NEWSLETTER

September 2000

Operational Research Society of New Zealand (Inc.), PO Box 6544, Wellesley St. Auckland, New Zealand
http://www.esc.auckland.ac.nz/Organisations/ORSNZ/

GUEST EDITORIAL

I have been associated with ORSNZ since its formation in 1964 and as far as I remember I have not previously been invited to write a formal Guest editorial for the Newsletter. No, that is probably not true. I expect I was invited but had been careful to prepare a good excuse.

In the early days the Newsletter had a modest aim, to keep people in touch with the Society and to give notices of meetings, which then were almost exclusively held in Wellington. Of course when I produced the Newsletter, I contributed material but it was nothing so grand as an Editorial. In preparing this note (I still don't want to call it by the E-word), I went back into my archives (i.e. boxes) and found to my dismay that I have not retained all the earlier issues. The earliest copy I have is Volume 3, Number 5, February 1968, which, I suppose, is one of the issues from the third year of operation. That was before Fraser Jackson and I introduced the Society's logo. That first appeared in Volume 4, Number 7, September 1969 in the original red, black, and white. As a matter of historical interest, I wonder if the Society holds an archive containing the earliest issues?

A guest editorial is a contribution invited from, or forced upon, a member of ORSNZ to make some wise and entertaining comments to fill up the first two pages of the Newsletter. (Luckily, sometimes the Contents are bulky enough to put a useful constraint on the Wise Words). It is an opportunity to comment on recent events or on the views raised in previous editorials. Often it is used to make philosophical, usually pessimistic, remarks about the future of OR, particularly in New Zealand.

In the most recent Editorial (Newsletter, June 2000), Andy Philpott posed the question "Why we have to have a New Zealand OR Society rather than a chapter of a wider organisation?" He concluded that we should remain independent. I would need to confirm this but I think that ORSNZ was operating as a national body before the Australians were. The New South Wales Society was started about the same time as we were as I remember. So tradition, at least, suggests that we should stay as we are or that the Australians should join us.

CONTENTS

Publication dates: March, June, September, December
Deadline for submissions: on the 15th of February, May, August, November (for following month's issue)
Send submissions as word attachments by email to Production Manager, Tricia.Lapham@vuw.ac.nz

This question (Question 1), like Question 2: "What is OR?" and Question 3:"Where have we gone wrong?" has exercised the thoughts of members since the beginning. They have been wrestled with in Conferences and, I expect, in Editorials. Originally the society was in the main a vehicle for organising local meetings. At that time it was almost purely Wellington based, at least that is where the action was. Annual conferences were arranged by tacking on an extra day to the Statistics Association conference. We were pretty proud then to have our own National organisation even if it was a younger sibling to the Statisticians. Question 1 was discussed, when the Australian Society was being set up and it was generally agreed among us then that New Zealand should retain its independence but, of course, seek to co-operate fully.

This does not make it inappropriate to raise the question again, though. It is, of course, useful for us to be closely associated with larger organisations like Australia and the international bodies. But what would we lose by being absorbed? We even tried to co-ordinate cross-Tasman annual conferences but travel costs made it, at that time, preferable, indeed essential, to have our own conference but to make sure it did not overlap the one held by Australia. I think the same situation holds today.

Perhaps we should take our leadership from the politicians? ORSNZ should join the Australians when we get a single joint currency.

TONY VIGNAUX, Victoria University of Wellington, e mail: tony.vignaux@vuw.ac.nz

VICTORIA UNIVERSITY STUDENT WINS INTERNATIONAL OR/MS PRIZE

A former Victoria University Master of Public Policy student has taken out a top honour at a prestigious international symposium. Minoo Meimand won first prize in the student thesis section of the International DEA Symposium on Measurement and Improvement of Productivity in the 21st Century, held in Brisbane during July.

Data Envelopment Analysis (DEA) is a management science method for measuring the relative performance of organisational units where the presence of multiple inputs and outputs makes comparisons difficult.

The conference covered applications in the financial services, primary producing and business and public sectors.

Minoo's thesis entitled "A Comprehensive Objective Performance Evaluation of the Accident Compensation Corporation of New Zealand's Main Branches", was supervised by Victoria lecturers Rob Laking and Bob Cavana.

