Chemical Structure Association Trust

NEWSLETTER

Spring 2004 Issue 6

Welcome to the new CSA Trust Newsletter. Thanks to the generosity of all our sponsors and donors, the Newsletter is now freely available to everyone. Please give your colleagues details of the URL so that they can read the Newsletters. Each issue will contain a 'Sponsor's Spotlight' to enable our major sponsors to tell you something about themselves. We are very grateful to CAS for their sponsorship of the Newsletter, and you can read their news on page 9. We would be pleased to receive any contributions for the next Newsletter and your comments on the new design. Our contact details can be found on Page 12 of the Newsletter.

Enjoying drinks at the SCI, Belgrave Square, London, before the CSA Trust Annual Dinner, are Suzanne Pears, Pam Chubb and John Holliday. Thanks to Clive Weeks (in the background) for organising the dinner, which was once again a successful and enjoyable event, attended by Trustees and colleagues.

Report from the Chair

The merger of CSAT and CSA was completed in 2003, including the merger of accounts. Newly created subcommittees under the active guidance of their Chairs carried out their work successfully. Small groups of Trustees met at three meetings in 2003: at the Spring and Fall ACS Meetings in New Orleans and New York, respectively, and during the International Chemical Information Conference in Nîmes. Communication between all Trustees was greatly facilitated by using the newly established Yahoo groups facility. This facility was also used for the first successful electronic Trust meeting. The website (http://csa-trust.org) was moved to Sheffield and re-designed. Starting in 2004 the Newsletter sporting a new look will be available for free on the website to enhance publicity of the Trust's activities.

During the year the Trust was involved in co-organising several joint meetings with other organisations. Bryan Vickery organised a very successful CINF/CSA Trust symposium entitled 'XML in Chemistry' at the 225th National Meeting of ACS in New Orleans. The next joint meeting will take place at the 2004 ACS Spring meeting in Anaheim with the topic 'Collaboratories, Virtual Laboratories and Grid Computing'. Wendy Warr and Guenter Grethe will be co-organisers. The Trust also continued collaboration with the MGMS on the annual Sheffield meeting and co-organised with RSC-CIG a one-day course on Chemical Information. Support of these educational activities will continue in 2004.

One $1,000 CSA Trust grant selected from seven applications was awarded to Prashant S. Kharkar for attending a conference on 'Bioactive Discovery in the New Millenium' in Lorne, Australia (see his report on Page 6). Press releases to solicit applications for the 2004 CSA Trust Grants were circulated widely on appropriate listservers and in Trust publications. A student bursary was given to Phil Evans (Ph.D student at Portsmouth University) to attend a short course on Chemoinformatics at Sheffield University. The Trust continued to provide financial support for the ExemplarChem 2003 competition (see Page 4).

Though the financial status of the Trust is stable, fundraising has high priority in 2004. Funds are required to sufficiently cover CSAT grants and bursaries in accordance with the Trust's educational responsibilities. A set of recommended donations has been published in the new brochure and on the website.

For her continued commitment to the Trust, her efforts to bring about the successful merger, and her dedicated work to increase publicity of the Trust, Janet Ash (above with Guenter Grethe) was awarded the 2003 Ernie Hyde Award.

John Buckingham resigned from the Board of Trustees. The Trust thanks John for his long loyalty to and his work for the Trust. To fill two vacancies Ms Sarah Cooney (SCI) and Professor Xiaoxia Li (Institute of Process Engineering, Beijing) were unanimously elected to the Board for three-year terms.

The Chair would like to thank all Trustees, particularly those active in Subcommittees, for their dedication and hard work. I look forward to a very successful 2004.

The AGM Minutes are available on the website.

Guenter Grethe
Chair, CSA Trust

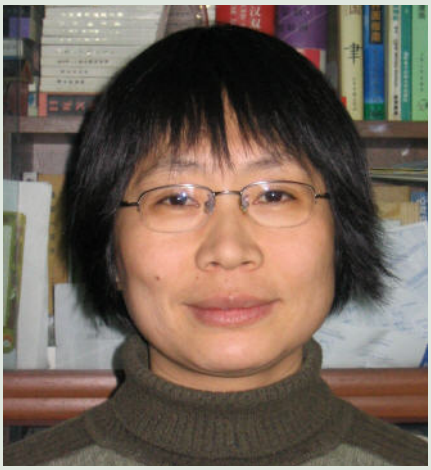
Future of ChemWeb

Speculation in the press and on the internet about the future of ChemWeb seems to be confirmed by a recent report that suggests that Elsevier intends to close down three portals – BioMedNet, Chem Web, and ElsevierEngineering.com. According to the publication *Research International*, 'These sites offer a range of free content, such as news and abstracts, to registered users. BioMedNet alone has more than a million users around the world.'

According to the report, Elsevier's statement noted that "During our six year association with virtual community portals in the science and technology arena, Elsevier has tried a number of different business models in an attempt to make these portals self-sustaining, with only limited success. Latterly, their principal role has been as a tool to market our products to their respective discipline areas. Having carefully reviewed the options available to us, we have decided that future marketing investments will be made in other areas and that investments in the science and technology portals BioMedNet, Chem Web and ElsevierEngineering.com will be withdrawn. The portals are also home to paid-for products and we are currently evaluating how to integrate essential services that are hosted on our portals within alternative solutions. No further investment in science and technology portals is planned, though they will continue to operate as normal until the integration work is completed."

