In this issue
Message from the Chair ........... 1
Vancouver, 2014
Education Program: Data Visualization .................. 4
SLA Hot Topic: The Agony and Ecstasy of Discovering More in Search .................. 4
Quick Take: Top 5 Tips for Developing Powerful LinkedIn Profiles .................. 6
Springer Lunch & Learn .................. 6
Choices Just Get Harder: Making Career Transitions When Money Is Not the Motive 7
The Search for Meaning and Semantics: Taxonomies Get It Done .................. 9
Science in the News: The Role of the Science Librarian in Introducing Medical Literacy Concepts to Undergraduate Students .................. 10
Impact of a Library Instruction on Bibliographies of Organic Chemistry Students .................. 10
Stepping Outside the Library: Solo Hospital Librarians As Clinical Librarians .................. 10
First SLA Conference Experience .................. 11
Disruption, Alignment, and Embedded Librarianship: Connecting the Dots, and Avoiding the Traps .................. 12
BioIT World 2014, April 29 - May 1, Boston MA. .................. 16
Federated Search Survey: How Searchable Are Your Online Resources? .................. 18
CapLits Revisited .................. 22
PHTD Discussion List Highlights – Fall 2014 .................. 25

Message from the Chair
Richard Campbell, Chair, PHTD 2014-2015

A View from Another Angle
Happy Fall, PHT Division! Those of you who have spent any time with me know that this is my absolute favorite time of year, with cooler weather arriving, football on Sundays, and hopefully year-end projects wrapping up successfully. This is not an ordinary autumn for me, though, and I’d like to share how a new perspective has provided me with an even greater appreciation of the information profession.

This past April I was presented with and accepted an opportunity to move into a very different role within my company. The new position is within the Clinical Trial Management team, heading up a new Business Management function. While the new position does involve a number of activities related to data gathering, assessment, technology, and analysis, it would be a stretch to call it management function. While the new position does involve a number of activities related to data gathering, assessment, technology, and analysis, it would be a stretch to call it an “information” position.

I love the challenge of my new job and the opportunity it provides to positively impact patient outcomes, but I now find myself a member of two categories that were previously foreign to me – 1) after 12 years, a new member of two categories that were previously foreign to me – 1) after 12 years, a new role within my company. The new position is within the Clinical Trial Management team, heading up a new Business Management function. While the new position does involve a number of activities related to data gathering, assessment, technology, and analysis, it would be a stretch to call it an “information” position.

I'd like to share how a new perspective has provided me with an even greater appreciation of the information profession.

The need for quality information is as prevalent and vital as we believe
It may seem obvious to us as information professionals, but I am happy to report from an objective perspective that there is a constant and critical need for information across the organizations we support. I see it every day in my new role, where colleagues are regularly challenged to drive projects that are heavily based on obtaining, understanding, and leveraging information and data. If I ever had any lingering doubts about the need for quality information support, they were quickly dispelled by my new “outsider” vantage point. Rest assured that your expertise is indeed a necessity.

The pressures your “customers” face are just as unreasonable as the timelines they ask of you
I have sometimes heard information professionals talking about how their stakeholders ask for unreasonable or unrealistic timelines for research and information projects. Those outside the profession just don’t understand how much is involved in completing a request. I may have even been guilty of that a time or two myself.

Now more removed from the receiving end of such requests, I can say that if you are facing unreasonable demands from your stakeholders it is because they are facing similar ones from theirs. Organizations move very quickly, and decisions need to be made and actions need to be taken. If your customer’s request seems unrealistic, remember that he or she may just be at the end of a chain of unrealistic requests. You may need to prioritize what you take on, but ultimately those requests are results of the pace of your organization, not a lack of patience, consideration, or understanding on your customers’ part.

“Chair” continued on page 3
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Since taking my new role, I have, of course, been regularly advocating that colleagues engage our information team in projects. The range of reactions to this advocacy has been very wide, from “Of course, I wouldn’t think of doing it without them” to “Can they really help with this” – with everything in between. So far, these differences have existed only before the engagement, though, as the response to the work delivered has been overwhelmingly positive. This reminds me that the work we information professionals have to do to ensure our visibility and our customers’ understanding of our skills and value is never-ending. We bring amazing value to our organizations, and it’s easy to assume that everyone understands that value and how to tap into it, but I can now see more clearly that doing so is at our own risk.

In closing, my relatively short time in an “alternative” career has helped me gain some new perspectives on our profession while also reinforcing my strong belief in the value of strong information skills. While it still feels a bit odd, I’m a very satisfied “customer.”
Data Visualization
Presenter: Marcy Phelps, President, Phelps Research

Introduction: “You’ve done all the research, synthesized the facts, and want to present the data in a format that makes it easy to understand at a glance. This session will help you to effectively combine information with graphic design — a critical skill as we become more involved with big data.”

The session had an overflow crowd of more than 150 people with some sitting on the floor as there was no space for additional chairs. Phelps is a consummate believer and advocate in transforming data (boring numbers and confusing tables) into readable, usable information in order to drive decisions in real time. Visualization thus must be more than just transforming data.” Tools mentioned by Nancy for effective visualization ranged from simple Excel to Tableau and BizInt and the more complex Pipeline Pilot and Spotfire. She defined data visualization as consisting of visual design and visual analysis steps. Marcy felt too many information professionals are focusing on data dump and too little on data analysis. Without having a full understanding of the client’s needs via a thorough reference interview, it would not be possible to conduct the data analysis which leads to data visualization. Her suggestion to information professionals is to strive to understand what kind of information can be derived from the data, and then determine the relationship of the information to the message one wants to present, finally selecting the right graphics to use.

She advocates creating a beginning-to-end process chart for the entire operation.