International experts from around the world participated in the awards assessment, which Minoo won from a field of six students from China, India, Australia, United Kingdom and New Zealand.

Minoo now works for the Social Policy Branch of the New Zealand Treasury where she provides advice on the evaluation of government welfare policies. She is particularly interested in extending the work that she had performed for the ACC to other government departments.

BOB CAVANA, Victoria University of Wellington, e mail: Bob.Cavana@vuw.ac.nz

PROFESSOR BRYAN P. PHILPOTT, 1921-2000

The Society regrets to inform its members that Emeritus Professor Bryan Philpott, of the Economics Department at Victoria University, died on July 18 after a short illness. He was aged 79 and one of New Zealand's pre-eminent economists. Professor Philpott was the first New Zealand economist to be elected a Fellow of the Royal Society of New Zealand, and in the recent Queens Birthday Honours he was awarded the Companion of the New Zealand Order of Merit for his services to Economics. He was a member of ORSNZ since the early 1970s, and pursued a lifelong interest in the subject.

During his illustrious career, Professor Philpott emphasised the practical application of economic theory, for example by co-founding BERL (Business & Economic Research Ltd) and pioneering economic forecasting in New Zealand in 1958. Subsequent to his graduation from Leeds University, he became the first chief economist at the Meat and Wool Board's Economic Service; it is said that economists at the service to this day can dip into their records and retrieve Professor Philpott's hand-written numbers.

Professor Philpott was also a pioneer in the development of computable general equilibrium models, and their application to the New Zealand economy. One of us had the privilege of working alongside Bryan and other members of the National Sectoral Working Group at the New Zealand Planning Council in the 1980s. We were involved with analysing medium term policies for the New Zealand economy based around the use of a general equilibrium sectoral economic model developed by Professor Philpott and others. During this period Professor Philpott was an inspirational and major contributor to this working group, and he had considerable confidence in the role and potential of computer models for economic policy analysis. He was also an extremely generous and kind person to work with.

In many ways, Professor Philpott's emphasis on "practical economics" exemplifies the goal of what we, as operations researchers, strive for (although not always successfully!): namely, the gainful application of the methods of OR for informing managerial decision-making and policy formulation. He will be deeply missed by members of the Society, especially by his friends, colleagues and former students.

Bob Cavana
Victoria University of Wellington

Jay Sankaran
University of Auckland

DECISION MAKING UNDER UNCERTAINTY IN NORWAY

The Norwegian Academy of Science and Letters, founded in 1857, and now with King Harald V as Honorary President, has as its main aim, the advancement of science and scholarship in Norway. It fulfils this function by initiating and supporting research projects, by organizing meetings and seminars, by publishing scientific and scholarly works, and by communicating with scientific organizations.

The Academy has established a Centre for Advanced Study, which is located within its premises in a lovely old house in Oslo. The house has been beautifully converted, with well equipped offices, seminar rooms, and a dining hall. Each year 20 to 30 scholars are invited to spend up to 12 months at the Centre. They work on one of three research projects within the natural sciences, the social sciences, and the humanities.

During its ninth academic year, from August 2000, 25 researchers from Norway, Sweden, Denmark, Iceland, Germany, France, Switzerland, Great Britain, USA, Russia and New Zealand will be working on:

Dynamics of Fluid Rock Systems,
Editing Medieval Manuscripts, and
Decision Making under Uncertainty.

I am part of the latter group, which is lead by Professor Stein Wallace of NTNU, Trondheim. We aim to exploit the expertise of group members in OR, data presentation, and organizational psychology; in order to develop better decision-making models for problems in which uncertainty is a central theme. We shall focus on the collection, processing, and presentation of stochastic data; and work on how complex stochastic models should be designed, to enable users to derive the greatest possible benefit in the adaptation of the models to the users' organizational structures.

LES FOULDS, University of Waikato, e mail: lfoulds@mngt.waikato.ac.nz

WELLINGTON NEWS

I am very pleased to report the success of one of our masters students, Minoo Meimand, winning first prize for her student thesis paper presentation at the recent International Data Envelopment Analysis Conference in Australia (covered elsewhere in this newsletter). We are hoping that Minoo will present her prize winning paper at our annual ORSNZ conference at Wellington in December! Which reminds me, please also read the updated call for papers in this newsletter and send in your abstract(s) if you haven't already. I am co-ordinating a stream/session on 'systems and soft OR' so please contact me if you would like to present in this stream or participate in a discussion panel. Our new Professor of Marketing Science, Jim Wiley will be co-ordinating a stream/session on 'OR and Marketing', so please encourage your marketing colleagues to contact Jim to discuss this stream - james.wiley@vuw.ac.nz.

