Holographic imaging.

Benton, Stephen A. and V. Michael Bove.

Wiley-Interscience, ©2008 261 p. \$100.00

The late Benton (MIT) discusses the principals of holographic imaging in numerous applications including rainbow holography, off-axis reflection holography, video, and computer-generated stereogram holography. The concise, thoughtful chapters are supported by simple illustrations and text is appropriate for advanced undergraduates in engineering and above.

TA1815 2007-049892 978-1-4200-5365-4

Fiber optic sensors, 2d ed.

Title main entry. Ed. by Shizhuo Yin et al. (Optical science and engineering)

CRC / Taylor & Francis, ©2008 477 p. \$159.95

The second edition of this textbook on the latest technology in fiber optic sensors has been expanded to include new research, such as the application of photonic crystal fibers to fiber optic gyroscopes and the use of fiber optic sensors in minimally invasive medical procedures. Yin and Yu (Pennsylvania State U.) have co-edited this collection of fiber optic sensor development with Ruffin, who works with the United States Army in engineering research and

development. Together they present contributions from all over the world which present highly technical applications for the aerospace, defense, oil and medical industry, as well as instruction for advanced engineering students.

ENVIRONMENTAL TECHNOLOGY

TD246 978-1-84339-137-1

Risk management for water and wastewater utilities.

Pollard, Simon J.T. (water and wastewater process technologies series)

IWA Publishing, ©2007 159 p. \$140.00 (pa)

This volume, which is meant for individual study, details a risk-based chemical engineering approach to water utility management that uses an understanding of processes as a starting point. The focus is on techniques for risk-based decision making within a modern operational and regulatory context. Pollard (sustainable systems, Cranfield U., UK) covers first environmental then organizational aspects, with sections on basic probability and statistics, process risk and those beyond the unit process boundary, reliability analysis, regulation, business risk management, and managing opportunities, reputation, and emergencies. There is no index. US distribution by BookMasters.

BUILDING CONSTRUCTION

TH453 2007-039329 978-0-470-13062-9

Sustainable design; the science of sustainability and green engineering.

Vallero, Daniel and Chris Brasier.

John Wiley & Sons, ©2008 332 p. \$80.00

Vallero and Braiser (Duke U.) examine green engineering concepts by focusing on the scientific principles that facilitate the need for sustainable design in architecture, civil engineering and other applications. The authors supply case studies based upon their own experiences in the field, as well as the Duke University Smart House Program that provided the motivation for this book. This is a useful textbook for any civil engineering or architectural student interested in green engineering.

MECHANICAL ENGINEERING & MACHINERY

TJ163 2007-026041 978-0-19-920996-5

Energy...beyond oil.

Title main entry. Ed. by Fraser Armstrong et al.

Oxford U. Press, ©2007 229 p. \$49.50

Armstrong (chemistry, Oxford U., UK) and Blundell (physics, Oxford U.) present a non-

technical survey of the technological options for addressing the world's looming energy crisis, which combines declining oil resources and increasing global temperatures. Primarily penned by scientists in the respective fields covered, the volume offers chapters on geothermal energy, wave and tidal power, wind energy, nuclear fission, fusion energy, photovoltaic and photoelectrochemical conversion of solar energy, biological solar energy, sustainable hydrogen energy, fuel cells, and energy efficiency in the design of buildings. Also included is a chapter on the politics and governance of energy transition.

TJ265 2006-004477 1-60021-034-1

Thermodynamics and heat powered cycles; a cognitive engineering approach.

Wu, Chih.

Nova Science Publishers, ©2007 659 p. \$89.00

Covering both theory and practice of thermodynamics, this text is designed for an engineering course integrating the software CyclePad (developed by Kenneth Forbus of Northwestern University), which allows systems to be analyzed and designed in a simulated, interactive, computer-aided design environment. The software reminds students of essential principles and design steps as they go through the design process, explains results, and provides case studies of how engineers have resolved similar problems in real-life situations. Emphasis throughout is on applications of theory to actual processes and power cycles. Chapter summaries, worked examples, and homework problems are included, using both SI and English units. The book can be used for undergraduate degree courses in all types of engineering, as well as in engineering science and courses in combined studies in which thermodynamics and related topics are covered. Wu is affiliated with the US Naval Academy and Johns Hopkins University.