As an example of healthcare-relevant data visualization, she mentioned Google’s flu trends chart. She sees an opportunity for the PHTD members to deploy visualization in pipeline opportunities, clinical trials and outcomes research. Marcy also mentioned tracking social media as another potential areas for deploying visualization and indicated that PHTD members should consider the investment made by many end user departments in buying expensive market research reports (with lots of graphic contents) and possibly converting that from “buy” to “build.”

SLA Hot Topic: The Agony and Ecstasy of Discovering More in Search
Panelists: Dawn Lynn, Global Content Manager, Abbott Labs; Virginia Tucker, Professor, San Jose State, School of Library and Information Science; Marcy Phelps, President, Phelps Research

Moderator: Ann Lee, Dow Jones

Introduction: What are the latest technologies that can help searchers discover relevant content in search results? How well do data visualization, auto complete, and predicted search suggestions really work? What else can information professionals and search services do to lead searchers to answers rather than just results? This session
will explore the challenges of developing the interfaces and the back-end technologies that can lead both casual and experienced searchers to added insights from both structured and unstructured data.”

A seasoned PHTD member, Dawn addressed more than 100 attendees with a practical perspective and shared several great insights from her current awareness service success at Abbott. Her clientele spans the entire Abbott enterprise with over 300 alert profiles subscribed by more than 3,000 users with a daily output of more than 15,000 alerts. She spoke about the content value of alerts being directly correlated to the usage and cost (more of the former and less of the latter being best). Dawn maximized Abbott’s IT capabilities by incorporating SharePoint, RSS feeds, LDAP, SSO (Single Sign On). All of her alerts are customized for Abbott-relevant context, and her “ecstasy moment” was the confirmation of her service as a validated and value-added process by her users.

Professor Tucker provided a searcher perspective and shared her insights on the search process. In these days of search becoming a commodity, she feels an expert searcher plays a critical role in discovering the precise answer. She compared the casual end user searcher as a kid learning how to ride a bike with a professional searcher being an Olympian biker. The commutation was obviously in the speed, distance covered and the final result/output. She shared her accomplishments in being able to educate and develop expert searchers. Asked about her best search moments, she said they were from being able to cultivate expert searchers.

Nancy focused on the value-added consulting perspective. Based on her considerable experience and successful consulting career, she emphasized the importance of not just doing the search but being able to filter and present the content.
of results in a visually meaningful and relevant manner. She also emphasized the critical importance of the reference interview to understand exactly what users need. This way the search process will go beyond just quantity (output numbers) to provide quality (insights). Also stressed was the importance of thorough analysis of search results before writing a meaningful search report. Her best moments came when clients said they did not know contents from her search could be visualized with so much impact.

Quick Take: Top 5 Tips for Developing Powerful LinkedIn Profiles

Presenter: Nathan Rosen, Dechert LLP. https://www.linkedin.com/profile/view?id=12855668

Sponsor: Business & Finance Division

This is the first time the SLA Annual Conference offered a series of Quick Take sessions outside of the general conference rooms. Quick Takes consist of impromptu setups in a common area of about 30 seats and a small screen.

Despite its brevity, this well attended (~25 attendees) session was as useful as it was concise. The five C-tips were:

1. **Create** a Complete and Compelling Profile (actually already 3C’s here).
2. **Connect** with all the relevant people you know i.e., school, work, professional associations but NO families or friends (leave that for Facebook).
3. **Contribute** by communicating news and events, and share your insights.
4. **Congratulate** others for their job changes, promotions, etc. but NOT for birthdays (again, use Facebook if necessary).
5. **Craft** your LinkedIn setting to best suit your needs and timing (e.g., do not post minor updates).

The speaker condensed his session from an hour-long past webinar taped for and available from the SLA Business & Finance Division.

**Springer Lunch & Learn**

**Presenter:** Angela Panetta, Business Intelligence Product Manager, Springer.

A veteran vendor (at Wolters Kluwer Health and Thomson Reuters before joining Springer), Angela focused initially on R&D Insight (RDI), informing the audience (about 15 people) about ongoing development on their expert search interface.

She disclosed that RDI now has a commercial projection of late stage R&D compounds based on Credit Suisse reports. She also spoke about the ability to create data tables using BizInt charting functionality for licensing compounds. The last feature is new and would be familiar to PHTD members who have used the Clinical Trials Insight (CTI) database.

All of the Adis databases are now updated on a daily basis and the newly branded PVI Pharmacovigilence Insight (PVI, formerly Reactions Weekly) will soon have alerts as email messages or RSS feeds.
Choices Just Get Harder: Making Career Transitions When Money Is Not the Motive

Presenter: Ken Haycock, San Jose State. Professor emeritus and former director, LIS.

Introduction: “Do you feel that you are stagnating in your current position? Are you moving from full-time employment to a high energy “retirement” and needing alternatives? Where are the positions? What are the possibilities? How do you match your skill set with the range of options before you? And yes, this is a range of options… Learn about assessing your strengths, knowing your requirements, understanding the choices and how to be successful making the move.”

With standing room only attendees (>100) Ken gave a wonderful presentation with lots of insights. Rather than recapping the session, this writer will include the following list of wonderful and insightful quotes from Ken:

**On career change:**
- “Know fear vs. regret (regret is more for what you have NOT done but always wanted to do).”
- “Prepare for the unknown.”

**On retirement:**
- “Retirement is just another career.”
- “Rewire, not retire.”

**On changing jobs:**
- “Grass may be greener (over there), but you still have to mow it.”
- “If you know you are riding a dead horse, it’s time to dismount.”

**On self-improvement:**
- “Invest in yourself, always.”

**On networking:**
- “Join a true network, not a club.”
- “Focus on five things (skills, competencies, recommendations, endorsements, etc.) and NOT 50.”