I would like to discuss my recent trip to London, Bergen (Norway), Ireland, Beijing and Adelaide, but I have been advised that I only have half a page for my comments! (just as well!). However, I would like to say that I attended a highly successful International System Dynamics Conference in Bergen in early August, and I would be very happy to chat about it at our forthcoming ORSNZ conference!

Finally I would like to remind members that these 'news items' from the branches are for all members to contribute to, so please give any items to your local branch chairperson or send them direct to Tricia Lapham, our newsletter production co-ordinator. Many thanks Tricia, for your excellent work in making sure there is material for these newsletters, and also for producing the final product.

We are looking forward to you all coming to our Society's conference at Wellington in December.

BOB CAVANA, Victoria University of Wellington, e mail: Bob.Cavana@vuw.ac.nz

MAINLAND NEWS – Management Science Group

Deb Chattopadhyay is leaving in October for Cambridge, to work with Caminus Limited, in energy consulting. We wish him the very best of luck.

Shane Dye reports a good cohort of Management Science Honours students this year. Sample projects:

> Fraser Gardiner and Alicia Hadfield: using simulation to studying patient flows through the Christchurch Hospital Emergency Room.
>
> David Meaclem and Brad Mytton: scheduling road maintenance in New Zealand for Transfund, to be solved with linear programming.
>
> Alika Mitchell: estimate the potential benefits for the Mount Hutt ski-field from a more flexible workforce. The analysis involves a simulation of staff movement, and an IP to minimise the workforce whilst meeting required staff levels.
>
> John Row: forecasting numbers of guests and deciding how much rental equipment to purchase for Mount Hutt ski-field.

Andrew Kerr is about to submit his PhD thesis titled "Stochastic Utility Maximising Dynamic Programming Applied to Medium-term Reservoir Management." A release policy is determined which maximises the expected utility associated with annual profit and storage; the utility function reflects the risk attitudes of the firm. He has tested the technique using regulated and deregulated representations of the New Zealand electricity system and investigated the effect on the release policy of different (hypothetical) utility functions.

John Raffensperger has started a web site, SpreadsheetStyle.Com.

Grant Read has been busy doing PHB work on markets in Singapore and the Philippines.

Mark Stewart, one of our PhD students, plans to present for the Young Practitioner's Prize at the upcoming ORSNZ Conference. He is working on the problem of deciding which computers to use, what software to install on them, and how to route traffic, to meet demand for Internet services.

Venkat presented a paper at the American Suppliers Institute's Annual Conference (with D.J. Neal), "Taguchi Or Not Taguchi, That Is The Question, Robust Engineering: Powerful Tools for The New Millennium," 17th Annual ASI Taguchi Methods Symposium, Boston, USA, October 1999, Boston: 319-331. He also plans to present at the ANZMAC (Australia New Zealand Academy of Marketing) 2000 conference: Venkateswarlu, P. (with J. Barret & A. Lye), "Brand Type: Does It Influence Extension Attitudes," ANZMAC 2000 Conference, Griffith University, Australia.

JOHN F. RAFFENSPERGER, University of Canterbury,
e mail: j.raffensperger@mang.canterbury.ac.nz

NEWS FROM AUCKLAND

In August, I had the opportunity to attend the International Symposium on Mathematical Programming in Atlanta, along with Andy Philpott and Geoff Pritchard. It was, as expected, an enormous conference (around 1100 participants). Also as expected, Atlanta in August was very, very hot. But it was great to catch up with the latest advances in a huge range of areas, as well as to present some of our work to the world.

Geoff Pritchard has recently returned after a few months in the US. He has been working on some problems arising in the context of electricity markets and on sampling and bounding within stochastic programming.

Andrew Mason will be off to Japan at the end of this month to attend the annual conference of the Operations Research Society of Japan.

