Human DNA: Global Trends in Commercial & Public Activity*; www.sussex.ac.uk/spru/1-4-3-1-2.html) that stated its objective to provide a global and comprehensive quantitative and qualitative analysis of patents, filed and/or granted during the 1980–2003 period that claim human DNA sequences.

Whatever one concludes about the ethics of genetic research and whatever direction these debates and court cases take, the information now available in USGENE is in high demand on all sides. And with less time required to locate U.S. sequence data, more time can be spent on actual research and development in all industries.

OTHER DISTRIBUTION MODELS

Since its launch just over a year ago, USGENE has been very successful. Usage patterns are increasing every month and the feedback from the patent community has been positive. Back in the home office of Martin Goffman Associates, life is good.

Licensing the database directly was the next step in the process for Goffman. Companies that have in-house resources of scale are now able to purchase a customized subscription of USGENE data in multiple formats to suit their in-house patent bioinformatics information needs. Goffman looks forward to expanding this offering in the future while continuing to provide the updated database on STN.

“I’m having a lot of fun. I still run all three businesses! I continue to do search work and have a dedicated group of clients who rely on me. Rick Neifeld and I still run PatentValuePredictor. And now I run SequenceBase as well,” says Goffman. “I love my work as a searcher and think that it is essential to keep up my skill set—that helps me with all my businesses. I still go to training classes and do whatever I can to maintain a high education level.”

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Comments? Email the editor (marydee@xmission.com).

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WITH internet content exploding, Web 2.0 and its requisite search tools emerging, and journalists no longer defining the news, information professionals are adjusting to a world where anyone with access to a keyboard is not only an author but can also be an “expert.” Searchers stay ahead of the game by constantly viewing content with a skeptical filter: What is it, who wrote it, where it written, why was it said, and where was it published? If information does not set off any whacko alarm bells, it passes this unofficial test and may just be worthy to pass along to a patron or client.

Enter the content aggregators: Long before everyone’s desktop was connected to the internet, industry-specific information was gathered, coded, and distributed via Dialog, LexisNexis, Orbit, STN, and Dow Jones Factiva. Although these vendors must now compete harder for their customers’ attention, information professionals continue to rely upon the credibility that comes with hosted content—especially when it comes to intellectual property and patents.

THE PATENT PROCESS

Patent literature commands the respect of any searcher who has ever gone near it. Intellectual property experts say that about 80% of the information published in a patent document is not available anywhere else. There are no lexicographers who monitor the publication process, so inventors can use whatever language they choose. If you are scanning the patent literature for a type of table, you could miss important documents simply because the inventor describes her device as “a planar surface with three or four perpendicular members.” Equally important to understand is the issue of timing. A patent application is usually published 18 months after filing. Once published, the application is available for public inspection, while under examination by the patent authorities in its country of origin. When the examination is complete, and if the applicant is successful, the patent is granted and issued. This legal process may take several years to reach a conclusion.

The stakes are particularly high when it comes to patent research in the pharmaceutical, biotechnology, and agricultural industries. The importance of DNA and protein research is critical to the discovery of new drugs and vaccines, genetic therapies, and sustainable agriculture. Missing details in genetics research is not an option. A key part of this process is known as genetic sequencing, or sequence data.

Last year a groundbreaking database known as USGENE was released on STN International, a service of FIZ Karlsruhe and Chemical Abstracts Service (CAS). USGENE allows searchers to
perform freedom-to-operate, prior art, validity, and infringement patent search services in U.S. gene patent publications, and provides the most up-to-date sequence data from the United States Patent and Trademark Office (USPTO) database. It is the only one to respect the source of this database to be a Fortune 100 company or an over-sized government agency. USGENE in fact originates from a one-person firm known as Sequenom Inc., located in the home office of New York City.

BACKGROUND
In 2007, after 30 years of his career as a Ph.D. chemist, he worked in the corporate sector for more than 20 years as both a laboratory researcher and inventor. In 1985 he started his own patent consulting and research group, which he still operates today as Martin Goffman Associates. His current base runs the gamut of small inventors to the Fortune 500, and he has enjoyed tremendous success over the years. He is also the co-founder of StockPricePredictor, LLC, which offers automated patent valuations.

In order to stay connected as a sole practitioner, Goffman is active in the Patent Information Users Group (PIUG) and the Association of Independent Information Professionals (AIIP). An expert searching first and foremost, he has been following the early days of Dialog and Chemical Abstracts Service (CAS). As a pioneer in the work-from-home movement of the 1990s, he has truly found what works for him. “I love having my office at home”, says Goffman, “and the office outside that is one point and found that I really reasoned the time it took to get there.”

IDENTIFYING THE NEED, SEEING AN OPPORTUNITY
Goffman specializes in scientific and technical patent searching for legal and competitive intelligence applications. In the course of his work, he would routinely need to search several separate sources in order to fulfill the information needs for his clients. While attending a training session on sequence searching led by Robert Austin of FIZ Karlsruhe, the two began a discussion of what was missing in available sources. The major sequence databases in Europe were lacking a significant portion of U.S. granted patents and applications. Goffman noted that a proficient sequence searcher would need to go to five different sources, at a minimum, in order to construct the proper results. As a trained specialist in scientific and patent searching in the STN databases, Austin was also keenly aware of the need for a single source for U.S. patent sequence searching. Although the USPTO held limited sequence searching options in its databases at that time, it was not available to the Karlsruhe database that would complement—not compete with—their current offerings, Goffman commented. “If I had been a nonsequence perspective they have been absolutely wonderful to work with.”