Research International's website is at www.researchinformation.info.

Our New Trustees



Xiaoxia Li

Professor Xiaoxia Li (above) graduated from the Department of Chemical Engineering, Tsinghua University in 1985, and obtained her MS degree in 1988 at the Laboratory of Computer Chemistry (LCC), Chinese Academy of Sciences. Since 1998, she has worked at the Institute of Process Engineering (formerly Institute of Chemical Metallurgy), Chinese Academy of Sciences. Her work is on physical property databases and an estimation program for organic compounds.

Since 1999, she has been Project Director of the Asian Chemical Information Network (ChIN), Federation of Asian Chemical Societies (FACS), and Vice Chairman of the Committee of Computer Chemistry, Chinese Chemical Society since 2000.

Her current research interests include chemical resource discovery on the internet and internet-based information systems. She is an Editorial Board member of the Chinese journal 'Journal of Computer and Applied Chemistry', and also the project director of the Chemistry Portal (http://www.chinweb.com), Chinese National Science Digital Library (http://www.csdl.ac.cn).

Sarah Cooney

Sarah Cooney (right) has been Head of Peer-Reviewed Publications at the Society of Chemical Industry (www.soci.org) since August 2002. She looks after SCI's four peer-reviewed journals, manages the relationship with their publishing partner (John Wiley & Sons), and contributes to longer-term strategy discussions for the society. She was first attracted to SCI by its tagline, 'where science meets business', and believes there is great value in having a forum for this kind of networking.

She hails from Canada, where she completed BSc and MSc degrees in genetics at the University of Toronto. While working in research she examined the genetic basis of how plants respond to hormones, and her thesis work has been published in *Genetics* and *Science*. Uncertain about starting a PhD, Sarah investigated science publishing, and now finds herself with seven years' experience in the industry. She worked for the Current Science Group, Elsevier Science, Cell Press and Nature before joining SCI.

Moving from Canada to London has made travelling a much easier prospect. Since arriving in the big smoke in 1997 she has visited much of western Europe and enjoyed three months in India and Nepal.

When she is not busy in SCI's secretariat, Sarah can usually be found on stage–singing in choirs, opera, recitals and sometimes acting in theatre productions.

People and Places

After almost 20 years at Springer-Verlag Berlin Heidelberg New York, Arnoud de Kemp is to pursue new projects. As Deputy Member of the Board he held global responsibility for marketing and sales of both print products and electronic information services. De Kemp has become internationally renowned for his pioneering work in electronic publishing, especially in the area of STM publishing. At Springer he created the electronic media department in an early stage. Having participated in a variety of electronic information projects, he was also responsible for the creation of SpringerLink, one of the first online fulltext archives, which is now one of the best-known and used services for scientific information worldwide.

Gary Wiggins now has a full-time position as Director, Programs in Bioinformatics and Chemical Informatics, in the School of Informatics at Indiana University and has relinquished all responsibilities for the Indiana University Chemistry Library. Roger Beckman has been named the Interim Head of the Chemistry Library.

Former director of ISI's European office Tony Cawkell died at the end of 2003 (see tribute by Harry Collier on Page 4).
Dr David E. Clark, Director of Computer-Aided Drug Design at Argenta Discovery, has been awarded the Corwin Hansch Award for his work on QSAR.

David Spender (dspender@ventadiscovery.com) has started up Venta Discovery to sell software on behalf of companies that have exciting and interesting products which they want to sell to the pharmaceutical industry. Treweren Consultants (Scientific Director, Keith Davies, Keith.Davies@treweren.com) has announced an agency agreement with Venta Discovery to resell the THINK software in Europe and North America.

Yale University chemistry professor and computational methods pioneer William L. Jorgensen has been named editor of the American Chemical Society's *Journal of Chemical Information & Computer Sciences (JCICS)*. Jorgensen plans to split *JCICS* into a new journal that keeps *JCICS*'s original focus on chemical informatics and another that anchors reports in computational chemistry. The new journals, scheduled for launch in 2005, are tentatively titled the *Journal of Chemical Information & Modeling* and the *Journal of Chemical Theory & Computation*; Jorgensen will edit both, and will resign as editor of Wiley's *Journal of Computational Chemistry*.

Tony Trippe is now at CAS.

ExemplarChem 2003

An appreciative and enthusiastic audience of young chemists (the author exempts himself from this description), chemistry lecturers, sponsors and organisers gathered at the English Heritage Lecture Theatre in London on October 31 2003 for the ExemplarChem 2003 Prize Winners Meeting.

ExemplarChem is an internet exhibition of exemplary chemistry. The project began in 2000 after Henry Rzepa from Imperial College approached the RSC with the idea of an 'Internet Exhibition'. The website was set up and the RSC began to recruit chemistry departments to participate in the Exhibition and sponsors to back the project. Over 70 departments have now registered an interest in the project.

The judging panel base their decisions on good science content, presentation and use of the project within the internet. The seven prizes awarded for ExemplarChem 2003 went to seven different universities and an overall winner (Tony Dixon, University of Leeds, for his presentation on 'Capillary Electrophoresis') was also awarded a prize of £1,000.

The number of generous sponsors continues to grow and for 2003 comprised BNFL, CAS, CSA Trust, Evotec, GlaxoSmith Kline, LTSN, Pfizer, Thomson Scientific and the RSC.

The ExemplarChem Prize Winners Meeting commenced with a number of very interesting papers, serving to 'entertain and educate' the audience before the main event of the prize giving took place later in the afternoon.