We welcome Tava Olsen from the University of Michigan, who is visiting the Engineering Science Department for 6 months, along with her husband Tim and a student of hers, Eric Huggins. Not only has Tava managed to have many useful chats with people here and teach a course in simulation, she's also given birth – congratulations! And Eric has done a great job of teaching while she's taken a well-deserved break.

PHIL NEAME, University of Auckland, e mail: p.neame@auckland.ac.nz

ORSNZ 2000 – CALL FOR PAPERS

The 35th Annual Conference of the Operational Research Society of New Zealand

VENUE

The conference will be held at the downtown waterfront campus of Victoria University of Wellington on December 1 and 2, 2000 and will be hosted jointly by the School of Business and Public Management and the School of Mathematical and Computing Sciences.

TOPICS

The conference committee welcomes papers in OR and decision modelling. In addition to papers of general interest, the conference will have theme sessions on *OR in Competitive Markets* and *Logistics and Transportation*. As well there will be special sessions on *Systems and Soft OR* and *OR and Marketing*.

THEME SESSIONS

John George	OR in Competitive Markets	jgeorge@haglerbailly.co.nz
To be confirmed	Logistics and Transportation	

SPECIAL SESSIONS

Bob Cavana	Systems and Soft OR	Bob.Cavana@vuw.ac.nz
Jim Wiley	OR and Marketing	James.Wiley@vuw.ac.nz

The committee particularly welcomes papers on practical applications.

KEYNOTE TALKS

There will be two keynote talks on each conference theme.

Fred Baird	OR in Competitive Markets
David Ryan, Rod Butchers, Jeff Meyer	Logistics & Transportation
	The Edelman presentation given at the INFORMS meeting in May.

SUBMISSIONS

Submissions of abstracts (200 words or less) in plain text, LaTeX or Microsoft Words format may be e mailed to: Orsnz2000@mcs.vuw.ac.nz

and hard copies may be sent to:
ORSNZ 2000
School of Mathematical and Computing Sciences
Victoria University of Wellington
PO Box 600, Wellington, New Zealand

The closing date for acceptance of abstracts is 6 October 2000. Authors of papers will be notified regarding acceptance of their abstracts by 11 October 2000. Authors of accepted abstracts will be required to submit a full-length paper (up to 10 single-space typed pages) for publication in the Conference Proceedings which is issued to all participants and to all ORSNZ members. Authors are also encouraged to submit postscript (.ps) or Adobe Acrobat (.pdf) versions of their papers for inclusion in the conference archive. The deadline for submission of full papers is 27 October 2000. Guidelines for style and format of the full paper will be sent at the time of acceptance.

CONTACT

All enquiries to either orsnz2000@mcs.vuw.ac.nz or the ORSNZ 2000 address above.
Website: http://www.mcs.vuw.ac.nz/orsnz2000/

Organising Committee

John Davies
Bob Cavana
Kerry Mayes
James Wiley
Tricia Lapham
Sophie Lum

Programme Committee

Yu Hayakawa
John George
Tapas Sarkar
Tony Vignaux
Millie Byrne
Thomas Crosby

IMPORTANT DATES

Abstract Submission	6 October 2000
Notification of Abstract Acceptance	11 October 2000
Full paper submission	27 October 2000
Registration	27 October 2000

YU HAYAKAWA, Victoria University of Wellington, e mail: Yu.Hayakawa@vuw.ac.nz

ORSNZ HANS DAELLENBACH PRIZE

To honour the considerable contributions of Emeritus Professor Hans Daellenbach to OR/MS in New Zealand, the ORSNZ has established the ORSNZ Hans Daellenbach Prize. The purpose of this award is to elicit, recognise and reward outstanding examples of management science and operations research in New Zealand, and to encourage their dissemination in the international literature. Candidates for the prize must be members of ORSNZ. The prize is accompanied by a (NZ)$1,000 honorarium, and winners must give a plenary address on the relevant work at the ORSNZ Conference in the year of the award. The Daellenbach prize is awarded every two years at most. The next Hans Daellenbach Prize is due to be awarded at the 36th Annual ORSNZ Conference in 2001.

