Paving the Road to More Open Access for Chemistry: Interview with Brian Vickery, President of Chemistry Central

Svetla Baykoucheva, editor of the *Chemical Information Bulletin*, talked with Brian Vickery about Chemistry Central, a new service from BioMed Central publishing peer-reviewed open access research in chemistry. More information about this service is available at http://www.chemistrycentral.com

SB: *Why was it necessary to create Chemistry Central from BioMed Central? What is the business model on which Chemistry Central is built and what are the potential challenges for such a model? How many people are currently employed by Chemistry Central (CC) and are there plans for hiring more people?*

BV: The open access movement has grown quickly over the past few years and took off first in the biomedical sciences. Here, open resources like PubMed and GenBank allowed biomedical researchers to understand the benefits of open access. Other fields have not had that advantage and most of the important resources for chemists are still locked behind subscription barriers. Chemists have been very conservative (compared to biomedical researchers and physicists) in challenging the status quo, but with some areas of chemistry on the decline, and boundaries between disciplines blurring rapidly it is time to act. There has been increasing recognition that the benefits of open access for the publication of original research apply in all fields, and certainly foster collaborations in multidisciplinary areas.

Chemistry Central currently consists of me and an external Editorial Board of more than 120 highly regarded scientists including, at present, 30 Section Editors. We use the same systems as BioMed Central, and share the expertise already built up in the other business units here including Editorial Production, Production, Marketing and Customer Service. As the volume of submissions grows we will look to grow the chemistry knowledge within BioMed Central.

Brian Vickery…likes challenges.

BioMed Central was already publishing chemistry related information through a variety of titles including *BMC Biochemistry*, *BMC Chemical Biology* and through partnerships such as *Geochemical Transactions* (ACS Division of Geochemistry) and *Beilstein Journal of Organic Chemistry* (published by the Beilstein-Institut in cooperation with BioMed Central). We decided to launch Chemistry Central to support this activity, by promoting open access strongly within the chemistry community.

The business model is the same as that for BioMed Central—the Chemistry Central Journal that covers all areas of chemistry will levy an article processing charge for all manuscripts accepted for publication. The current major challenge is educating authors that the publication process is *not* free, and that someone, somewhere, needs to pay for it. As the rate of research increases, so does the number of articles being published – and yet many library budgets remain static or are being cut. Many are now acknowledging that publication is part of the research process, and should be supported through research funds.

SB: *The field of chemical information is still dominated by commercial publishers and the o*pen access publishing remains to prove itself as a business model. *Is the author-pays model self-sustainable and what are its weaknesses?* By the way, *are there cases when authors pay from personal funds to publish in your journals?*

BV: The field is dominated by subscription products, be they from commercial publishers or learned societies. These access barriers limit the usage of the information, stifle innovation, and lead to an ineffective marketplace. By introducing Article Processing Charges (the most well-known model for open access, often misleadingly referred to as "author-pays") a true market is created whereby the author can see the price and judge the quality of service they will receive, and compare this against other providers of the same service. Questioning the sustainability of open access seems bonkers to me. At most, this model has the same costs as the toll access model, and therefore they are equally sustainable. The traditional model of publishing is sustainable, by which I mean profitable, because the academic/research community still funnels vast amounts of money into it from library budgets – it is certainly not self-sustaining. The fact that libraries still pay excessive charges to access this literature shows that the market is broken, not that the toll access route is sustainable.

SB: *What will happen if it turns out to be unsustainable? Doesn't this make it possible for a significant part of the record of science to be lost?*

BV: BioMed Central takes archiving as seriously as all publishers do, and should. In fact, because of the open access business model that we operate it is possible for any individual, or organization to make a copy of articles published in our journals. BioMed Central deposits the open access articles that it publishes in multiple digital archives around the world to guarantee long-term digital preservation. These archives include: INIST (France), Koninklijke Bibliotheek (The Netherlands), Potsdam University (Germany), PubMed Central. BioMed Central is also participating in the British Library's e-journals pilot project, and plans to deposit copies of all articles with the British Library.

BioMed Central makes article metadata available in compliance with Open Archives Initiative protocols, enabling automated 'harvesting' of our research articles for inclusion in any other digital archives. We support non-exclusive digital archiving of research articles by as many international archives as possible, to ensure the security and permanent accessibility of that research. BioMed Central is a participant in the LOCKSS (Lots of Copies Keep Stuff Safe) initiative. LOCKSS will enable any library to maintain their own archive of content from BioMed Central and other publishers, with minimal technical effort and using cheaply available hardware. To facilitate data mining research, the full text XML of all BioMed Central open access research articles is available for ftp download as a ZIP archive.

SB: *Some people have expressed concerns that the open access author-pays model is 'ethically flawed,' because it raises the risk that bad science could be widely distributed without being subjected to more careful peer review.*

BV: That's an interesting question! All journals live and die by their reputation, and as such are motivated to weed out poor science through peer review. A journal will only attract submissions if it can convince authors that they will achieve credibility and kudos by publishing in it. In fact, many open access journals are demonstrating equally high standards as their toll counterparts (BMC Bioinformatics, PLoS Biology and Nucleic Acids Research). Many of those who have implied that open access journals are tempted to publish more because of the increased revenues work for traditional publishing houses, who at the same time justify increasing their prices by more than inflation because of the increasing number of pages they are publishing.