The most important slide towards the end of his presentation was this one:

**Final considerations:**
- Employee vs. Self-employed
- For profit vs. Not for profit
- Full time vs. Part time plus
- Paid vs. Volunteering
- Permanent vs. Transitory

John Chu, formerly Gilead Sciences

“Vancouver 2014” continued on page 9
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The Search for Meaning and Semantics: Taxonomies Get It Done

Panelists: Joseph Busch of Taxonomy Strategies on “Why Semantics Matter,” and Branka Kosovac of dotWit Consulting

Moderator: Janice Keeler, Past Chair of the Taxonomy Division

Cosponsor: Taxonomy Division

Experienced searchers know that there are many reasons why queries fail to retrieve relevant information, retrieve far more than is wanted, or retrieve unexpected (sometimes relevant, other times not) results. Semantic search consists of a number of different approaches. These attempt to provide context and disambiguation, and are still evolving.

During this well-attended session Busch explained “Semantic search improves search accuracy by inferring the contextual meaning of terms via: disambiguation, Part of Speech (POS) analysis, synonyms, variations and quasi-synonyms, concept matching, natural language query analysis and key sentence detection.” Some aspects of semantic search are relatively familiar and others more advanced: suggestions for related terms, query expansion with synonyms and acronyms (concept search), dynamic filtering of searches (online shopping or faceted search), clustering search results into pre-defined categories and personalization based on implicit or explicit profiles. Busch also discussed SKOS or Simple Knowledge Organization System, a 2009 W3C recommendation to identify, define and link concept vocabularies. SKOS is designed to be used with other standards and vocabularies. Examples included taxonomy powered search results from healthcare.gov, Oracle’s top level taxonomy and event finder, the APS American Physical Society taxonomy browser and an APS Linked data example and APS paper tagging prototype.

Branka Kosovac studies how to manage information from heterogeneous and distributed sources. She noted that elements of semantic search are now used by Google and Bing to help them scale as the web grows exponentially with users wanting to search images, audio and video. A lively discussion ensued with a number of questions and comments.

A related panel on The Agony and Ecstasy of Discovering More in Search also explored this topic, with panelists Marcy Phelps, Phelps Research; Dawn Lynn, Global Content Manager at Abbott; Professor Virginia Tucker, of San Jose University School of Library and Information Science; and moderator Ann Lee of Dow Jones. They discussed the latest technologies being used to help searchers discover content, including utilization of data visualization, automation and predicted search suggestions to enhance results, and other ways to enable searchers to provide answers, not just results. The panel also covered techniques to develop interfaces and back-end technologies for both casual and experienced searches of both structured and unstructured data.

How can information professionals become involved with semantic search? Metadata, taxonomy and ontology development and search engine optimization are obvious applications. Talking about data (structured and particularly unstructured), as well as literature is probably a good idea. Keeping track of where data is (data provenance) and how it can be retrieved are underestimated challenges. Integrating internal and external content is still nascent. Searches pop up in new and unexpected places – some interfaces are pretty clunky and could use the counsel of experienced searchers. Are we talking to the start-ups and established providers to help improve their interfaces?

Expect to hear more on semantic search and related topics, as technologies and standards are still developing. Scaling is an underestimated challenge as web content expands. While the need for semantic search, database interoperability and collaboration and building bridges between taxonomies and ontologies will continue to grow, the challenges are many.

Mary Chitty, Cambridge Healthtech
All-Sciences Poster Session

John Chu spoke with some of the presenters about their work:

Science in the News: The Role of the Science Librarian in Introducing Medical Literacy Concepts to Undergraduate Student.
Christine Malinoski, Science and Data Service Librarian, Lewis & Clark College, Portland OR.

The poster and a brief chat with the author reinforced the lack of skills, experience and knowledge most undergraduate students have for scientific material on the web. They were not selective in searching and filtering the quality of information and in general were reluctant in verifying general media content (blog, podcast, radio piece, newspaper article, video, magazine feature, etc.) against authoritative sources such as WHO or WebMD.

John Kromer of Miami University, Oxford, OH.

This was extremely relevant to those of us providing support for Medicinal Chemistry department colleagues. The poster and detailed discussion with the author about the poster’s goal (to improve bibliographies of the students) revealed that while the instructions did provide moderate improvement, the results were considered unsatisfactory in the use of ACS style. Students were instructed to exclusively use ChemDRAW and SciFinder. A suggestion for using REAXYS as a follow-up was not possible, as the University does not have a license to this comparable organic chemistry reaction synthesis database.

Stepping Outside the Library: Solo Hospital Librarians As Clinical Librarians.”
Elizabeth Laera, Medical Librarian, AHIP Baptist Health Systems, Inc. Princeton, AL.

The poster and its author revealed a dramatic increase in library usage (82% from 2012 to 2104) as the result of having a solo librarian at BHS’s Princeton campus. She was very proactive in reaching out to her clientele (hospital practice team) as an embedded member via participation in floor rounds, visiting wards twice a week, and other activities. When posed with the question of conducting training sessions for residents on online searching, Laera revealed that one-on-one sessions had been held for PubMed searching, but more focused ones on products such as Clinical Key were not done due to the cost of a license (institutional agreement).

All three librarians were highly skilled, well-spoken, very proactive and knew their craft and clients well. Any one of them would be a strong candidate as a PHTD member and have potential for any job openings at companies in the biopharma industry.

John Chu, formerly of Gilead Sciences
First SLA Conference Experience

The SLA Annual Conference in Vancouver this year was my first of hopefully many SLA conferences to come, as the organization overall really made an impression on me. I was fortunate to be a recipient of a travel scholarship through the Pharmaceutical & Health Technology Division and attended several of its events and was welcomed with open arms. I was also able to sit-in on a meeting and observe the interworking of the division, and practice my networking skills and make some new connections. This was a trend throughout the entire conference: open-arms and genuine interest. In addition to newbie support, the breakout sessions, speakers, individuals, and groups alike displayed a substantial amount of charisma about the organization itself and the profession. I attended several sessions where I couldn’t help but take notes – which speaks volumes. Through the speakers, I learned about new technology and systems, trends, and professional development methods. Two sessions really stood out for me: the first was, “New Roles for Libraries in Research Report and “I’m Not a Brand!” This was a panel focused on journal impact factors and why they are not reliable or an effective way to critique a professional. Therefore, measures of impact with altmetrics (Social Network Shares, times accessed, open access, etc.) should be included with the overall impact of the work/literature and of the creator – fascinating! The second session focused on how and why it is so important for professionals to build their own brand, apart from their organization. In addition to stressing its importance, Mary Ellen Bates advised how to embrace and brand yourself.

