

# Will the Web Change How Science Is Done and Reported?

*Chair:*

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*Panelists:*

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The answer to the question “Will the Web change how science is done and reported?” is

a resounding “Yes, and it already has.” Peter S Greene, Peter B Boyce, and Dan Jacobson demonstrated exactly how in this session.

With a computer, Greene demonstrated how *The Annals of Thoracic Surgery* is using “RealPlayer” video (a video streaming technology pioneered by RealNetworks, Inc) accompanied by audio to demonstrate new techniques in heart surgery in the online version of the journal. Readers can learn much more by watching a procedure on video and

hearing the surgeon explain it than by just reading about it in a print journal. Such techniques are more effective means of communication than print.

Greene made several predictions about the increasing use of the Web:

- Video clips will become popular add-ons to journal articles.
- Readers will demand online software and data sets.
- Everyone will tire of Web self-publishing.
- Scholarly societies will organize into virtual communities that share common interests and URLs.
- Scholarly-meeting presentations will be widely attended on line.

The critical decision for journals, said Greene, is whether to remain print only, electronic only, or a hybrid with interrelated print and electronic features.

The means for making journal production easier and cheaper are already in place on the Web, said Jacobson. He demonstrated his journal's online abstract-submis-

sion procedure. Abstract forms are on the Web site and developed in a way that takes the author step by step through the writing and submission process.

Peer review, said Jacobson, is slow and uses a lot of paper. It could be performed entirely electronically. An article could be submitted and sent out for review electronically. Tracking reviewers and sending automatic reminders to late reviewers could also be done on line.

Some journals are already receiving submissions on line and converting them to HTML for publication. The American Astronomical Society, said Boyce, has been successfully publishing journals on line for 3 years and abstracts for 6 years.

But, Boyce said, we are just starting. It is too early to measure the effects. We have no way today of knowing exactly where we will end up. He equated this period in Web development with the beginning of the film industry. Movies began by capturing live theater on film with the camera directly in front of the stage. In time, someone saw

that the camera could be moved to capture the action from a different angle.

Because a journal goes on line does not necessarily mean that it is an electronic journal, said Boyce. An electronic journal is not

- electronic delivery of images of the same old paper pages
- a collection of separate articles
- pages in a specific format fixed for all time

An electronic journal is a linked, permanent information resource for transferring reliable and accurate information from producer to user.

Electronic publishing is still in its infancy. It already has increased the speed and effectiveness of scientific journals. It will continue to grow because readers will demand to do more than just read. Rapid development on the Web is important for the accurate sharing of scientific information, but it is important to preserve peer review to maintain the trust of scientists themselves. 