TJ265 2007-282018 978-0-521-86811-2

Computational thermodynamics; the Calphad method.

Lukas, Hans Leo, et al.

Cambridge U. Pr., ©2007 313 p. \$85.00

Lukas (U. Stuttgart emeritus) and co-authors Sundman (Paul Sabatier U.) and independent scientist Fries provide the first introductory guide to this method of computation that combines data from thermodynamics, phase diagrams, and atomistic properties such as magnetism into a unified and consistent model. They introduce the science and art of computational thermodynamics

and the past and present of the Calphad technique, the scientific basis of the technique (including thermodynamics, crystallography, equilibrium calculations and optimization methods), first principles and thermodynamic properties, experimental data needed for optimization, models for the Gibbs energy element, assessment methodology, optimization tools, and thermodynamic databases. They also offer a series of case studies, including a complete assessment of the Cu-Mg system and a complete binary system (Ca-Ng) and provide a list of websites along with comprehensive references.

TJ808 2007-039832 978-1-55591-626-8

Power of the people; America's new electricity choices.

Tombari, Carol Sue. (Speaker's corner books)

Fulcrum Publishing, ©2008 195 p. \$14.95

The electricity infrastructure of the US is aging and based far too much on generating electricity with nonrenewable resources, according to Tombari (National Renewable Energy Laboratory, US Department of Energy), but the good news is that alternative technologies that are both more efficient and better for the environment are already here. In this work she puts forth an argument for why we should be concerned with the situation and provides a general audience with a tour of the technologies to which we should transition: energy efficiency, solar, wind, geothermal, biomass, and (eventually) hydrogen fuel cells.

TJ1075 2007-034662 978-0-19-852678-0

Tribology on the small scale; a bottom up approach to friction, lubrication, and wear.

Mate, C. Mathew. (Mesoscopic physics and nanotechnology; no.6)

Oxford U. Press, ©2008 333 p. \$110.00

This book explains how tribological phenomena—friction, lubrication, and wear—originate from atomistic and microscale physical phenomena, and shows how this understanding can be used to solve macroscale tribology problems. Chapters cover the microscopic origins of the macroscopic concepts commonly used to describe tribological phenomena (such as roughness, elasticity, plasticity, friction coefficients, and wear coefficients). There are also chapters on topics not usually covered in tribology texts but which become important at the small scale, such as capillary condensation, disjoining pressure, contact electrification, and molecular slippage at interfaces. The book is intended to serve both as a textbook for

advanced undergraduate and graduate courses in tribology in engineering programs, and as an introduction to the field for scientists and engineers working with technologies where a good grasp of tribology is essential. Mate is affiliated with the Hitachi San Jose Research Center.

**ELECTRICAL ENGINEERING,
ELECTRONICS**

TK454 2008-006387 978-0-470-05536-6

Electromagnetic shielding.

Celozzi, Salvatore et al. (Wiley series in microwave and optical engineering)

Wiley-Interscience, ©2008 358 p. \$85.00

Scientists specializing in electromagnetism Celozzi, Rudolfo Araneo, and Gimpiero Lovat (all: U. of Rome La Sapienza) offer engineers and other researchers a brief introduction to the full range of considerations in shielding an electromagnetic field to keep it from interfering with devices and functions close by. The aspects they discuss include shielding materials, numerical methods for shielding analysis, enclosures, frequency selective surfaces, and uncommon ways of shielding. One of the appendices sets out the standard standards and measuring methods for them.

TK1001 978-1-60021-921-4

Techniques of scientific computing for energy and the environment.

Title main entry. Ed. by Frédéric Magoulés and Riad Benelmir.