Application Process:
Applicants should send the ORSNZ Council a one-page or two-page typed summary that describes what they have accomplished, in enough detail to let the selection panel judge the appropriateness of their work for the competition. Entrants will be expected to report on a body of innovative OR/MS work in New Zealand, with international recognition as evidenced by publication. Citations of publications supporting the application should be included in the summary, and copies of the relevant papers should also be forwarded with the application.

Nominations for the award may also be forwarded by members of the ORSNZ, in which case Council will advise the nominees that their names have been put forward, and invite them to consider applying. In order for the nominees to have sufficient time to put together their applications, any such nominations should be sent to Council at least one month before applications close. Any work that has been done in recent years is eligible unless it has already been recognised by a Daellenbach Prize. Anyone is eligible for the competition except members of the judging panel.

Timetable :	Nomination deadline	March 31, 2001
	Application deadline	April 30, 2001
	Presentation and award announced	June Newsletter, 2001
	Award ceremony and keynote address	ORSNZ Conference, 2001

ANDY PHILPOTT, Auckland University, e mail a.philpott@auckland.ac.nz

DOS AND DON'TS OF POSTER PRESENTATION

Steven M. Block, Department of Molecular Biology, Princeton University, New Jersey

WORDS OF CAUTION

This guide offers advice on preparing a good scientific poster. As with all communication, which is an art form, there is no single recipe for success. There are many alternative, creative ways to display and convey scientific information pictorially. Occasionally, breaking with tradition can pay off, but not always. More often than not, an iconoclastic approach will revile and repel, rather than amaze and astound. Consider yourself forewarned. Unless you have some prior experience under your belt, or feel pretty certain of your ground, it's a better idea to leave experimentation to the laboratory and stick with tried-and-true methods for your poster presentations. The suggestions here certainly won't improve your science but, if followed, may help you to communicate your message. You should, before deliberately departing from these guidelines – and they are only that – at least attempt to understand the reasoning behind the advice. Remember that when it comes to posters, style, format, color, readability, attractiveness, and showmanship *all count*. Take the time to get things right.

POSTER LAYOYUT AND FORMAT

DON'T make your poster up on just one or two large boards. These are a clumsy nuisance to lug around. They put large strains on poster pins and often fall down. They frequently don't fit well into the poster space you are provided. They don't lend themselves well to rearrangement, alignment, or last-minute modifications.

DO make up your poster in a large number of separate sections, *all of roughly comparable size*. The handiest method is to mount each standard-sized piece of paper individually on a colored board of its own of slightly larger dimensions, say, 9.5 x 12 inches, or thereabouts. This frames each poster segment with a nice border and makes for a versatile poster that can be put up anywhere, yet knocks down easily to fit into a briefcase or backpack for transport.

DON'T write an overlong title. Save it for your abstract. Titles that use excess jargon are a bore. Titles with colons in them are a bore. Titles that are too cute are even more of a bore.

DO keep your title short, snappy, and on target. The title needs to highlight your subject matter, but need not state all your conclusions, after all. Some good titles simply ask questions. Others answer them.

DON'T make the title type size too large or too small.

DO make your title large enough to be read easily from a considerable distance (say, 25-30 feet), so it will perforce span more than one printed page. Nevertheless, the title should never exceed the width of your poster area (particularly if you are sharing half a posterboard with a neighbour!), nor should it ever occupy more than two lines. If things don't fit, *shorten the title*; don't reduce the typesize. And remember that titles in all capital letters are harder to read.

DON'T leave people wondering about who did this work.

DO put the names of all authors and institutional affiliations just below (or next to) your title. It's a nice touch to supply first names rather than initials. Don't use the same large type size as you did for the title; use something smaller and more discreet. This is not the cult of personality.

DON'T use too small a typesize for your poster. *This is the single most common error*. Never, ever, use 10- or 12-point type. Don't use it in your text, *anywhere*. Don't use it for captions. Don't use it for figure legends, and annotations, footnotes, subscripts, or anything else. Don't *ever* use small type on a poster. Remember, no one ever complained that someone's poster was too easy to read. Got it?! Good!

DO use a typesize that can be read easily at a distance of ~4 feet or better. You do want a large crowd to develop around your poster, don't you? Think of 14-point type as being suitable only for the fine print and work your way up, (never down) from there. For text, 20-point type is about right (18-point in a pinch). Not enough space to fit all your text? Then shorten your text!