The speakers and their topics were:

- Karl Harrison (Oxford University), 'Chemistry Collaboration using computers, from Grids to Students'. Karl outlined the potential of Grid computing on an enormous scale with examples of Grid of Supercomputers (e.g. UK e-Science project) and Grid of desktop computers (SETI@home)
- Barry Dunne (CAS), 'Technology Changes in an Information World'. Barry described CAS' experiences especially in the area of the interaction of technology and content.
- James McNish (RSC), 'Science in the Media. You have to be joking!' James explained why one would want/need to talk to the media and the type of audience that you hope to reach.
- Richard Clegg (BNFL) 'The Chemist in BNFL' Richard gave us an insight into what BNFL do and who they are.
- Kathy Sykes (Bristol University) 'Getting into the Media'. This was a multimedia presentation on Kathy's experiences in the media.

At the Awards ceremony, I was pleased to present, on behalf of the CSA Trust, an award to Helena Alsbury and Andrew Robertson (Department of Chemical Engineering, Loughborough University) for their presentation on 'The production and evaluation of photocatalytic titanium dioxide coatings on glass tubes'. A picture of the prize winners, unfortunately including my good self, appears above for your delight.

This most enjoyable day was rounded off with a wine reception.

Peter Nichols

Tony Cawkell: a personal reminiscence

I first met Tony in December 1971, in the ISI offices which were then in Uxbridge. I had applied for a job with ISI, and Tony interviewed me. Spotting on my CV that I claimed a "good knowledge of the French language", Tony announced that the interview would from then on be conducted in French. This was my first glimpse that he was not simply just the genial gentleman he so often resembled, and my first experience that he always did everything thoroughly; even conducting a personnel interview.

My French must have pleased him, since I was given the job and I joined ISI. For the next 18 months or so, Tony was my boss. I discovered he had a highly alert and intelligent mind, and that he always wanted to understand fully the position of the other person. Whenever I came to him with a request, I was always given a full and fair hearing. Tony was never a 'boss'; he was more a leader, and the ISI team in Uxbridge had a great respect for him. More an information scientist than a businessman, he nevertheless headed ISI's European office very successfully for a few years, probably more as a personal favour to his friend Gene Garfield than because he wanted to head a company. The only time I saw him really angry, fair-minded man that he was, was when he discovered he had been tricked into signing a never-ending photocopier rental contract. His rage at his own carelessness (and the immorality of the photocopier company) was truly towering.

I remember him as fair-minded, intolerant of sloppiness, and a good friend. With his wife Kathleen, he made the small ISI team of the early 1970s into an efficient business force that established ISI's European presence for many solid decades. I remember him with great affection and respect.

Harry Collier

5th AFMC International Medicinal Chemistry Symposium, Kyoto, Japan and 10th Asian Chemical Congress/8th Eurasia Congress on Chemical Sciences, Hanoi, Vietnam

Background and Purpose

The biannual AIMECS conferences are organised by the Asian Federation for Medicinal Chemistry (AFMC), and are the major medicinal chemistry congresses in the Asia/Pacific region. The Asian Chemical Congresses are also held every two years by the Federation of Asian Chemical Societies (FACS, http://www.facs-as.org). AIMECS03 took place in October 2003 at the Kyoto Park Hotel, near Kyoto's beautiful parks and temples (see photo). There were more than 30 high quality invited speakers, about 250 posters and a large trade display. The 10th ACC/8th Eurasia Conference was held at the Daewoo Hotel. Each conference attracted approximately 800 participants. Both conferences featured an impressive line-up of plenary and keynote speakers, including several Nobel Laureates:

- Peter Doherty (Melbourne University) *Viruses and Killer T Cells*
- Hatsuo Aoki (Fujitsawa Pharmaceuticals) *Discovery and Development of Drugs on a Global Basis*
- Robert Armstrong (Lilly) *The Chemistry of Drug Discovery: Short and Long Term Strategies*
- Nobutaka Hirokawa (Tokyo University) *Mechamism of Intracellular Transport and Kinesin Superfamily Proteins*
- Hans Junginger (Leiden University) *Drug Delivery – What will be the Future?*
- Robert Huber (Max Planck) *Molecular Machines for Protein Degradation*
- Ryoji Nyori (Nagoya University) *Asymmetric Catalysis: Science and Opportunities*
- Jean-Marie Lehn (University of Strasbourg) *Steps Towards Complex Matter: Programmed and Adaptive Supramolecular Systems*
- Yuan T. Lee (Academia Sinica Taiwan) *Molecular Beam Studies of Chemical Reaction Dynamics*.

The papers were organised into parallel streams focused around one of the FACS Projects (medicinal chemistry and natural products, chemical information, environmental chemistry, chemical education, green chemistry, organic chemistry). There was very high representation from major pharmaceutical and biotechnology companies among the delegates.