Nova Science Publishers, ©2007 102 p. \$79.00

Computational scientists in civil engineering and other fields describe five techniques by which researchers can investigate problems of energy and the environment without leaving their computer terminal. They include using flow velocity to analyze the stability of an abnormal multiplication of plankton, large-scale data visualization using multi-language programming to address environmental problems, and analyzing flow around a propeller using fictitious domain finite element method. Color illustrations are abundant.

TK2921 978-0-87849-477-4

Lithium iron phosphate; a promising cathode-active material for lithium secondary batteries.

Cheruvally, Gouri.

Trans Tech Publications, ©2008 126 p. \$97.00 (pa)

Nickel-cadmium and nickel-metalhydride batteries have largely become obsolete,

especially in portable electronic devices. Taking their place are lighter, more efficient lithium batteries, which are still in development to improve their performance and safety at lower cost. Here Cheruvally (chemistry, Vikram Sarabhai Space Center, India) reviews research on developing lithium iron phosphates as positive electrode materials that have the potential to replace transition metal oxides. She gives basic information on batteries as electrochemical energy sources, then describes lithium iron phosphate as a cathode material and presents nearly a dozen different methods of synthesizing it for experimentation or production. She describes the influence of synthesis parameters on the properties of lithium iron phosphates, the synthesis and properties of metal ion-doped lithium iron phosphate, the influence of different parameters (including cell components and operating temperature) on the cathode, safety and storage issues, theoretical and modeling studies, and phosphate olivines as cathode-active materials.

TK5101 2007-018943 978-0-470-82245-6
Communications engineering; essentials for computer scientists and electrical engineers.

Title main entry. Ed. by R.C.T. Lee et al.

John Wiley & Sons, ©2007 260 p. \$80.00
 Computer scientist Lee (National Chi Nan U., Taiwan) and electrical engineers Mao-Chung Chiu (National Chung Cheng U., Taiwan) and Jung-Shan Lin (National Chi Nan U.) offer advanced undergraduate students in the two fields a textbook introducing the fundamental and critical concepts of communications technologies. Though discussing digital technologies, they return attention to analog signals, reminding students that digital signals are also analog. Topics include Fourier representations of signals, multiple-access communications, and source coding and channel coding.

TK5102 2007-029554 978-1-4200-5474-3
Continuous signals and systems with MATLAB, 2d ed.

Title main entry. Ed. by Taan S. ElAli and Mohammad A. Karim.

CRC / Taylor & Francis, ©2008 504 p. \$99.95

ElAli (electrical engineering, Benedict College) and Karim (Old Dominion University) present broad yet detailed coverage of continuous linear systems, based on basic mathematical principles, in this text for a one-semester course for undergraduate junior and senior

electrical, mechanical, aeronautical, and aerospace engineering students. The book concentrates on explaining the subject matter with easy-to-follow mathematical development and numerous solved examples from various engineering disciplines, with most of the worked examples first solved analytically and then solved using three different forms of numerical solutions with MATLAB. It covers traditional topics and includes chapters on analog filter design, state-space representation, block diagrams, and linearization of nonlinear systems. While no previous experience with MATLAB is assumed, familiarity with calculus, differential equations, and basic dynamics is desirable.

TK5105 978-1-59059-874-0

Accelerated VB 2008.

Fouché, Guy and Trey Nash.

Apress, ©2008 441 p. \$39.99 (pa)

Intended for experienced object-oriented developers, this guide explains the differences between Visual Basic 2008, C# 3.0, and Visual Basic 6.0, and dives into VB 2008 syntax for declaring classes, methods, types, variables, arrays, interfaces, delegates, and generics. The final two chapters suggest best design practices for defining new types, and introduce the new language-integrated query (LINQ) for standardizing data manipulation across different data sources.

TK6575 978-1-59693-242-5

Modern radar systems, 2d ed.

Meikle, Hamish. (Artech House radar library)

Artech House, ©2008 701 p. \$159.00

This is the new edition of a 2001 text introducing the theory and components of radar systems, particularly radar on the ground that detects moving aircraft. Extensively revised and updated, coverage includes description of the function of transmitters, antennae, receivers, matched filters, and signal processors. In addition to amplitude and phase graphs, three-dimensional space curves are shown, which emphasize the vector relationships involved. The author notes the importance of low attenuation and reflection between main radio frequency blocks, including the use of oversized waveguides for long runs. The closing chapters review the relevant mathematics of statistics and transforms. An appendix provides tapering functions.