Furthermore, the networking opportunities throughout the conference were a most fruitful opportunity for me. I will be completing my Master’s in Library and Information Science degree this coming June, so being able to network and get my name out into the profession before I graduate is absolutely priceless. Well done, SLA! I’m hooked and am very excited to pursue more opportunities through my University of Denver SLA Student Chapter Presidency and through the organization in its entirety.

Hanna Schmillen, MLIS Candidate-University of Denver Graduate Student Intern: Health Sciences Library, Anschutz Medical Campus, University of Colorado & Auraria Library, Urban Campus

"Vancouver 2014" continued on page 12
Spotlight Session: Disruption, Alignment, and Embedded Librarianship: Connecting the Dots, and Avoiding the Traps
Presenter: David Shumaker, Department of Library and Information Science, Catholic University of America, Washington, DC.

For some, an embedded librarian is one who is physically in the same setting as their users – for example, a research librarian within a medical lab assisting research by being constantly available and accessible throughout the entire project. However, there are many different types of embedded librarians who cover a broad spectrum of duties and institutions. Embedded librarianship can occur virtually or halfway across the nation through online discussions and assistance. It can also occur in research, academic, and corporate settings. Embedded librarianship has nothing to do with the physical location of the librarian, but rather the services which an embedded librarian supplies. Embedded librarians and information specialists are project- and subject-specific and are a significant part of the project as a whole.

Environments are disruptive by nature and processes, budgets, and expectations change. As an embedded librarian, you are specialized within the resources and projects that are distinctive to the organization and showing the value of your service is not always easy because of the nature of the work. Part of this session was a knowledge café in which professionals spoke to one another about overcoming obstacles faced by embedded librarians. If possible, demonstrate your monetary worth by showing previously financially successful projects or that money was saved due to your diligence and expertise. Either way, clear and concise documentation and communication is key. Identification of individual needs by fellow employees is one way to help ensure success is to collaborate with fellow embedded librarians within the same field – sharing resources and ideas is a great way to identify and compare efficient techniques.

Staying in the Game: New Roles for Libraries in Research Support

Presenters: Elaine Lasda Bergman, State University of New York at Albany Libraries; Mike Buschman, Plum Analytics; Steven Roberts, School of Aquatic and Fishery Sciences, University of Washington.

Moderator: Lutishoor Salisbury, University of Arkansas.

Bibliometrics, altmetrics and impact factors, oh my! This panel session focused on journal impact factors and why they are not reliable or an effective way to critique a professional. Many employers use impact factors as a way to distinguish the impact of the professional, but journal impact factors do not answer many relevant questions relating to the success and overall impact of the scholar. Examples include: How many times has the article been shared on social media? How many times was the author tweeted or commented about? Did someone record a conference session and post it to the web, and, if so, how many times has it been viewed? How many libraries hold your book? Has your work been mentioned in a blog? All of these questions should be considered when evaluating a scholar and added to their overall scholarly impact. Regardless of the field of expertise, these alternative impact metrics have a place. Furthermore, impact factors take up to several years to reflect upon an author due to time it takes to create work, publish the material, and for the work to be shared. The alternative metrics, bibliometrics and altmetrics, focus on as many avenues as possible to evaluate a scholar’s impact and is not delayed by publishing times. If a fellow scholar shares another’s citation on their Twitter it results in instant impact, which may or may not be utilized. However, these types of instant, non-traditional impacts should be taken into consideration of scholars’ overall impact. Additionally, by encouraging open access to data and work, these new and improved impact metrics will become more relevant because a larger audience has access. Limiting the accessibility to pre-published information is not advantageous to encourage further research through shared resources. These new, potential avenues of evaluation and credit lead to more data, a larger feedback loop, and a solid foundation for open accessibility of information. “How many times has my article been cited on other scholar journals?” is not the main question. The impact of a scholar’s work is so much more than only scholarly journals. A journal citation is one piece to the much larger equation. The more realistic question: “How much is my research impacting the social AND scholarly community; and, if so, how much?”
“I’m Not a Brand!”: Building Your Personal and Professional Profile

Presenter: Mary Ellen Bates, Bates Information Services

Setting up expectations for oneself is a fairly simple task. Perhaps you create a “To Do” list for day or week or have general guidelines of goals. However, meeting others’ expectations about you is another task. Mary Ellen Bates dug deeper into how and why it is so important for professionals to build their own brand outside of their organization. As an individual, what do you bring to the table that others should come to expect? How do you advertise your unique skills in a way that does not categorize yourself as overzealous? Personally, the concept that stood out the most was when people search your name, what do they EXPECT to find? We are not currently concerned with the actual results of the search, but the expectation of the results set by the searcher. How often are information specialists not concerned with the actual search results? And who is to say what “meets expectations?” This is such a novel idea: the expectations of the searcher depend on the professional field, fellow peers, where they are searching (i.e. Facebook vs. LinkedIn), along with geographical area in which you are located. Do you stand out from the crowd in a way that meets or exceeds expectations within the health sciences and medical world? What unique skills can you showcase within your institution and individually that demonstrates your successes and strengths? Have you been an advocate for yourself?