DON'T pick a font that's a pain to read. Please, don't get too creative in your typeface selections: no one wants to struggle through a poster in Linotext or Poster Bodini or Tekton or anything garish. Less obvious is the fact

than sans-serif fonts, Helvetica being the most common offender, are more difficult to read, and certain letters are ambiguous (for example, the lowercase 1 and uppercase I may look alike). Serifs help guide the eye along the line and have been shown in numerous studies to improve both readability and comprehension. Equally hard to read are most monospaced fonts such as Courier. Generally speaking, it's better to leave Helvetica to Cell Press, reserving its use in posters for short text items such as titles and graph labels, and Courier to your ageing typewriter, reserving its use in posters for nucleotide sequence alignments and suchlike.

DO use a high-quality laser or inkjet printer to print your poster: no dot matrix printers, no typewriters, no handwriting. Select a highly legible font with serifs and a large x-height. The x-height of a typeface is a typographer's term for the relative height of the lowercase x compared with an uppercase letter, such as A, or a lowercase letter with ascenders, such as b. A large x-height makes for easy reading from a distance. Good ol' Times Roman and its look-alike clones represent the standard choice. But if you seek a different look, consider Baskerville, Century Schoolbook, Palatino, or anything else with proven legibility. Also, consider adjusting the kerning (the inter-letter spacing) for improved readability. This is particularly helpful when using large font sizes.

DON'T vary the type sizes and/or typefaces excessively throughout the poster. For example, don't use something different for every bit of text and graphics.

DO design your poster as if you were designing the layout for a magazine or newspaper. Select fonts and sizes that work together well. Strive for consistency, uniformity, and a clean, readable look.

DON'T make your reader jump all over the poster area to follow your presentation. Don't segregate your text, figures, and legends in separate areas.

DO lay out the poster segments in a logical order, so that reading proceeds in some kind of linear fashion from one segment to the next, moving sequentially in a raster pattern. The best way to set up this pattern is columnar format, so the reader proceeds *vertically first*, from top to bottom, then left to right. This has the advantage that several people can be all reading your poster at the same time, walking through it from left to right, without having to exchange places. Consider numbering your individual poster pieces (1, 2, 3...) so that the reading sequence is obvious to all. And always make sure that all figure legends are located immediately adjacent to the relevant figures.

DON'T use gratuitous colors. Colors attract attention but can equally well detract from your message when misused. Fluorescent (neon) color borders just don't cut it for posters. Neither do excessive variations in color (the rainbow look). Forget paisley, tie-dye, stripes, polka dots, and batique. In your graphic items, use color with deliberation; avoid using it for its own sake, and avoid pseudocoloring when possible.

DO, by all means, use colors in your poster, and always try to use them in a way that helps to convey additional meaning. For color borders, select something that draws attention but doesn't overwhelm. For color artwork, make sure that the colors actually mean something and serve to make useful distinctions. If psuedocoloring is necessary, give thought to the color scale being used, making sure that it is tasteful, sensible, and above all, intuitive. Also, be mindful of color contrast when choosing colors; *never place isoluminous colors in close proximity* (dark red on navy blue, chartreuse on light gray, etc.), and remember that a lot of people out there happen to be red/green color blind. Please remember this advice when you create color slides and transparencies as well.

POSTER CONTENT

DON'T write your poster as one long, meandering thread.

DO break your poster up into sections, much like a scientific article. Label all the sections with titles. Always start with an abstract, and write up this section so it can be easily read and digested, in contrast to the abstracts found in some scientific journals. Remember, you are not compelled to put it all down in 150 words or less. Make sure that your abstract contains a clear statement of your conclusions, so your reader will understand where you're headed, so to speak. Follow the abstract with other sections that describe the strategy, methods, and results (although you need not call these sections by those names). Display all your graphs, pictures, photos, illustrations, etc. in context. Write clear, short legends for every figure. Follow up with a Conclusions section. You may wish to add some kind of executive summary at the end; many successful posters provide a bulleted list of conclusions and/of questions answered or raised.

DON'T ever expect anyone to spend more than 3-5 minutes (tops!) at your poster. If you can't clearly convey your message pictorially in less time than this, chances are you haven't done the job properly.