SB: *With more and more journals becoming freely available on the Internet, how is this going to affect the commercial publishers, as well as the secondary publishers and what could they do to survive?*

BV: All toll-access publishers are starting to feel the pressure from freely available literature, not just commercial ones, but commercial publishers are likely to come under the greatest scrutiny because of the prices they charge. The transparency which open access brings to the costs of publishing will mean better competition and lower margins for publishers. Making a profit from offering publishing services is not the issue; it is the size of that profit that is in question. The Internet has significantly changed the way we find and access information. As more and more research articles and associated data become freely available, so free indexing services will spring up to support access to it – such as Google Scholar, PubChem. Many secondary publishers built significant revenues on the back of this need to access the primary literature. As technology advances, and communities of researchers build similar tools, on freely supplied data, secondary publishers need to cover more content, from more sources, in greater precision. At the same time, they must also offer broader and easier to use search interfaces.

SB: *How will the proliferation of freely accessible journals change the citation rates of authors and the impact factors of journals?*

BV: The way we measure the importance of an article is changing, but citation is still the major factor. Several studies have concluded that open access research articles have a citation advantage (they are cited earlier and more often) than toll access articles. Clearly, the number of citations will influence the impact factor of the journal.

SB: *How does the way chemists do their research, communicate with each other, and report their findings differ from the way researchers in other disciplines do it?*

BV: The role of chemistry is changing. Many of the areas we are currently most active in are multidisciplinary, and for this reason the way we communicate with other researchers (biologists, physicists etc) needs to change too. We do not have the same history of preprinting, for example, that the physics community does, though we did try this with some success at ChemWeb.com. As we continue to collaborate across subjects we need to open up our information in the same ways. Open access publishing is just as relevant, therefore, to chemistry as it is to biology or medicine.

SB: *Are there any rules for refusing to publish an article in an open access journal just because the instrumentation used to obtain the results was expensive? I recently sent an inquiry to an open-access peer-reviewed biomedical journal, to find out whether an article that I had been working on would be appropriate for publication in it. The purpose of the article is to educate biomedical researchers about the existence of some chemistry resources (PubChem, SciFinder Scholar, and DiscoveryGate) that could be very useful in their research. The response from the journal editors was that as an open access journal "it would be very unusual…to publish a paper that promotes expensive services such as DiscoveryGate,*

which are out of reach of most of our readers (especially in developing countries)." I don't see how discussing expensive information tools or resources in a paper would be different from discussing results obtained with a mass spectrometer or other expensive equipment. What is your opinion of the decision made by these editors?

BV: Educating a community of researchers about tools and services that could be of benefit to their research is useful, if the article tries to cover as many services as possible and the author has no competing interests. A discussion of what is currently available, both free to use and subscription based, is valuable if a detailed comparison of the services is given, e.g. breadth of coverage, number of molecules/reactions, frequency of updates, accuracy, indexing, use of thesauri and just as importantly, cost. It is perfectly reasonable to conclude that a subscription service is the most beneficial, provided all alternatives have been assessed.

***SB:** On a personal note, could you tell us something about yourself—how have you come to where you are now?*

BV: I am a chemist by training and joined ChemWeb.com at its inception in 1997. There I focused on community interaction, what we now call peer-to-peer. My drive was in applying web technologies in improving the ways chemists create, access and share information. In many respects what we doing was ahead of its time. Elsevier acquired ChemWeb.com in 1998, and I stayed with this team until 2002, learning about the migration from print to online publishing. As a marketing tool we offered "free access" to certain Elsevier journals at certain times. The traffic this generated demonstrated to me that a significant number of researchers simply had no access to the literature. I moved to Elsevier Engineering Information to broaden my understanding of secondary publishing, search and linking technologies, before taking charge of Elsevier Advanced Technology – a B2B unit with a portfolio of controlled circulation magazines, newsletters, handbooks and conferences.

My experience here taught me that researchers in commercial organizations, especially in SMEs, had limited access to the primary literature. I strongly believe that publishing is part of the research process, and that access to the primary literature should be free to those who wish to access it. It is this that led me to move to BioMed Central to lead the launch of Chemistry Central.

Divisional Committee Meetings and Social Events
233rd ACS National Meeting
Chicago, IL
March 25-29, 2007

Note: Needs to be updated

Committee Meetings

Saturday,
All meetings on Saturday will be held in … The CINF Executive Committee is a closed meeting; if you wish to attend, please contact the CINF chair. CINF members are encouraged to attend any of the other committee meetings and all of our social functions. If you would like information about any of these committees, please contact the Committee chair or the CINF Chair.

CINF Program & Executive Committee

7:30 am – 9:00 am	Breakfast & Long-Range Planning Meeting
9:00 am – 12:00 pm	Program Committee Meeting
12:00 pm – 1:00 pm	Functionaries Luncheon
1:00 pm – 5:00 pm	CINF Executive Committee Meeting

CINF Awards, Fund-raising, Finance Committee

9:00 am – 9:30 am	Awards Committee Meeting
9:30 am – 10:30 am	Fund-Raising Committee Meeting
10:30 am – 12:00 pm	Finance Committee Meeting

Careers, Publications Committee