STN describes the addition of USGENE as “a major enhancement to patent sequence searching on STN, where it features the same powerful, user-friendly sequence searching options that are available in DGGEN and PCTGEN.” STN training courses have now been updated to include USGENE, and have come full circle. “In 1995, I was a person delivering a course on how to obtain it or thought it was all freely available on the web. Out of pure necessity he had developed a cumbersome methodology for sequence searching involving numerous government and commercial sources. In 2005 a paper titled “Information for Biotechnologists 1: Sequences,” in which the whole research area was described as a “mirefield for the unwary” (Chemistry in Australia, 2005; 28, 2; supplement), was published. “I knew the database that is now available at USGENE’s workshop (Manual.pdf).”

The PRODUCT SPECS
USGENE covers all available peptide and nucleic acid sequences from the published applications and issued patents of the USPTO dating back to 1982. Each database includes a sequence and related data including organism name, sequence length and tables for modifications, and other features. Bibliographic and text search options, including publication title, inventor names and companies, or all the complete set of publication, application, and patent case WIPO/PCT numbers and dates are also provided.

USGENE includes an invaluable technical advisor during the development of USGENE up until its launch on STN and continues to provide excellent support and workshops for our customers in the U.S. “We are thrilled that we are the fastest in the industry with updating our data” says Goffman. “Patents that are granted on Tuesday are online at STN by Friday morning U.S. time. Applications that are published on Thursday are available the next morning, so that’s less than 24 hours.”

IN THE MARKETPLACE
Sequence data searching is a critical piece of the research that drives several major industries. It is an essential element to any type of research in biotechnology today. “The need to conduct a thorough patent sequence search is of great significance in three areas,” according to Austin. “Biotechnology intellectual property in general, the science of genetics and bioinformatics because of the large volume of unique scientific information found in patents, and finally, the software of bioinformatics. However, patent sequence data represents a unique IT challenge: Users typically need to be able to search in a scientific way, but for legal purposes. The tools and databases they use must meet both requirements.”

In the pharmaceutical industry, sequence data is critical to developing new drugs and therapies. In the field of biotechnology, it is very common for patent applications to disclose nucleic acid and amino acid sequences. This is important in the hardware and software of genetics research. For example one is the development of biochips to detect certain genetic traits. In agriculture, large chemical companies are constantly developing genetically modified plants and seed varieties in the quest for sustainability and environmentally sound practices. Disease resistance, pesticide resistance, and draft environment resistance are areas of concern and form the basis for large investments in agricultural research and development.

CUSTOMER PERSPECTIVE
USGENE user James Coburn is president and CEO of Harbor Consulting IP Services, Inc. (http://seqidno.com), an outsourcing provider serving law firms and patent attorneys. Coburn and his staff review patent applications to identify all relevant DNA and amino acid sequences, and prepare a valid sequence listing that meets U.S. and World Intellectual Property Organization (WIPO) requirements. Launched in 1995 as a general patent search firm, specializing in sequence searching was a logical extension of their business as Patent Information Service. Prior to the launch of USGENE, Coburn was also working around the gap in sequence searching of U.S. patents.

“One of the key things missing for our business was a straight route to the USPTO database,” said Coburn. “Nobody was providing access to PSIPS and the huge listings that resided there. Some of our clients only wanted U.S. sequences and there was just no way to tell the full story.”

As principal of Harbor Consulting IP Services, Coburn attended training sessions offered by STN, and became yet another voice in Austin’s courses expressing the need for a product such as USGENE. Once development was underway, Coburn actually became a beta tester for USGENE and today is a satisfied customer. He and Goffman were introduced recently at the SequenceBase-sponsored PIUG 2008 Boston Biotechnology Meeting (www.piug.org/Biotech/2008/PIUG/bioMeet.pdf). “It was great to meet the one guy who created this product,” Coburn commented. “USGENE has really helped our business grow.”

DABBING IN CURRENT DEBATES
Taking a large step back to view the complex current debates that are affected by genetics research, the “Aha!” factor is huge. Consider the recent history of research into Alzheimer’s disease, cancer, Parkinson’s disease, and others. Consider the debate on the patenting of the human genome, where researchers had to resist the legal claim of “owning” a sheep? Contentions in bioethics abound, and with good reason, as so much is at stake in the quest for new discoveries.

The patenting of genetic organisms began only 25 years ago, with the discovery of human genetic material. In 1985, the U.S. Supreme Court has begun to review more patent cases and has indicated that, in a variety of fields, the USPTO and Federal Circuit have incorrectly interpreted patent law by granting the patent to a sequence that is not patentable. “One of the key things missing for our business was a straight route to the USPTO database,” said Coburn. “Nobody was providing access to PSIPS and the huge listings that resided there. Some of our clients only wanted U.S. sequences and there was just no way to tell the full story.”

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THE LAUNCH ON STN
In July 2007, 18 months after the creative process began, USGENE launched as an official database on STN International. Throughout the launch process, Goffman and Austin maintained a constant presence at FIZ Karlsruhe and found it was a natural fit to work together. Sample data exchanges and testing took place behind the scenes. When the database was ready to launch, a joint press release was issued by FIZ Karlsruhe and SequenceBase (www.international.com/archive/pdffiles/press releasews/2007/sequence-new db_en.html).

“The need to go to STN was pretty clear—if you are a sequence searcher, that is where you go, as they hosted all the relevant content already assembled. I was able to offer them a database that would complement—not compete with—their current offerings,” Goffman commented.

STN describes the addition of USGENE as “a major enhancement to patent searching on STN, where it features the same powerful database behind the search engine that is available in DGEM and PCTGEN.”

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Suzanne Sabroski

(ssabroski@hughes.net) is news editor for ONLINE magazine, a communications consultant with Chris Olson & Associates, and an affiliate analyst with Outsell, Inc. She has been in the freelance information business since 1995.

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