DO get right to the heart of the matter, and remember the all-important KISS Principle: *Keep it Simple Stupid!* In clear, jargon-free terms, your poster must explain – 1. the scientific problem in mind (*what's the question*?), 2. its significance (*why should we care?*), 3. how your particular experiment addresses the problem (*what's your strategy?*), 4. the experiments performed (*what did you actually do?*), 5. the results obtained (*what did you actually find*?), 6. the conclusions (*what did you think it all means?*), and, optionally, 7, caveats (*and reservations*) and/or 8, future prospects (*where do you go from here?).* Be brief, and always stay on point.

DON'T write your poster just as if it were a scientific paper. It's not. DON'T waste lots of precious space on messy experimental details (skip a complete Materials and Methods section) or on irrelevant minutiae. Don't display every gel, every sequence, every genotype. Don't ever supply long tables; no one has the time or inclination to wade through these. And don't ever lift long sections of text directly from some manuscript and use these as a part of your poster. A poster is not a worked-over manuscript.

DO recall that a poster should be more telegraphic in style, and also far more accessible. Avoid jargon. Eschew obfuscation. Write plainly, simply, briefly - never cryptically. A little informality can help but don't get too cute. Stress experimental strategy, key results, and your conclusions. DON'T get bogged down in little stuff. Convey the Big Picture.

DON'T leave prospective readers hanging, or assume they're all experts. They're not.

DO consider adding a helpful tutorial section to your poster. For example, consider one or more of these additions to the standard fare: 1. a brief, possibly annotated bibliography, 2. a short account describing some special apparatus or technique, 3. a synopsis of the historical background of a particular scientific problem, 4. a pictorial glossary describing some jargon terms (e.g. a definition of synthetic lethality with an illustration of alternative ways it can develop, 5. an Internet address pointing to relevant material, 6. photographs of your set up, or 7. anything else that would help teach your readers what they need to know to understand and appreciate your work. *Use graphics*. Many of the items above are what an editor would call a sidebar to the main story. Sidebars really help to communicate the message. Remember that you are the single best advocate of your own work.

DON'T leave out the acknowledgements.

DO remember that it never hurts to give credit where it's due. Write up a short acknowledgement section, including your sources of financial support and everyone who helped you to get this work done. No-one was ever accused of being too generous here.

DON'T leave out the references.

DO provide parties with routes into the literature and supply a context for your work. Poster references need not be as extensive as those in papers. If your poster work, or work closely related to it, has already been published, by all means display the citation(s). Footnotes are permissible, but keep them brief and avoid them entirely if at all possible. People hate having to jump around while reading, particularly posters. Another useful bit of supplementary information to provide is the address of an Internet web site (URL) where more information can be found.

POSTER PRESENTATION

DON'T leave everything until the last minute. Avoid resorting to handwritten text (no felt-tipped pens!) or using correction fluid. Don't hold everything together with tape. Be a pro.

DO start putting your poster together early. Get the title, acknowledgements, bibliography, and other standard items out of the way *first*, so you aren't stuck at the last minute with these particular details. Experiment with type fonts, sizes, colors, and all that stuff from the start, and begin to plan your layout. Buy your posterboard pushpins, etc early. Pre-cut some postboard pieces. Make up any graphics that you know in advance are destined for your poster. DO this soon, because you won't have time later, and the color PostScript printer queue may be jammed with jobs from all of your colleagues. Buy a can or spray mount (artist's adhesive) so you can dry mount all of the poster segments. The best kind to get is the type that allows you to reposition the artwork without damaging it.

DON'T stand directly in front of your poster at the session or get too close to it. Don't become so engrossed in conversation with any single individual that you (or they) accidentally prevent others from viewing your poster.

DO try to stay close by, but off to the side just a bit, so that passers-by can see things also so that you don't block the vision of people already gathered around.

DON'T be an eager beaver and badger the nice people who come to read your poster.

DO give them some space. Allow them to drink it all in. If they engage you with a question, then that is your opening to offer to take them through the poster or discuss matters of mutual scientific interest. Conversely, don't ignore people who look as though they may have questions, especially by becoming engrossed in talking to all your buddies.

DON'T pull a disappearing act.