The creation of your own personal brand includes who you are and how you show up. Once people encounter you, virtually or physically, how do you represent yourself? The focus of others’ expectations is not solely on your intentions, but how you present yourself to the professional world. Part of being visual is to be on a social network. You may have a love or hate relationship in regards to social networks, but without some sort of social media presence, in the eyes of the world, you probably do not exist. Harsh but true. Whether you are trying to attract the public, health science peers, present or future employers, etc. they EXPECT to find you. You want to be found in ways that shed light on your skills and abilities. Your goal, when building your personal “brand,” is to demonstrate why people should care about your skills.

Hanna Schmillen, MLIS Candidate-University of Denver Graduate Student Intern: Health Sciences Library, Anschutz Medical Campus, University of Colorado & Auraria Library, Urban Campus

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BioIT World 2014 was replete with talk of “big data” and “real world data” and the need for even more clinical data than is currently available. Clinical trial data isn’t enough. Real world data is absolutely essential, particularly for demonstrating comparative effectiveness. Extracting knowledge from electronic medical records, particularly from unstructured free text is also crucial — and challenging. Crowdsourcing patient data using consumer mobile devices such as FitBit rather than specialized medical equipment is also a new possibility. There was lots of talk regarding Natural Language Processing, Linked Data and open source, including R and Hadoop. Cloud computing is definitely here to stay.

Keynotes included John Quackenbush of Dana Farber Cancer Institute, Harvard School of Public Health and CEO of GenoSpace. He envisioned an information ecosystem for personalized genomic medicine, and addressed the unique needs of big data in biomedical research, with the equal importance of volume, variety and velocity. One example of how things have changed was that several years ago, if he or a family member had cancer he would have borrowed against his house to pay for sequencing. Now, if not covered by insurance, this could go on a credit card.

Stephen Friend, president of Sage Bionetworks and former Merck VP, spoke about “Enabling Experts and the Public to Solve Complex Biomedical Problems.” One emphasis was on the importance of open knowledge currency transition as thinking about diseases shifts to the molecular level. Another was the need to study wellness as well as disease. To illustrate this he gave a preview of Sage and Mt. Sinai’s Resilience Project, which aims “to scan DNA samples from about one million healthy adults with the goal of identifying the small number of people who remain healthy despite carrying mutations that are known to cause rare disease in childhood. This approach provides an opportunity to identify protective genes and environmental factors that may enable the development of new therapeutics or ways to prevent disease.” Sage Bionetworks promotes collaboration and data sharing. (2014 PHTD Spring and SLA annual keynotes speaker John Wilbanks also works for Sage Bionetworks.)

Three speakers discussed genetic security and privacy, including Yaniv Erlich of the Whitehead Institute for Biomedical Research, who reflected on the growing accessibility and security of genomic data. He’s done amazing work using genealogy databases to assemble large scale, centuries-old, longitudinal data. Isaac Samuel

Bioinformatics Information Resources

Mary Chitty, MSLS, Library Director & Taxonomist, Cambridge Health Alliance

ABSTRACT

Biological data is very noisy and disparate, and reproducible results are elusive. More and more, researchers and the pharmaceutical industry are turning to powerful software to interpret genomic, molecular, and clinical information and make meaningful comparisons. The paradox of “big data” is that, as databases grow to sizes that are difficult to manage and parse, even more data is needed — particularly longitudinal data correlating genotypes and phenotypes with clinical outcomes. In this environment, keeping track of where all the data is, how to access it, and monitoring data quality and integrity are often underestimated challenges. Because much useful data is stored as unstructured text, the interoperability of databases relies on disambiguating drug, gene and protein names, and mapping ontologies and taxonomies. This poster lists and annotates valuable resources for tapping the potential of bioinformatics. These include computational tools for analyzing genomic and molecular data. Knowledge drives where state-of-the-art research in computational biology is collected, and terminology resources that help diverse databases to communicate with one another, multiplying their discovery potential.

What is bioinformatics? Expert perspectives and definitions

The definition of bioinformatics is not universally agreed upon. Generally speaking, we define it as the creation and development of advanced information and computational technologies for problems in biology, most commonly molecular biology but increasingly in other areas of biology. As such, it deals with methods for storing, retrieving and analyzing biological data, such as nucleic acid (DNA/RNA) and protein sequences, structures, functions, pathways and genetic interactions. Some people construe bioinformatics more narrowly, and include only those issues dealing with the management of genome project sequencing data. Others construe bioinformatics more broadly and include all areas of computational biology, including population modeling and numerical simulations. Biomedical informatics is a slightly broader umbrella that includes not only bioinformatics, but other areas of informatics in biology, medicine and health-care. They are closely related. Russ Altman “Guide to informatics at Stanford University, 2006 http://www.helix.stanford.edu/people/altman/bioinformatics.html

Despite the apparent fatigue of the linguistic use of the term itself, bioinformatics has grown perhaps a point to beyond recognition. We explore both historical aspects and current trends and argue that as the field expands, key questions remain unanswered and acquire new meaning while at the same time the range of applications is widening to cover an ever increasing number of biological disciplines. Rise and Demise of Bioinformatics? Promise and Prospects, Christos A. Duzgun, PLOS Computational Biology April 2012 http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pcbi.1002487

Bioinformatics is the emerging field that deals with the application of computers to the collection, organization, analysis, manipulation, presentation, and sharing of biological data. A central component of bioinformatics is the study of the best ways to design and operate biologic databases. This is in contrast with the field of computational biology, where specific research questions are the primary focus. Bioinformatics, National Academies Press, 2003 http://www.ncbi.nlm.nih.gov/geo/ http://www.ncbi.nlm.nih.gov/bookshelf/NBK149639/

We have coined the term Bioinformatics for the study of informatics processes in bioinformatics. Our Bioinformatics approach typically involves spatial, multi-level models with many interacting entities whose behavior is determined by local information. Theoretical Biological Group, Univ. of Utrecht, Netherlands, Paulien Hogeweg Director http://www-binf.bio.uu.nl/