Highlights

The papers were very diverse within the chemical, pharmaceutical and biotechnology spheres. Aoki discussed reasons why drugs fail. Some 450,000 hits translated into only 35 leads. Many new drugs are only incremental improvements on older ones. There is a need for multidimensional lead optimisation, where ADMET and model organism results are integrated with HTS data. Many new Fujitsawa products are derived from natural products which do not obey the 'rule-of-five'. He also identified interactions between the company and outside researchers as being very important. Armstrong pointed out the crisis facing pharma companies with reduced NCE output and fewer drugs to market. New tools are needed to extract more information from the large amount of screening and genomic data being generated. He also identified a need for a more 'complex', systems-oriented approach to lead discovery and development. The paucity of data to build and validate models has an impact on the research. Consequently, Lilly are developing a toolkit which will allow people outside the company to 'road test' new information and modelling tools on specific in-house data sets. Junginger spoke on novel drug delivery systems using polymeric systems such as superporous hydrogels and modified chitosans. He described novel transdermal iontopheresis technologies for metered release of drugs such as apomorphine and insulin. Huber spoke on the importance of 'unfoldases' in the degradation of proteins, and the reasons why some misfolded proteins responsible for diseases are resistant to these enzymes. He described some elegant experiments that show how control of crystal humidity in structural biology beam lines can dramatically affect the diffraction from the protein crystal. Professor Sir Tom Blundell (Cambridge/Astex) spoke about the work Astex are doing in 'SAR by crystallography'. They essentially carry out a modified Ellman approach where small molecular fragments are soaked into protein crystals, the binding sites discovered by x-ray crystallography, and the fragments joined up into molecules to generate a very good hit rate. Hans Bohm discussed the modelling approaches used by Roche, pointing out that the hit rate for HTS is about 4%, that for focused libraries about 20%, and that for 3D structure-based approaches about 30%.

Conclusion

The next conferences are both in Korea in 2005. They are well worth attending by scientists from Europe and the US, who could contribute strongly to the program and, in return, make very useful contacts with colleagues working in the powerhouse nations of Asia.

David Winkler

Report from CSA Trust Grant recipient

Thanks to a Chemical Structure Association Trust grant I was able to attend 'Bioactive Discovery in the New Millennium', Lorne, Victoria, Australia in February 2003. I presented 'The Docking Analysis of 5-Deazapteridine Inhibitors of *Mycobacterium avium* complex (MAC) Dihydrofolate reductase (DHFR)'. The conference was attended by eminent scientists in the field of molecular modelling and computer-aided drug design, such as Professor Graham Richards, Oxford, UK, Peter C. Doherty, Australia's most recent Nobel Laureate, Professor Martyn Ford, University of Portsmouth, UK, Dr Richard Cramer, creator of CoMFA, Tripos, Inc., USA, and Professor Tim Clarke, Germany.

My research work deals with the design of MAC DHFR inhibitors. *Mycobacterium avium* complex is a group of microorganisms, which causes infections in immunocompromised states. MAC produces the most common systemic bacterial infections in patients with advanced AIDS. About 60–70 % of patients with advanced AIDS are infected with MAC. These microbes are resistant to most antimycobacterial agents and antibiotics. They can survive at extremes of pH and temperature. There is an urgent need to develop antimycobacterial agents that are active against these microorganisms. Dihydrofolate reductase (DHFR), an enzyme that catalyses the conversion of dihydrofolic acid to tetrahydrofolic acid, was selected as a target.

Significant progress was made in the development of MAC DHFR inhibitors in the late 1990s. A class of 2,4-diamino-5-deazapteridine inhibitors of MAC DHFR was reported recently. Pharmacophoric models have been developed for this class of inhibitors. We have constructed a homology model of MAC DHFR using *Mycobacterium tuberculosis* (Mtb) DHFR as a template.[1] The necessary condition for DHFR inhibitors is their selectivity for the microbial enzyme as a similar enzyme is present in the host. The inhibitor must act selectively to minimise side effects. Since we developed the 3D model of the enzyme, we thought of studying the selectivity for the microbial DHFR. Both the MAC and human DHFR structures were used for the selectivity analysis. Seven 2,4-diamino-5-deazapteridine inhibitors of MAC DHFR were selected. Each molecule was docked into the active sites of the MAC and human enzymes and factors responsible for the binding studies were identified. We used Molecular Operating Environment (MOE) 2002.03 molecular modelling software for docking studies. The information obtained is being used for the design of selective inhibitors of MAC DHFR.

The work presented at the Lorne Conference was appreciated by eminent researchers in the DHFR field such as Dr Jill Gready, ANU, Australia and Professor Graham Richards, Oxford, UK. We have implemented their suggestions. The most important requirement is the determination of these NCEs for their MAC DHFR inhibitory activity, and in this area we would appreciate help from the scientific community.

I thank the CSA Trust for the Foreign Travel Grant.

Prashant S. Kharkar

Prashant S. Kharkar is a Senior Research Fellow, Pharmaceutical Division, at the Institute of Chemical Technology, University of Mumbai, Matunga, Mumbai – 400019.

[1] Kharkar, P. S.; Kulkarni, V. M. A Proposed Model of *Mycobacterium avium* complex Dihydrofolate reductase and its Utility for Drug Design. *Organic and Biomolecular Chemistry,* **2003**, *1*, 1313 – 1322

CSA Trust Grants for 2005

The Trust offers grants for the career development of young researchers who have demonstrated excellence in their education, research or development activities related to the systems and methods used to store, process and retrieve information on chemical structures, reactions and compounds. Grants will be awarded up to a maximum of $1,000 each. Grants are awarded for specific purposes, and within one year each grantee has to write a brief report detailing how the funds were allocated.

Who is eligible?

Eligible applicants are age 35 or younger, who have demonstrated excellence in their chemical information related research and whose careers will potentially have a positive impact on the utility of chemical information relevant to chemical structures, reactions and compounds. Additional bursaries may be made at the Trust's discretion. All requests must follow the application procedures noted below and will be judged by the same criteria.