TK7868 2007-032778 0-88173-540-X
Electronic digital system fundamentals.

Patrick, Dale R. et al.

Fairmont Press, ©2008 340 p. \$98.00

Designed as a self-study guide suitable for professionals but also useful to students and hobbyists, this covers applications as well as theory. The authors (all engineering, Eastern Kentucky U.) make good use of examples as they give step-by-step procedures explaining the workings of both theories and a range of electronic devices. They cover digital logic gates, Boolean algebra and logic gates, combinational logic gates, number systems, conversions, codes, binary addition and subtraction, digital timing and signals, sequential logic gates, counters and shift registers, data conversion, and advanced digital concepts. They include a review guide of the key points for each chapter, material on electrical and electronic safety, data sheets and advice on constructing digital circuits. Distributed by Taylor & Francis.

TK7871 2007-030347 978-1-4200-6694-4
Circuits and applications using silicon heterostructure devices.

Title main entry. Ed. by John D. Cressler.

CRC / Taylor & Francis, ©2008 -- p. \$69.95

Cressler (electrical and computer engineering, Georgia Tech) examines SiGe circuit applications in emerging communications systems. A novel aspect of the book is that it also contains snapshot views of the industrial state of the art, both for devices and circuits, designed to provide the reader with a useful basis of comparison for the current status and future course of the global Si heterostructure industry. The book is intended as a reference for practicing engineers and scientists working on various aspects of Si heterostructure integrated circuit technology, and as a research resource for graduate students in electrical and computer engineering, physics, or materials science who require information on integrated circuit technologies. It can also be used as a graduate-level text, and as a reference for technical managers and even technical support and technical sales personnel in the semiconductor industry. It is assumed that the reader has some background in semiconductor physics and semiconductor devices at the advanced undergraduate level.

TK7871 2007-030748 978-1-4200-6690-6
Silicon heterostructure devices.

Title main entry. Ed. by John D. Cressler.

CRC / Taylor & Francis, ©2008 -- p. \$89.95

The emergence of transistors that combine silicon-germanium with pure silicon has lit the fuse of the miraculous communications explosion of the 21st century, according to electrical and computer engineer Cressler. With help from colleagues, he presents a graduate textbook that can also serve as an introduction and reference for practicing engineers and scientists and for technical managers, sales personnel, and others in the semiconductor industry.

TK7872 978-0-87849-479-8

Maxwell stresses and dielectric materials.

Kloos, Gerhard. (Material sciences foundation; v.39)

Trans Tech Publications, ©2008 105 p. \$97.00 (pa)

Kloos, a physicist working in industry, takes a close look at specific electronic stresses while considering materials science, continuum mechanics and electrical engineering points of view. Although he limits coverage of the treatment of electrostatic Maxwell stresses to a macroscopic description, he also provides sufficient information so readers can deal with cases of low material symmetry as well as with the influence of viscoelasticity on the material response. He begins by describing Taylor expansion and interaction diagrams, electrostatic Maxwell stresses and quadratic electrostriction, then turns to derivation of the stress tensor from the force law, Maxwell stress tensors, Maxwell stress tensors at the boundary of a dielectric medium with another dielectric medium or with air, applications, including a viscoelastic case study in application to polymers, closing with an analogous phenomenon, magnetostatic Maxwell stresses.

TK7874 2008-003602 978-0-8493-3133-6

Introduction to spintronics.

Bandyopadhyay, Supriyo and Marc Cahay.