Clinical Bioinformatics

Different from other informatics, clinical bioinformatics should focus more on clinical informatics, including patient complaints, history, therapies, clinical symptoms and signs, physician’s examinations, biochemical analyses, imaging profiles, pathologies and other measurements. It was emphasized that the simultaneous evaluation of clinical and basic research could improve medical care, care provision data, and data exploitation methods in disease therapy and algorithms for the analysis of such heterogeneous data sets. Clinical bioinformatics: a new emerging science Xiangdong Wang 1 and Lance Lottia, Journal of Clinical Bioinformatics 1:1 in 2011 http://www.ncbi.nlm.nih.gov/pubmed/articles/PMC3090704/

Translational Bioinformatics

Translational bioinformatics is the development of storage, analytic, and interpretive methods to optimize the transformation of increasingly voluminous biomedical data, and genomic data, into proactive, predictive, preventive, and participatory health. Translational bioinformatics includes research on the development of novel techniques for the integration of biological and clinical data and the evolution of clinical informatics methodology to encompass biological observations. The end product of translational bioinformatics is newly found knowledge from these integrative efforts that can be disseminated to a variety of stakeholders, including biomedical scientists, clinicians, and patients. AMIA American Medical Informatics Association, Translational bioinformatics http://www.amia.org/applications/infomatics/translationalbioinformatics

GROWTH OF THE BIOINFORMATICS LITERATURE: ARTICLES PER YEAR 1984-2013

GROWTH OF GENBANK TOTAL SEQUENCES 1982-2013

Published "computational biology"
[MeSh] OR bioinformatics

GenBank sequences
Kohane, Children’s Hospital and Harvard Medical School’s Director of the Countway Library of Medicine, made a case for genomic data sharing at the risk of reduced security. In addition, bio-artist Heather Dewey-Hagborg uses PCR (polymerase chain reaction) methodology to extract human DNA from stray samples. From this, she constructs face casts based on the SNP’s (single nucleotide polymorphisms) she finds.

I presented a Bioinformatics Information Resources poster, and highly recommend doing so yourself. I had presented posters on Medical Devices and Molecular Diagnostics at SLA Annual in San Diego (and at an SLA New England chapter and a diagnostics meeting last fall). Someone had pointed out that I had a graph showing increases in the literature – but not data, which made me realize information professionals need to be talking about data as much as we do literature. Scientists understand posters, and presenting one can enhance professional credibility and visibility.

BioIT World was preceded by Medical Informatics World, which produced several of my favorite insights of the year. A speaker from the nonprofit HL7 (Health Level Seven International) pointed out that standards are like toothbrushes – everyone wants one, but nobody wants to share theirs. An Intel session chairperson mentioned Amara’s law, “We tend to underestimate the effect of a technology in the short run and underestimate the effect in the long run.” This may well be the most relevant rejoinder to critics who doubt whether and when all the investment in genomic and pharmacogenomics technologies will pay off.


Translational Science: Clues from the Resilient Science 30 May 2014: Vol. 344 no. 6187 pp. 970-972 DOI: 10.1126/science.1255648 http://www.sciencemag.org/content/344/6187/970.full
Federated Search Survey: How Searchable Are Your Online Resources?

SLA member responses indicate a strong desire for advanced federated search function

Recently InfoDesk conducted a brief six-question survey of SLA members to measure value of a “federated search” function that allows users to search all of their organization’s online content with a single query. The responses from 32 SLA members (predominantly from the PHT Division) highlight some ongoing search challenges member are facing and suggest what an optimal solution might look like. Additionally, InfoDesk contacted several SLA members to help interpret the findings. This article summarizes the results and provides the members’ comments in their own words.

Understanding the Challenge

The first question in the survey looked at the types of content provided by online information centers. Not surprisingly, nearly all respondents provided aggregated content and subscription publications. Slightly more than half provided some type of Web content, internal content and eBooks, but only about 15% were integrating social media content. (See Fig. Q1)

No Federated Search

Question two simply asked, “Does your information center provide a ‘federated search’ function that allows users to search all* of your organization’s online content resources with a single query? (*Including all the subscription, licensed and free sources, plus eBooks and other content made available through your online information center).” The response was an overwhelming “No” (81.25% - See Fig. Q2).

Despite a wealth of content, accessing it is not always easy. Asked why, Sonal Shukla, Associate Director, Medical Communications and Knowledge Management at Actavis plc, suggested, “The biggest limitation in most organizations comes from the lack of cooperation from the internal IT department – especially in corporations.”

According to Shukla, “The Knowledge Management or Information Services have to work within the parameters established by the internal IT department. The IT doesn’t necessarily spend time in assessing specific needs of the Knowledge Management (KM) or Information Services Group (ISG) or partner with them in selecting the platform or designing the architecture based on a structured taxonomy. Additionally, IT doesn’t understand the scope of the services and resources offered by KM/ISG – hence when the systems are selected for the entire company, this critical factor of offering a federated search capability for the knowledge-based resources is often overlooked.”

Similarly, Marydee Ojala, Editor-in-Chief, Online Searcher, said the survey results “underscore the dominance of SharePoint in the corporate environment.” She added that “searchability of electronic resources has long been piecemeal, but a federated search solution must take into account the IT infrastructure already in place.”

Satisfaction with Current Searchability

Question three looked at how satisfied respondents are with the searchability of their online resources. (See Fig. Q3)

“I am surprised that 6% of respondents are ‘very satisfied,’” said Shukla of Actavis. “I
Q3 Overall, how satisfied are you with the searchability your online content resources?