What activities are eligible?

Grants may be awarded to acquire the tools necessary to support research activities, for travel to collaborate with research groups, to attend a relevant conference, to gain access to special computational facilities, or to acquire unique research techniques in support of one's research.

Application requirements

Applications must include the following:

1. A letter that details the work upon which the Grant application is to be evaluated and details on research recently completed by the applicant;
2. The amount being requested and the details regarding the purpose (e.g. cost of equipment, travel expenses if the request is for financial support of meeting attendance). The relevance of the above-stated purpose to the Trust's objectives and the clarity of this statement are essential in the evaluation of the application;
3. A brief biographical sketch, including a statement of academic qualifications;
4. Two reference letters in support of the application.

Additional materials may be supplied only if relevant and if the information is not already included in items 1–4.

Deadline for applications

The deadline for applications is October 15, 2004. Successful applicants will be notified by December 17, 2004.

Address for submission

Four copies of the application documentation should be forwarded to:
Bonnie Lawlor, CSA Trust Grant Committee Chair, 276 Upper Gulph Road, Radnor, PA 19087, USA.
E-mail submissions, if complete, may be forwarded to the Grant Committee at chescot@aol.com.

Joint CSA Trust/RSC–CIG Training Day

The joint Autumn Meeting of the Trust and the RSC–CIG on 30th October 2003 was organised as a Training Day, to give an overview of chemical information products. ***Yvonne McCormick,*** *Regional Marketing Manager, SII Ltd for CAS in Europe, reports on the day.*

There was a good turnout of around 20 representatives from industry, academia and information providers. The meeting began with a presentation from Dr Barry Dunne, CAS, on the CASREACT reaction database from CAS. CASREACT covers organic chemistry reactions from 1907 to date including patent and journal information. Barry covered in some detail the selection process for this database (stereoselective reactions will be covered, whereas polymers will not). Barry also spent time on how CAS indexes reaction steps and stages, how reaction sites are mapped and how controlled indexing is added to reactions. We also learned how to run a reaction search, to narrow or broaden a search as necessary (e.g. use functional group searching or map reaction sites) and when to use the Registry file instead – for example, after finding no answers in CASREACT.

Next, Helen Cooke, UMIST, gave a very interesting talk on Crossfire and its implementation at the University. The advantages and disadvantages of Crossfire were discussed (for example, currency is generally no better than 6 months). However, Crossfire does cover chemical information back to 1771. Helen also outlined the relatively new free text search option which may be useful for searching several fields simultaneously. There was some discussion on whether the Macintosh version of Crossfire would be supported in future and this was a concern for some academics. The challenges of setting up training sessions for Crossfire users at UMIST were discussed.

Val Gillet, Sheffield University, updated the audience on developments in chemoinformatics education and training at the Department of Information Studies. Val took us through the history of chemoinformatics from the early days of Chemical Abstracts, through the first substructure searching algorithms, QSAR right up to more recent *de novo* drug design. Current challenges include toxicity prediction, improved methods for analysis of high throughput screening (HTS) data and improved methods for virtual screening. Sheffield has active research programmes in many of these areas and has recently begun to run an MSc course in chemoinformatics. The course covers programming, information systems modelling, database design and more chemical topics such as representation and searching of chemical structures and techniques for design of a drug substance. Many external speakers from information providers and other universities assist in the presentation of this course. Val also provided a few figures on employment destinations of the first two years of the course and it certainly looked impressive.

Suzanne Pears, AstraZeneca, got us all thinking in her presentation on training for Chemical Information. She discussed the large number of information systems available to the average scientist and how you can target training for either end users or information professionals. Not everyone is good at training and we all have different learning styles. Some learn by doing, others like to read the manual and most people like to leave a training session with some handouts. Some of the academic representatives mentioned how attending training sessions was an assessed part of some of their programmes. It had certainly improved attendance. For industry, training can be part of the performance plan for users. It was generally agreed that attendance at some sort of training improves the user's ability to get maximum benefit from an information system.

Finally, Jan Davies, RSC, reminded us all of the MARPAT file on STN which is the CAS-produced file covering Markush or so-called 'prophetic' structures in patent documents. Jan summarised the coverage of this file and outlined tips and tricks for balancing recall versus precision in MARPAT. We also learned when a compound will appear in the CA file (if it has been explicitly defined) versus in MARPAT (the structure has not been explicitly defined). MARPAT uses different vocabulary to other STN files (e.g. matching structures by ATOM, CLASS or ANY depending on the level of precision required). While this file contains a vast amount of information from the patent literature not readily available elsewhere, it is not a complicated database and should be on the list of sources used by everyone interested in patent searches.

Thanks go to the organising committee at the CIG group and the CSA Trust. Those who attended found the session useful and most said they would attend a similar session in the future.The PowerPoint presentations used in the talks are available at: http://www.cds3.dl.ac.uk/cds/CIG/cig.html#Future

RSC Journals Archive

The RSC Journals Archive project has been completed and all RSC journals published between 1841 and 1996 have been digitised. The backfile contains approximately 195,000 articles in 1.2 million pages, and is available for purchase or lease. Please contact Lesley Maw (mawl@rsc.org) for information, or visit the website at www.rsc.org/archive.

Chemical Science

Launched in January 2004, *Chemical Science* is an exciting new supplement from the RSC. It draws together coverage from all RSC publications, to provide a 'snapshot' of the latest developments across the chemical sciences.