DO stick around. It's your poster, your work. Try to hang around for as long as you can to help and advise people. At the very least, give them a chance to associate a human trace with your work. If you need to circulate, try to get a co-author to spell you.

DON'T forget ancillary materials.

DO be a good scout, and come prepared to your poster, armed with reprints of any of your own relevant papers that you might have, plus extra copies of any material you may wish to share. Have ready some business cards, or slips of paper you can use to provide colleagues with your address (or fax number or e-mail address or whatever). Posters are a terrific way to get scientific suggestions and meet like-minded individuals. And don't forget to bring plenty of pushpins as well.

DON'T hesitate to provide supporting materials, if these can help. But don't overdo it.

DO consider using some kind of attention-getting gimmick, but beware that it doesn't backfire. Some posters employ a monitor on a cart and display videotape. Other interesting posters provide physical models or various kinds of three-dimensional display. Still others display actual data traces, computer-based simulations, or something else that makes them stand out from the crowd. Provided that your hook is legitimate, and that it doesn't detract from the science or trivialize it in some way, this sort of thing can be eye-catching and helpful. Use good judgement here.

For reprints of the original Biophysical article, contact the author, Steven M Block, Dept of Molecular Biology, Princeton University, Princeton, New Jersey 08544, USA.

MEETINGS CALENDAR FOR 2000 AND BEYOND

Modelus 2000 conference, 11-13 October 2000, Estoril, Portugal.
Details on http://www.irradiare.com/modelus2000

Fourth Japan-Australia Joint Workshop on Intelligent & Evolutionary Systems, 30 October - 2 November 2000, Japan. Details on http://www.nda.ac.jp/cs/ja2000

International Conference on Systems Thinking in Management, 8-10 November 2000, Deakin University Waterfront Campus, Geelong, Australia.
Details on http://www.icstm.deakin.edu.au/2000

Decision Science Institute, 18-21 November 2000, Orlando, Florida, USA.
Contact by email: dsi2000@bus.msu.edu

ORSNZ 35th Annual Conference, 1-2 December 2000, Victoria University, Wellington, New Zealand.
Abstract submission –29 September 2000
Contact by email:Yu.Hayakawa@vuw.ac.nz

ANZAM Conference, 6-9 December 2000, McQuarie University, Sydney, Australia.
Contact by email: Dai.gilbertson@vuw.ac.nz

First International Congress on Intelligent Systems and Applications, 12-15 December 2000, University of Wollongong, near Sydney, Australia.
Details on http://www.icsc.ab.ca/isa2000.htm

ANZIAM 2001, The 37th Applied Mathematics Conference, 3–7 February 2001, All Seasons Resort, Barossa Valley, South Australia.
Details on http://www.maths.adelaide.edu.au/anziam2001

The *R&D* Management Conference 2001, 7-9 February 2001, Duxton Hotel, Wellington, New Zealand
Earlybird registration by Oct 31. Details on http://www.vuw.ac.nz/RDMgmt2001

NAISO Congress on Information Science Innovations, 17–21 March 2001, American University in Dubai.
Details on http://www.icsc.ab.ca/isi2001

Western Decision Sciences Institute, 30th Annual Meeting, 3-7 April 2001, Westlin Bayshore Hotel, Vancouver, Canada.
Call for papers, submission deadline: 1 October 2000
Contact: Professor Miles Nicholls, email: mnicholls@swin.edu.au

ISCS Congress on Computational Intelligence Methods & Applications, 19 – 22 June 2001, University of Bangor, Wales.
Details on http://www.iscs.ab.ca/cima2001

ISCS Congress of Soft Computing & Intelligent Systems For Industry, 26-29 June 2001, University of Paisley, Scotland.
Details on http://www.iscs.ab.ca/soco2001

Second European Conference on Intelligent Management Systems in Operations, 3-4 July 2001, University of Salford, United Kingdom. Details on http://www.orsoc.org.uk

International Conference on Industrial Logistics, 9-12 July 2001, Onikawa, Japan.
Contribution submission until 15 November 2000
Contact by email: lilianbarros@yahoo.com

Third World Manufacturing Congress 24-27 September 2001, Rochester Institute of Technology, New York, USA.

IEEE International Conference on Data Mining 29-2 December 2001, Silicon Valley, California, USA.
Details on http://kais.mines.edu