



# NEWSLETTER

Operational Research Society of New Zealand (Inc.)

Registered at C.P.O., Wellington, as a magazine

Jonathan Lermitt  
Editor

Electricorp, Box 930, Wellington  
(04) 723-550 **March 1990**

## New Members

A warm welcome to new members since the last newsletter.

Michael Greaney          Student          Auckland

Ernst & Young Management Sciences Ltd    Auckland  
Corporate Sponsor

## Editorial -Share your Thoughts!

This issue contains an interesting article by John Scott, currently visiting the University of Cambridge. This is a good example of the sort of material we need for the newsletter. So, if you've been anywhere interesting, done anything exciting in OR, then *share it with your colleagues*. What better way than an article in the *ORSNZ Newsletter!*

## Lost Members

We have no current address for a couple of our members. Would anyone knowing the current addresses of the following members please pass them on to the Treasurer, Rona Bailey

( P.O. Box 1335, Wellington, or  (04) 727-855 )

Carolyn Fisk                  Auckland  
Chris Comber                DMR Consultants, Wellington

# CALL FOR PAPERS

## 26th Annual Conference 1990

*Please put these dates in your diary:*

 **University of Waikato**, Hamilton.

 **Monday and Tuesday, 20 and 21 August**

### Papers:

Papers are invited on all aspects of the theory, practice and teaching of Operational Research. Each paper will be allocated about thirty minutes. Please submit either a one page abstract or a summary paper of up to six pages, before **April 30<sup>th</sup>**, to:

ORSNZ Conference Secretary  
Department of Management Science & Systems  
University of Waikato  
Private Bag 3105  
Hamilton, New Zealand.

Papers in the following areas would be especially welcome:

- OR Practice - particularly successful OR in Australasia.
- OR Education
- Applicable OR theory

The OR Education session is planned as a panel session, following some short presentations.

We intent to publish papers in summary form (up to six pages) prior to the conference. Summary papers will be required by **June 29<sup>th</sup>**. Further details on the format will be sent to authors in May.

**Students:**

Student papers are especially welcome. Student travel grants may be available; for details, contact the conference organisers.

**Invited Speakers:**

We are currently exploring possibilities with two overseas speakers. One is in the area of "OR and entrepreneurship"; the other in "Mathematical Programming".

**Publicity:**

There are many people outside the society doing interesting, OR related work. Therefore we would appreciate you publicising the conference, by, for example, passing on a copy of the Call for Papers.

**Registration:**

Registration forms will be available from the Conference Organisers and will be sent to members in due course.

**We are looking forward to an exciting and memorable first conference for Waikato.**

**Enquiries to:**

*Paul Cragg,*  
Department of Management Science and Systems  
University of Waikato, Private Bag 3105, Hamilton  
☎ (071) 562889 Ext 8103  
Fax (071) 384063;  
E-mail: IN%"P.CRAGG@WAIKATO.AC.NZ"

*John Buchanan* ☎ (071) 562889 Ext 8646

*Les Foulds* ☎ (071) 562889 Ext 8127

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**Are our models too complicated?**

“It is the mark of the educated man and a proof of his culture that in every subject he looks for only so much precision as its nature permits (or its solution requires)” - Aristotle.

**Coming Events around the World**  
**Exotic places to visit - Exciting new things to learn**

**IFORS 12<sup>th</sup> Triennial Conference on Operations Research**  
Athens, Greece

25-29 June 1990

Contact: Council Members will have details, or  
Apostolos Bobos, IFORS XII OC  
c/- Hellenic Operational Society  
20 Solomou St 5<sup>th</sup> floor, Athens 1066 82, Greece  
\*\*\*\*\*

**2<sup>nd</sup> International Conference on Economics & Artificial Intelligence**  
Paris, France

2-6 July 1990

Contact: AFCET - CECOIA  
156 bd Pereire, F - 75017, Paris  
\*\*\*\*\*

**Operations Research for Conservation, Development and Planning**  
21<sup>st</sup> Celebration Conference of the OR Society of South Africa  
Kruger National Park Game Reserve, South Africa

15-17 August 1990

Contact: Gordon Erens  
Department of Quantitative Management  
University of South Africa  
P.O. Box 392, Pretoria 0001, South Africa  
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**IFIP international Conference on Advances in Production Management Systems**  
Helsinki, Finland

20-22 August 1990

Contact: Prof. Raimo Haemaelaeninen  
Helsinki University of Technology  
Otakaari 1A, SF-2150 Espoo, Finland

**OPERATIONS RESEARCH 1990**

International Conference on Operations Research  
Vienna, Austria

28-31 August 1990

Contact: Prof G. Feichtinger  
Institut für Ökonometrie  
OR und Systemtheorie  
Technische Universität Wien  
A-1040 Wien, Argentinierstraße 8  
\*\*\*\*\*