- Research highlights – showcasing newsworthy articles, as well as the most significant scientific advances
- Publication news – with the latest developments from RSC publications and details of new books.

Published monthly, *Chemical Science* is freely available online and as a free supplement in the print issues of selected RSC journals. A separately issued print subscription is also available. The website can be found at: www.rsc.org/chemicalscience.

45th Annual General Meeting of the P-D-R 2003

Information and Knowledge Management in the International Pharmaceutical Industry

The Pharma Documentation Ring (P-D-R) held its 45th Annual General Meeting (AGM) in Thame, near Oxford, UK in September 2003. The P-D-R is an association whose members represent the scientific information departments of the leading international R&D-based pharmaceutical corporations. The 22 corporate members account for approximately 60% of the total global turnover of ethical drugs (approximately $430 billion); by far the majority of top 20 global pharmaceutical companies are P-D-R members.

38 delegates from 11 different countries in Europe and North America attended this year's meeting, which was ably hosted by Wyeth Research.

Sandy Mullen (Bayer AG), President of the P-D-R, reported that the P-D-R website (www.p-d-r.com), the main platform for P-D-R activities, had been restructured and further enhanced during the year. The publicly accessible Pharma Business Information section now contained a wide range of useful material kindly provided by MarketLetter, PJB Publications, Prous, Thomson Current Patents and Wood Mackenzie. Member company Press Releases continued to be reported on the site via an effective daily webspider service from Reg123. The 'members only' area of the website had also been enhanced.

Major highlights of the meeting were the discussions on two strategic topics that had previously been identified as being of paramount interest to P-D-R members:

- The Business Impact of Information Services
- Customised Integration of Different Data Sources.

During the 'Business Impact of Information Services' session, Joanne Lustig, a consultant with Outsell, discussed Outsell's approach to quantifying the business benefits from information services. The methodology involved identifying the financial benefits that could be attributed to each information service provided. During the same session, a speaker from Novartis discussed the way that Novartis was using key performance indicators (KPIs) and balanced scorecards to assess the impact of the different information services available within the company.

During the second topic session, representatives from different P-D-R companies gave six short presentations. The topics addressed different aspects of data integration including intranet integration of data sources, adding value to a commercial alerting service by incorporating user annotations, linking to electronic journal articles, and the use of a taxonomy and search engines to classify and search multiple data sources. In the final part of the session, the results of a P-D-R survey of the vision of the future integrated world in 2010 were presented.

Other important developments that were discussed during the meeting included update reports on:

- The discussions with publishers on the use of electronic articles for marketing purposes
- The Counter Project, which is concerned with the capture of electronic journal usage statistics by publishers
- The discussions within Europe on the certification of patent information scientists
- The activities of other national and international information groups.

A hot topic each year is that of the Company Reports' sessions. Most members reported that during the year they had continued to increase their electronic journal holdings at the expense of hardcopy subscriptions. A number stated that they intended to transfer completely to electronic journals in the short to medium term and had set an ambitious target date (2003–2005) for completion of this changeover. Some reported that their libraries had already been downsized and former shelf space re-utilised for other purposes. Several representatives expressed considerable concern at the large price increases being proposed by a small minority of publishers for their electronic journals in 2004.

The Company Reports' sessions also confirmed that Intranet portals continue to be the primary means of delivering literature and information services to the end users within P-D-R companies. A wide range of different commercial search engines have been incorporated into the portals and some companies have combined these with taxonomy products, such as those available from Factiva and Skila. Several companies reported that they had implemented improved electronic systems for handling requests for literature articles from their customers.

Several companies reported that they had recruited additional patent information searchers to handle the increased demands for this challenging work. Two companies reported that they had begun to implement electronic laboratory notebook systems to improve the opportunities for data capture and research productivity.

As the terms of office of all the current P-D-R Board members expired at the end of 2003, a Board Election was held for the period 2004–2005. Henning Nielsen (Novo Nordisk) was elected President (from January 1 2004). Sandy Mullen (Bayer AG) and David McNeillie (AstraZeneca) were elected Vice-Presidents and Ernst Mernke (Roche Diagnostics) was elected secretary.

Sandy Mullen reminded representatives of the sad death of Jane Whittall, a popular and active member of the P-D-R, who had organised the P-D-R AGM in 2003. He announced that the P-D-R Board had decided to commission a silver salver to be engraved in Jane's memory, following discussions with GlaxoSmithKline and Jane's family. The salver – the P-D-R Jane Whittall Award for Excellence – would be awarded annually to the P-D-R member who had contributed most to P-D-R activities in the previous 12 months.

In summary, it was a highly successful and interactive meeting and a survey conducted amongst attendees indicated there had been, once again, a very high level of relevant and quality presentations by P-D-R members and invited speakers. The meeting continues to be regarded by most participants as the major annual event of its type for the international pharmaceutical industry.

The 46th P-D-R AGM will be held in Bürgenstock, Switzerland from 5th–8th October 2004 and will be hosted by F Hoffmann-La Roche Ltd.

The PDR website can be found at http://www.p-d-r.com.

SPONSOR'S SPOTLIGHT

CAS and SciFinder Keep Getting Better

Many scientists say SciFinder, the desktop research tool from CAS, has made them more productive and creative in their work. What was true before is even more so with SciFinder's latest enhancements.