Answered: 32  Skipped: 0

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<tr>
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<td>7</td>
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<tr>
<td>Very dissatisfied</td>
<td>4</td>
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6.25% 43.75% 15.63% 21.88% 12.50%

Q4 What kinds of “federated search” solutions has your organization tried? (check all that apply)

Answered: 32  Skipped: 0

<table>
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<tr>
<th>Solution Type</th>
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<td>Other (please specify)</td>
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50.00% 31.25% 15.63% 21.88% 31.25% 0.00%
Though “hard to quantify,” Shukla agreed with most members that, “missed information/opportunities due to ‘inexpert searching’ is one of the primary drawbacks of not having a federated search function.” Perhaps more importantly, she added, “is the perception they are missing out on important information due to lack of federated search.”

Also troubling is the, “reduced usage of online information resources,” said Shukla. “Searching for information in multiple resources is a daunting and overwhelming task for the majority of end-users. If the search capability of a database is not intuitive and user-friendly, the end-users are not going to spend much time in searching within that resource. This eventually decreases the usage of online information resources. Easy, quick access to the resource with accurate, comprehensive search results will keep the attention and interest of the end-users – especially the millennium generation workforce.”

Like most respondents, Shukla felt that over-reliance on search engines, such as Google, remains problematic, calling it “epidemic.”

### Envisioning a Solution:

The final question asked respondents to put together a wish list of features they would want in a “federated search” function. (See Fig. Q6)

Agreeing with nearly 94% of respondents, Shukla said federated search could have biggest impact if it had, “advanced search function integrating internal and external resources.” Ideally, she said it should also “offer the functionalities of refining the search results based on limits.” This, she said “can save time, eliminate duplication, provide enhanced search results in the customized format. There is an increasing expectation to integrate internal and external information and provide ‘Best Practice’ solutions on a platform that’s a one-stop shop. To meet this goal of offering integrated solution, it becomes imperative to have a very robust advance search function”

“I think the list of features that librarians want in a federated search function was spot on. They are absolutely necessary for successful searches,” said Ojala.

Sean Smith is Vice President of Marketing for InfoDesk. He is also PHT Division PR Chair and Program Chair for the 2015 Spring Meeting in Las Vegas. Contact him directly at sean.smith@infodesk.com, @InfoDeskGuy on Twitter.
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Years ago, former CapLits editor John Carey and his son Ted scanned decades worth of CapLits issues and other PHTD documents to PDF. So in the tradition of “JAMA Revisited,” CapLits will occasionally republish material that would offer perspective on where we were compared to where we are. The archive begins in 1948 but my first stop was 1994-1995. Twenty years ago seemed an interesting place to start, not only because the large majority of us have memories of that time but also because it was also a period during which the internet was moving from computer labs into general use. What I found in a CapLits from that period was a primer on some new technology called the World Wide Web.

From a little farther back in time comes a piece on the Human Genome Project. In 1993, the sequencing of DNA had begun, but the rapid advances in biotechnology which enabled completion years ahead of schedule had not. Many of the questions asked about the Human Genome Project in the early 1990s are again being discussed in regards to personal genome sequencing. These articles published as they were then, and as the Human Genome Project demonstrates, sometimes more things change, the more they stay same. I hope you enjoy this trip in PHTD’s own time machine.

Mark Domke, Prescott Medical Communications Group

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**What In the World is the “Web”?!?!!**

by Mary Talmadge-Grebenar, Bristol-Myers Squibb Company

By now, most of us have heard or read about the “Web”. The “Web” for those of you who have not heard about it, is the World Wide Web, also known as WWW or W3. The Web is a global network of computers or servers linked together by the Internet. Universities, companies, the government and many individuals have put resources up on the Web for private and public access. The Web can be accessed by using a “Web browser.” The most common browser is called Mosaic. There are actually three brands of Mosaic software: NCSA Mosaic, a freeware program available by anonymous ftp (file transfer protocol) from the University of Illinois, Mosaic Netscape and Air Mosaic. The Netscape and Air versions are commercially available products. All the Mosaic products have PC, Macintosh and UNIX interfaces except for the Air version which does not currently have a Macintosh interface. Mosaic software gives you point and click access to the Web. A non-graphical interface with the Web is also available. Lynx, a non graphics based software is available on most UNIX computers. Lynx gives access to all the text based information on a Web page.

Information on using Lynx can be found in most basic Internet books.

Now that you have a little better idea of what the “Web” is and how to look at it, you’re probably asking “What is on the Web that would be of any interest to me?” As an information professional in a pharmaceutical company, there are many different types of questions that a scientist or business (marketing, finance, etc.) person might ask. There are Web sites that run the gamut from chemistry to biology to medicine to patents to stock quotes and many many more. Every day new Web sites open and more information is put out onto the Internet. It is nearly impossible to keep up on all the new information that is available. In the following section, I will highlight a few Web sites which might be of interest or use to a pharmaceutical information professional. One note. You will see a designation for each site, this designation or address is known as a URL (Uniform Resource Locator) and tells your computer where to look on the Internet for this Web page.
The Human Genome Project: Ethical, Legal and Social Implications

(Summary of a presentation by H. Thomas Murray at the 84th Annual SLA Conference, Cincinnati, Ohio)

The Genome Project is a 15 year international program (now in its 3rd year) to map and sequence all genes on the human chromosome. No one can deny that this ambitious endeavor to catalogue the “Book of Human-kind” has the potential to revolutionize medicine, but as with anything we use or create on this planet, there is potential for great good and there is potential for great harm or confusion, which in this case may be of Orwellian proportions. The project will make available the kind of information about people we never had before. Yes, we will be able to treat many diseases that at present are incurable, but the way this information can be used goes way beyond medical treatment. H. Thomas Murray, scientist and bioethicist, explored the ethical, legal and social implications of the Human Genome Project at the invitation of the Pharmaceutical and Biological Sciences Divisions for the SLA Annual Conference in Cincinnati.

