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Phil Bourne: Thoughts on the future of scientific dissemination

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Abstract

Scientific discourse has traditionally been conducted primarily through the scientific literature and face-to-face scientific meetings. The data supporting that discourse was either not available, or only available by special request to the generators of that data. The internet has changed the way we undertake that discourse, but I would argue only marginally. Data are now available through on-line databases – although not usually data for failed experiments. Traditional publishers have learnt how to use the internet as a dissemination medium, but little else. In short the power of the medium has yet to be realized.

Glimmers of change are found in open access publishing made possible when dissemination costs plummet, but where are the killer applications that make use of this full on-line text? On-line databases strive for more automated and manual annotation, while publications accept data as supplemental information, but where are the applications that bring these together? PDFs are often a poor medium to convey scientific ideas and understand data when a video clip could do so much more. Where is the YouTube for scientists? Unread papers bring academic credit, but well read entries on blog sites do not; entries into databases and sites such as wikipedia count for nothing, why?

These questions are not without preliminary answers and we will discuss some of the work that we and others are undertaking to address the beginning of a change in how we communicate and learn as scientists.

About the speaker

Philip E. Bourne PhD is a Professor in the Department of Pharmacology at the University of California San Diego, Co-director of the Protein Data Bank and an Adjunct Professor at the Burnham Institute and the Keck Graduate Institute. He is a Past President of the International Society for Computational Biology. He is an elected fellow of the American Medical Informatics Association. He is the Founding Editor-in-Chief of the open access journal PLoS Computational Biology, on the Advisory Board of Biopolymers and on the Editorial Boards of Proteins: Structure Function and Bioinformatics, Biosilico and IEEE Trends in Computational Biology and Bioinformatics and a long standing member of the National Science Foundation and National Institutes of Health panels responsible for reviewing

proposals relating to biological infrastructure and bioinformatics. He is a past member of the US National Committee for Crystallography, past chairman of the International Union of Crystallography Computing Commission IUCrCC and past chairman of the American Crystallography Association (ACA) Computing Committee.

Recent awards include the Flinders University Convocation Medal for Outstanding Achievement 2004 and the Sun Microsystems Convergence Award 2002.

Bourne's professional interests focus on bioinformatics and structural bioinformatics in particular. This implies algorithms, metalanguages, biological databases, biological query languages and visualization with special interest in evolution, cell signaling and apoptosis. He has published over 180 papers and 4 books, one of which sold over 120,000 copies. He has co-founded 3 companies: ViSoft Inc., Protein Vision Inc. and a company distributing independent films for free.

Bourne is committed to furthering the free dissemination of science through new models of publishing and better integration and subsequent dissemination of data and results which as far as possible should be freely available to all.

Personal interests are squash, hiking, skiing, flying and motor bikes.