SciFinder connects researchers from their computers to CAS databases with an easy-to-use graphical interface that features icons you can click to 'Explore' scientific literature and patents, 'Browse' the tables of contents of your favourite journals, and monitor the latest research developments with your own 'Keep Me Posted' profile, reporting the latest publications on topics or substances of interest.

Of special interest to chemical structure enthusiasts, SciFinder permits easy exploration of 23 million organic and inorganic substances in the CAS Registry, the world's largest collection of substances, back to 1957. These can be searched by structure using unique tools developed by CAS, in addition to common or systematic names.

SciFinder recently introduced an impressive set of new features including

- New analysis tools for stereochemistry, especially helpful for chemists using SciFinder's Substructure Search Module
- Experimental properties for more than 1 million compounds; values include boiling point, density, melting point, optical rotatory power, and refractive index
- New predicted values have been added for more than 14.4 million substances for Bioconcentration Factor, Boiling Point, Enthalpy of Vaporisation, Flash Point, Organic Carbon Adsorption Coefficient (K_{oc}), and Vapour Pressure
- More reactions: reactions are now available from 1840 to present, including the addition of those from the Core Reactions database of the French organisation INPI (Institut National de la Propriete Industrielle), 1840–1985.

CAS has also expanded its collection of database records back in time. With the addition of more than 16 million index entries for older literature, chemical substances and subjects are now searchable by name back to the first issues of CA. With the completion of the project, chemical substance indexing also will be searchable to 1907 with CAS Registry Numbers as search terms.

In its SciFinder 2004 Edition, the latest release, CAS unveiled unique and powerful new capabilities for chemical reaction exploration and analysis. These enhancements are integrated with CAS' weekly updated reaction database now containing seven million reactions, making SciFinder the essential synthesis research tool for the chemical and pharmaceutical industries. The new SciFinder version became recently available to CAS customers worldwide.

SciFinder's new 'Analyze Reactions' tool lets scientists profile reactions in terms of relevant categories, such as the catalyst used, solvent involved, the number of reaction steps or product yields. In record time, researchers can find reactions and increase their productivity.

To learn more about CAS and SciFinder, send a message to help@cas.org or visit the website at http://www.cas.org/SCIFINDER/scicover2.html.

Focus on Products

ACD/MedChem Advisor

ACD/MedChem Advisor uses ACD/Labs' prediction algorithms to enable medicinal chemists to calculate accurately a multitude of physicochemical properties for their lead compound, such as logD, pKa, logP, and aqueous solubility.

ACD/MedChem Advisor contains four new databases that act as a brainstorming engine to identify the substituents or heterocycles that might favourably modify a compound's physical properties. Containing compilations of popular heterocycles, as well as neutral, acidic, and basic organic substituents, these databases can be queried on a number of search parameters to identify similar topology, synthetic feasibility, and molecular stability. Each database record also indicates whether the substituent has appeared in a clinically evaluated compound. For further information, visit www.acdlabs.com

MDL Select

MDL Information Systems, Inc. (MDL) has developed MDL Select, which is a flexible suite of informatics and experiment management tools that enables smaller or start-up biopharma companies to manage the entire discovery workflow from compound registration through biological screening and reporting.

Based on MDL ISIS and MDL Assay Explorer, MDL Select includes all the informatics infrastructure and experiment management applications needed to register, search, retrieve, visualise, analyse, and report on both chemical and biological data and to manage laboratory workflows. The content and functionality can be tailored to meet specific needs, as MDL Select is available in three packages: biology only, chemistry only, and biology and chemistry together. The pricing for all three packages includes implementation services and end-user training.

Discovery research organisations interested in evaluating MDL Select can request information using the Contact form available at www.mdl.com.

EVENTS

March		
4–5	MDL UK Users' Group Meeting, Holborn Hotel, 50–60 Southampton Row, London , UK	http://www.mdl.com/company/events/user_conferences/2004/ukugm04/index.jsp
7–10	IPI-ConfEx, International Patent Information Conference and Exposition, Lisbon, Portugal	http://www.IPI-ConfEx.com
8–10	2nd AccelrysWorld conference, San Diego, California, USA	E-mail: accelrysworld@accelrys.com http://www.accelrys.com/accelrysworld/
8–10	MDL European Users' Group Meeting, Renacimiento Hotel, Isla De La Cartuja, Seville, Spain	http://www.mdl.com/company/events/user_conferences/2004/eugm04/index.jsp
28 March – April 1	227th ACS National Meeting, Anaheim, California. Includes joint CINF/CSA Trust symposium on 'Collaboratories, Virtual Laboratories and Grid Computing'	E-mail: natlmtgs@acs.org http://www.acs.org/meetings/
April		
18–21	Frontiers in Drug Discovery for Cancer and Neurodegenerative Diseases, Application of Chemistry in Medicine, Chicago, Illinois	E-mail: conted@uic.edu http://www.uic.edu/pharmacy/conted/ddc2004/
21–23	3rd Joint Sheffield Conference on Chemoinformatics. CSA Trust/MGMS, University of Sheffield, Sheffield, UK	http://cisrg.shef.ac.uk/shef2004/
May		
2–6	MDL US User Conference, Westin Copley Place, 10 Huntingdon Avenue, Boston , MA 02116 , USA	E-mail: conference2004@mdl.com or mdl@maritz.com http://www.mdl.com
24–28	Workshop: The Chemical Theatre of Biological Systems, Bozen, Italy	E-mail: mhicks@beilstein-institut.de http://web93.kemhost.de/englisch/1024/veran/index.php3?bild=events
June–July		
27 June – 3 July and 30 June – 3 July	6th Australia–Japan Joint Symposium on Drug Design and Discovery and 9th Molecular Modelling Workshop (MM2004) Sydney, Australia	E-mail: Renate.Griffith@newcastle.edu.au
August		
22–26	228th ACS National Meeting Philadelphia , PA , USA	E-mail: natlmtgs@acs.org http://www.acs.org/meetings/
September		
5–10	Euro QSAR 2004: 15th European Symposium on Quantitative Structure Activity Relationships Harbiye Museum and Congress Center, Istanbul, Turkey	E-mail: armoria@euro-qsar2004.org http://www.euro-qsar2004.org
7–10	Towards Accurate Calculation of Biomolecular Recognition and Reactivity: A conference in honour of Professor Ian Hillier, MGMS 2004 International Meeting, University of Manchester, UK	http://pharmacy.man.ac.uk/rab/mgms/
October		
17–20	The 2004 International Chemical Information Conference and Exhibition, Annecy, France	E-mail: contact@infonortics.com http://www.infonortics.com/chemical/index.htm