CRC / Taylor & Francis, ©2008 515 p. \$89.95

Spin can be used to replace or augment the role of charge in signal processing, computing, and circuits. This book presents the quantum mechanical concept of spin, covering the principles and equations underlying the physics, transport, and dynamics of spin in solid state systems. It explains the use of spin for encoding qubits in quantum logic processors as the basis for certain spin-based devices such as spintronic

field effect transistors. The book also discusses the effects of magnetic fields on spin-based device performance, highlighting effects such as giant magnetoresistance. A final chapter introduces emerging areas such as spin-based reversible logic gates. Chapter examples and problems are included. Readers are assumed to have background in basic device physics and quantum mechanics. Bandyopadhyay is affiliated with Virginia Commonwealth University. Cahay is affiliated with the University of Cincinnati.

TK7874 2007-023227 978-0-470-10528-3

Multiscale simulation methods for nanomaterials.

Title main entry. Ed. by Richard B. Ross and Sanat S. Mohanty.

Wiley-Interscience, ©2008 275 p. \$125.00
Large Scale Molecular Dynamics, Nanoscale, and Mesoscale Modeling and Simulation: Bridging the Gap was the name of a National American Chemical Society symposium held in the fall of 2005 in Washington DC. Of the 40 presentations, 14 were selected as a broad representation of scaling methods, and have been expanded into the articles here. Chemists and related scientists discuss such matters as optimizing the electronic properties of carbon nanotubes using amphoteric doping, mesoscale simulations of surface-modified nanospheres in solvents, and modeling the thermal decomposition of large molecules and nanostructures.

TK7875 2007-037324 978-0-470-01699-2

Scaling issues and design of MEMS.

Baglio, Salvatore et al.

John Wiley & Sons, ©2007 229 p. \$130.00
In this text for graduate students and professionals in electrical engineering, Baglio and coauthors (all: U. of Catania, Italy) explain methodology for the scaling and design of autonomous microelectromechanical systems (MEMS). Examples are abundant in discussion of: temperature microsensors based on an integrated CMOS thermocouple, mechanical sensors, inductive microsensors for the detection of magnetic particles, scaling of energy sources, technologies and architectures for autonomous MEMS robots, and issues in moving towards the nanoscale, among other topics.

TK7882 2007-278601 978-1-59031-749-5

The practitioner's guide to biometrics.

Title main entry. Ed. by William Sloan Coats et al.

American Bar Association, ©2007 224 p. \$99.95 (pa)

In theory, biometrics is the measurement of any characteristic of an organism that can be

quantified, but since the inauguration of The Global War On Terror, it usually refers to a system of identifying people using fingerprints or eye scans. Lawyers and other contributors explore some of the legal implications of its increasing use. Their topics include rethinking data protection regimes to enable global tracking and prosecution of terrorists, national identification cards, theft of biometric data, trends and case studies in the private sector, and unintended consequences.

AERONAUTICS, ASTRONAUTICS

TL782 978-1-56347-929-8

Advanced propulsion systems and technologies, today to 2020.

Title main entry. Ed. by Claudio Bruno and Antonio G. Accettura. (Progress in astronautics and aeronautics)

Amer. Inst. of Aeronautics & Astronautics, ©2008 489 p. \$109.95

Editors Bruno (aerospace engineering, U. of Rome) and Accettura (business operations manager, Arianespace) and their roughly 20 co-contributors detail the state of propulsion technologies as they are expected to be by 2020. Commissioned by the European Space Agency, the book proceeds through the concept, associated technologies, and development status of each technology—with market and feasibility discussions when appropriate. The chapters are organized in a logical fashion and discuss existing work done on liquid rocket engines and then delve into future technologies and systems, such as superconductivity applied to electric propulsion, ion engines, solar sails, laser propulsion, and nuclear propulsion. Numerous graphs and illustrations support the text. The book will interest any professionals affiliated with the field of propulsion. While it contains a considerable amount of technical information and discussion, the text is clearly-written enough to interest general audience readers with an interest in aerospace technology.

TL1499 2007-024163 978-1-884989-18-6

Spacecraft collision probability.

Chan, F. Kenneth.