Mr. Murray is a professor of Biomedical Ethics, and Director of the Center of Biomedical Ethics at the School of Medicine, Case Western Reserve University. He is also a member of the working group on ethical, legal and social issues that is part of the National Institute of Health’s Center for Human Genome Research. The speaker focused on three main questions: 1) What do we do with the avalanche of genetic information we will be getting? 2) What limits should be imposed on our ability to genetically manipulate ourselves (such as gene therapy)? 3) How should we respond to the likely changes in our self-understanding of who we are, what we are, why we do what we do, what we are responsible for and what is beyond our control? Issues raised by these 3 questions are perplexing if not mind-boggling. For instance, we will have (and already have in some cases) genetic risk tests for certain diseases. While this may be desirable for certain diseases, such as cancer, where steps can be taken to reduce the risks of getting the disease, what about diseases that are essentially a death sentence, such as Huntington’s Disease? What good does it serve? How can such a person get Health Insurance? Who has access to such tests and who decides if they get tested? What about carrier screening and prenatal screening? Do we want our children to be “marked” as less intelligent, a behavior problem, etc.? Do we want more patents with “the perfect baby syndrome”? What about temptations to “‘edit” our genetic code in search of the “perfect” traits? How does this affect our sense of responsibility and social mores? There is already a trend to make connections between our genes and morally and socially significant aspects of human life, such as character traits, propensity to violence, intelligence, creativity, etc.

Many of these genetic explanations are made in an attempt to free persons from guilt. It is perhaps this third issue of “understanding ourselves” that gave the most food for thought and even a health warning. Genetic profiles and explanations of behavior concentrate on our human differences; thus rather than being an equalizer as our constitution has strived so hard to do (“All men are created equal”) it will provide an endless stream of reasons for treating each other as “different”. How we deal with this individual and group “difference” will decide our political, legal and moral future.

Karen Krasznnavolgyi
Junior Information Liaison-Life Sciences
DuPont Merck Pharmaceutical Company
Wilmington, DE 19880

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PHTD Discussion List Highlights – Fall 2014

Our Discussion List has a variable membership, with an enrollment that fluctuates as new members join and others decide to unsubscribe. Even if you leave the list temporarily, though, you can always access archived posts using your SLA Discussion Lists login. Over the past five months our total readership has remained consistent, with the exception of a significant dip in June, when approximately 15% of our members un-enrolled in conjunction with the annual conference and summer holidays. I was curious – was this indicative of a decrease in members and if not, how quickly would the number of subscribers bounce back? By late August our numbers had returned to a level roughly comparable to the readership we had in late April (483 members). So, if you’ve posted a question to the membership and received a response that was less enthusiastic than you expected, it might be partially due to a smaller audience that was reached over those summer months. During an average workweek, our discussion list sees a post nearly daily (~20/month).

Ever wonder to what the majority of messages on the Discussion List pertain? Invitations to webinars and job announcements account for 41%. The number of job postings has seen a significant increase (almost 5x) over the first half of the year, now equaling the number of postings for upcoming webinar learning events! To help those seeking employment opportunities, Anna Shallenberger launched her inaugural edition of SLA PHTD’s weekly job leads list on September 19, 2014 monitoring LinkedIn, twitter feeds, a variety of job boards (indeed, Simply Hired, Monster, Careerbuilder, Brass Ring), etc. for you. The new Job List weekly feature will make it easier to track the latest position openings nationwide, ensuring you don’t miss individual postings to the numerous job boards.

Sean Smith of InfoDesk introduced a recent post with this observation, “One of the most important lessons I’ve learned in my personal and professional life is this: ‘You don’t always have to figure out a problem alone — in fact, it’s often better if you don’t.’” He was gathering your assessment of the usefulness of federated search, for an article in this issue of CapLits, using the Discussion List to provide a link to his survey. Isn’t it interesting that in our world of exploding technological developments, the simplicity of our PHTD discussion list still remains a valid way to engage our peers and learn from them?

Highlighted Post: a number of interesting queries have been posted including the following question from one of our newer members, Rebecca Reel of Biogen Idec (Cambridge, MA). She sought suggestions for thesauri that cover Indications/Therapeutic Areas (TAs)/Mechanism of Action (MoA)/Targets. She summarized the results she received for us:

1. Thomson Reuters’ Cortellis
2. MeSH
3. EphMRA codes*: 2014 Codes

*http://www.ephmra.org/Classification

List Tip: our division uses the list to communicate important information to us. Visit the archives to retrieve details of upcoming training and networking opportunities. Of special note: Karen Mirabile made a major announcement (7/3/2014): The “2015 PHTD Spring Meeting will be held Sunday, April 19th – Tuesday, April 21st, 2015 at Bally’s Las Vegas Hotel.” That’s a “Hold the Date” announcement around which you can start making. As you work to finish out the fourth quarter, keep your head above water by keeping in touch with your colleagues via PHTD discussions.

To post to the PHTD discussions, email SLA-DPHT@sla.lyris.net

View/Search the Archives by logging into http://sla.lyris.net/read/login/

Yours,

Julia Parker
Discussion List Admin, PHTD

Comments/Questions? – biosleuth@gmail.com

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<table>
<thead>
<tr>
<th>Advertiser</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Annual Reviews</td>
<td>26</td>
</tr>
<tr>
<td>BizInt Solutions</td>
<td>14</td>
</tr>
<tr>
<td>Informa Business Information</td>
<td>8</td>
</tr>
<tr>
<td>Infotrieve</td>
<td>27</td>
</tr>
<tr>
<td>Insight Pharma Reports</td>
<td>13</td>
</tr>
<tr>
<td>Ovid</td>
<td>24</td>
</tr>
<tr>
<td>Pi2 Solutions</td>
<td>28</td>
</tr>
<tr>
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<td>15</td>
</tr>
<tr>
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<td>2</td>
</tr>
<tr>
<td>TPR</td>
<td>21</td>
</tr>
</tbody>
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