3rd Joint Sheffield Conference on Chemoinformatics

CSA Trust/ MGMS

April 21 to 23 2004

University of Sheffield, Sheffield, UK

Registration and further details at http://cisrg.shef.ac.uk/shef2004/

The following companies have kindly agreed to sponsor bursaries for students to attend the conference:

Astrazeneca
Cambridge Crystallographic Data Centre
Hampden Data Services
GlaxoSmithKline

Conference Programme

Ligand-based VS/HTS

Optimization of Ligand-based Virtual Screening Protocols: Enrichments You Can Count On
Andy Good, Bristol-Myers Squibb

Characterization of Pharmacophore Multiplet Fingerprints as Molecular Descriptors
Bob Clark, Tripos

Ligand-based Virtual Screening Using Molecular Fields
Mark Mackey, Cresset Biomolecular Discovery

Application of BCUT Values to Virtual Screening
Uta Lessel, Boehringer Ingelheim

Similarity Searching Employing Surface Fingerprints – Using Spatial Data for Meaningful Feature Selection
Andreas Bender, Unilever Centre

Application of Novel Structural Fingerprints and Bayesian Learning to HTS Data Mining and Screening Prioritization
Rob Brown, SciTegic

Screening Collection Design

Design of a Compound Screening Collection for use in High Throughput Screening
Gavin Harper, GlaxoSmithKline

Pharmaceutical compound bank cleaning: Process
Alan Tinker, AstraZeneca

Overlap Analysis of Compound Collections – Strategies From a Recent Acquisition
Michael Engels, Johnson & Johnson

Model Building/QSAR

Prediction Model Building Based on Classifying Compounds by Structural Features
Kevin Cross, LeadScope

Boxing Clever with CoMFA
James Melville, University of Nottingham

A New Paradigm for Virtual Screening
Martyn Ford, University of Portsmouth

Structure-based Drug Design

Exploring Binding Site Similarity with CavBase: Current Achievements and Future Challenges
Andreas Bergner, Cambridge Crystallographic Data Centre

Complexity Analysis of De Novo Designed Ligands
Krisztina Boda, University of Leeds

A Combinatorial Docking Approach for Dealing with Protonation and Tautomer Ambiguities
Ingo Dramburg, BioSolveIT

Virtual Screening of Low-Molecular Weight Compounds
Richard Taylor, Astex Technology

Finding Cancer Growth Inhibitors Using the Internet
Keith Davies, Treweren Consultants Ltd

Data Mining

The Use of Rapid 2D Design Methods Within a Design-to-Delivery Software Suite
Susan Boyd, Scynexis

Better Clusters Faster
John Barnard, Barnard Chemical Information

Clustering Ambiguity: An Overview
John MacCuish, Mesa Analytics & Computing

Evolving Median Molecules on the Pareto Frontier
Nathan Brown, Avantium Technologies

Automated Generation of Structural Molecular Formulae Under User-Defined Constraints
Matthias Rarey, University of Hamburg

Automated Decision Support for the Screening Process
Christos Nicolaou, Bioreason

Identification of Relevant Sub-structures in Screening Data
Stephan Reiling, Aventis

Enquiry into scientific publications

The Science and Technology Committee (of the UK House of Commons) is to conduct an inquiry into scientific publications, looking at access to journals within the scientific community, with particular reference to price and availability. It will be asking what measures are being taken in government, the publishing industry and academic institutions to ensure that researchers, teachers and students have access to the publications they need. The inquiry will also examine the impact that the current trend towards e-publishing may have on the integrity of journals and the scientific process. The Committee will consider:

- What impact do publishers' current policies on pricing and provision of scientific journals, particularly 'big deal schemes', have on libraries and the teaching and research communities they serve?
- What action should Government, academic institutions and publishers be taking to promote a competitive market in scientific publications?
- What are the consequences of increasing numbers of open-access journals, for example for the operation of the Research Assessment Exercise and other selection processes? Should the Government support such a trend and, if so, how?
- How effectively are the Legal Deposit Libraries making available non-print scientific publications to the research community, and what steps should they be taking in this respect?
- What impact will trends in academic journal publishing have on the risks of scientific fraud and malpractice?

The Committee's homepage is at: www.parliament.uk/parliamentary_committees/science_and_technology_committee.cfm

Thanks to our Corporate Sponsors for 2003 and 2004

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