Aerospace Press, ©2008 325 p. \$79.95

Earth is surrounded by an orbiting junkyard. Keenly aware that it is getting crowded up there, researchers have tried to finesse various models for the short-term and long-term management of the relative trajectories of a variety of debris, but aerospace practitioner Chan carefully explains why such models do not, in essence, work. He describes how spacecraft are most likely to encounter each other, the characteristics of the encounter region, the particulars of

Rician distribution and the isotropic problem, analytic expressions as they should be done for short-term and long-term encounters, the probability of collisions with the International Space Station, maneuvers that may reduce risk of collisions, "formation flying," maximum probabilities of collisions, close encounters with multiple satellites, instantaneous probabilities of collision, spherical error probability computation, and available computer programs to study collisions and build better models that can be used in managing space junk.

CHEMICAL TECHNOLOGY

TP159 2007-047532 978-0-8155-1544-9

Microdroplets and digital microfluidics.

Berthier, Jean. (Micro & nano technologies)

William Andrew Publishing, ©2008 441 p. \$160.00

In this still-emerging science, microscopic liquid volumes are handled as microdroplets. Researcher Berthier (also mathematical physics, U. of Grenoble) systematically describes how microdroplets behave in complex geometries of modern miniaturized systems and interact with microfabricated, textured and other substrates. He begins by explaining how digital microfluidics fit within the discipline of microfluidics, basic theories of wetting, including surface tension and Laplace's Law, the physics of droplets, including their shape and performance moving in capillaries and on surfaces, electrowetting theory, including the three basic approaches and working range of related devices, microsystems using electrowetting theory, including biological and chemical applications, acoustic methods for manipulating droplets, droplet microfluidics and multiphase microflows. This is designed primarily as a professional resource but also works well as a course text.

TP184 2008-000605 978-1-934015-09-4

Programming for chemical engineers using C, C++, and MATLAB. (CD-ROM included)

Kapuno, Raul Raymond A.

Infinity Science Press, ©2008 449 p. \$69.95

With a wide range of examples direct from industry and complete program listings that can be run immediately by copying into a text editors, this emphasizes the practical but also gives readers a solid foundations in underlying theoretical concepts. Kapuno (chemical engineering and computer programming, Cebu Institute of Technology, the Philippines) carefully guides readers through numerical methods, testing the

algorithm through manual calculation, writing and debugging the algorithm, and validating the result through statistical analysis. He begins by reviewing C programming and numerical computation using C, physical properties in prediction and approximation, and applications using C, then provides an overview of C++ and MATLAB, moving on to MATLAB's functions for numerical computation and application, closing with information on interfacing MATLAB with C. This is designed for chemical engineering courses and also as a professional reference.

TP248 2007-032658 978-1-934015-16-2

Introduction to biotechnology and genetic engineering. (CD-ROM included)

Nair, A.J.

Infinity Science Press, ©2008 798 p. \$69.95

This book/CD-ROM text explains fundamental concepts and techniques of biotechnology in an a manner accessible to those with no background in biology. In addition to coverage of standards topics such as cell growth, genetic principles, and protein structures, the book discusses modern topics such as medical advances, quality control, stem cell technology, genetic manipulation, and bioethics. There is also a brief review of mathematics. Chapter review questions are included. The CD-ROM contains application software, demos, simulations, color figures from the text, and links to web sites. The book is appropriate for novices in biotechnology and genetics, and for engineering and biology students. Nair is an experienced researcher and teacher.

TP248 978-981-277-604-4

Introduction to biopolymer physics.

Van der Maarel, Johan R.C.

World Scientific, ©2008 247 p. \$38.00 (pa)

Van der Maarel (biophysics, National University of Singapore) introduces the physics of biopolymers. The book covers the structure, dynamics, and properties of biopolymers subjected to various forms of confinement, with special attention paid to the effect of charge and electrostatic screening. By focusing on the development of physical intuition rather than mathematical rigor, the book prepares readers to address complicated, real issues in the life sciences or related fields, such as material or food sciences. B&w and a few color illustrations are included. The book is designed to serve as a bridge between undergraduate textbooks in physical (bio)chemistry and the professional literature, and is especially suitable for advanced students and professionals who

have already acquired basic knowledge of physics, thermodynamics, and molecular biology.

UG447 2007-060561 978-0-8412-3964-7

Antiterrorism and homeland defense; polymers and materials.

Title main entry. Ed. by John G. Reynolds et al. (ACS symposium series; 980)

American Chemical Society, ©2007 273 p. \$145.00

The editors (of Lawrence Livermore National Laboratory and the Naval Surface Warfare Center) present 14 papers describing research efforts in developing new polymers and materials that can be used for detectors and decontaminators of chemical, biological, radiological, nuclear, and explosive threats. Following the overview, seven papers address chemical detection, including synthesis and spectroscopic characterization of molecularly imprinted polymer phosphonate

sensors, development of an enzyme-based photoluminescent porous silicon detector for chemical warfare agents, and optical enzyme-based sensors for reagentless detection of chemical analytes, among other topics. Biological detection is addressed in a pair of papers, which discuss a comparison of insulator-based dielectrophoretic devices for the monitoring and separation of waterborne pathogens, and design and synthesis of dendritic tethers for the immobilization of antibodies for the detection of class A bioterror pathogens. Finally, decontamination and protection are considered in papers on such topics as amphiphilic polymers with potent antibacterial activity, and catalysts for aerobic decontamination of chemical warfare agents under ambient conditions. Distributed in the US by Oxford U. Press.

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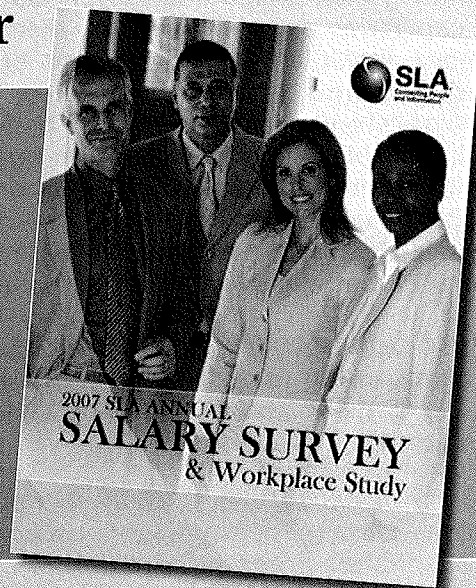
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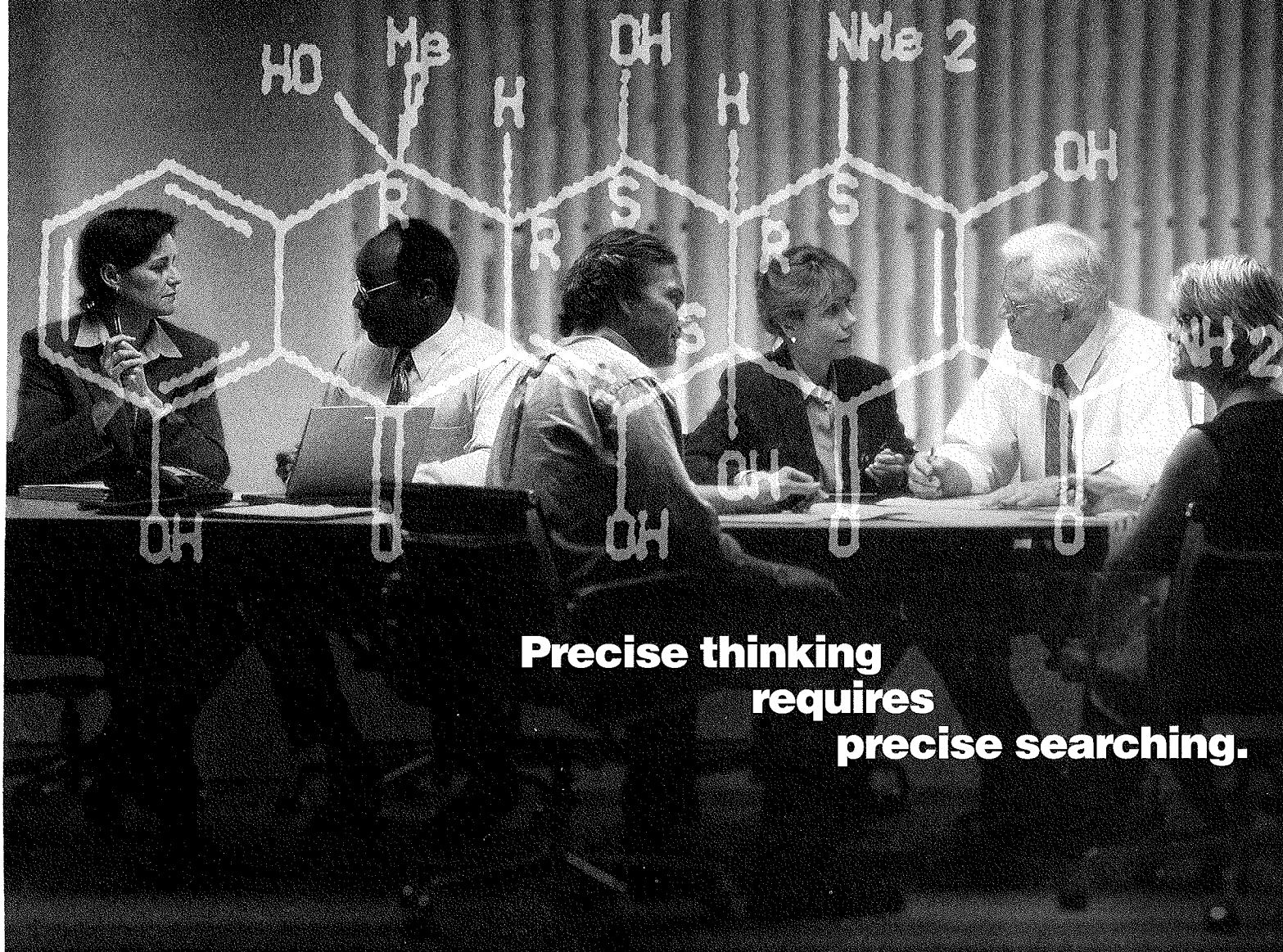
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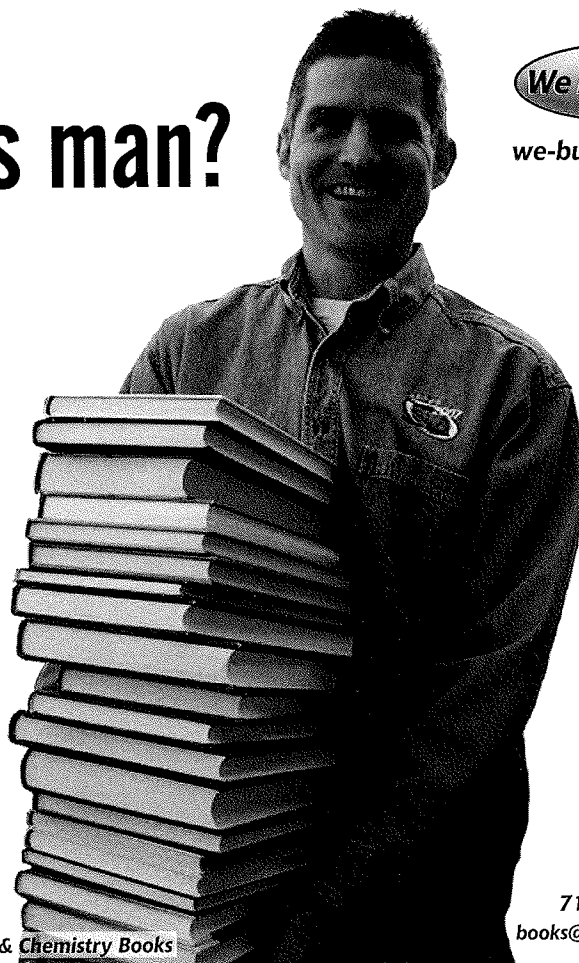


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