1990 International Conference

**Operations research/Management Science: Techniques & Applications**  
Manila, Phillipines

11-14 December 1990

Contact: Ms Elise de Rosario  
San Miguel Corporation  
40 San Miguel Avenue, Mandaluyong  
Metro Manila, Phillipines  
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First IFORS specialised conference  
**DECISION SUPPORT SYSTEMS**  
Bruges, Belgium

27 - 29 March 1991 (Tutorial - 26 March)

Contact: Prof J.P.Brans, IFORS SPC 1  
VUB CSOO, Pleinlaan 2, B-1050 Brussels, BELGIUM

Deadline for Abstracts - 1 July 1990  
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**IFAC 9<sup>th</sup> Symposium on Identification and System Parameter Estimation**  
Budapest, Hungary

1-6 July 1990

Contact: Dr Margit Zierman  
Levay u. 9/A, H-1022 Budapest, Hungary

APORS '91  
2<sup>nd</sup> Conference of the Association of Asian-Pacific OR Societies  
Beijing, China

27-30 August 1991                      Deadline for Abstracts:              1 August 1990.

Contact: Prof Weiwu FANG  
APORS '91 Secretariat  
c/- Institute of Applied Mathematics  
Chinese Academy of Sciences  
P.O. Box 2734, Beijing 100080, China  
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## Your New Council

At the Annual General meeting in December, the following people were elected to Council:

**President:** Bob Cavana  
**Vice President:** Vicky Mabin  
**Secretary:** Gary Eng  
**Treasurer:** Rona Bailey  
**Committee:**

Hugh Barr	APORS
Jonathan Lermitt	Newsletter Editor
Tapas Sarkar	Student Affairs
Frances Sutton	Continuing Education and Professional Development
Andrew Smith	International
Victoria Willis	Minute secretary/circulation/ publications

In addition, Branch Chairpersons and the APJOR editors (Hans Daellenbach and Don McNickle) are *ex officio* on Council.

Please feel free to contact any member of Council who can assist you.

### Erratum

It has been brought to the Editor's attention that he consistently misspelled Karmarkar's name as 'Karmarker' in the last newsletter. His only excuse is that he typed it after a Christmas party, and was not in a fit state to do so.

What then does EL have to offer OR/MS? EL offers OR/MS at least three things.

Firstly, it offers a refreshing rate of change of well-founded concepts and ideas for injecting even more energy and relevance into our courses.

Secondly, the increasing rate of change in, and around, our discipline, and the fact that most of us now change career paths (not just jobs) three times in a working lifetime, is further justification for considering EL, for with EL comes increased encouragement to **learn how to learn**. If we do not have that ability, how do we learn, efficiently, new forms of knowledge or how to use that knowledge; how do we 'keep up'?

Thirdly, EL offers ideas on how the operating skills required of a practitioner can be introduced into the classroom. These skills, referred to here as the OR/MS process, are seen as fundamental to successful practice, but are often given cursory treatment because of the difficulty of teaching them. You see, it is my belief that the fundamental content of our courses is near enough for the moment, but the *process* we use to 'teach' the content should change. This should better reflect not only learning theory, but also the process of OR/MS. Therefore why not explain the process to the students and then work with it to tackle the tasks of building and carrying out the course, *together*.

#### REFERENCES

- [1] Boud, D (1988) What is Experiential Learning, Ch.1 in Higgs, J(ed), *Experience-based Learning*, Australian Consortium on Experiential Education, Sydney.
- [2] Kolb, D (1984) *Experiential Learning: Experience as The Source of Learning and Development*, Prentice-Hall, New Jersey.
- [3] Gibbs, G (1988) *Learning by Doing: A guide to Teaching and Learning Methods*, Further Education Unit, London,
- [4] Boud, D (1988,3) *Developing Student Autonomy in Learning*, Kogan Page, London.
- [5] Cornwall, M (1988) Putting it into Practice: Promoting Independent Learning in a Traditional Institution, Ch. 15 in Boud, D [4].

**John Scott**  
University of Waikato

# I.F.O.R.S.

INTERNATIONAL FEDERATION OF OPERATIONAL RESEARCH SOCIETIES

*letter from the president*

OPERATIONAL RESEARCH AND THE DEVELOPING COUNTRIES

No. 4 - Fourth Quarter 1989.

Is there a separate OR for the developing countries? If so, what makes it different from OR in the developed world?

It might seem unconventional to start a President's Letter in this way, but these two questions are fundamental and central to a major role of IFORS in promoting OR in the developing countries. Since its foundation, IFORS has dedicated a considerable amount of effort and time to the developing countries; yet there seems to be a lack of explicit policies to be followed in relation to these countries. Trying to answer why the situation is like that I came to the conclusion that it will be difficult for IFORS to implement specific policies unless OR practitioners from the developing world get together and decide what is important to them, what should be the role of OR in their countries, and how IFORS might help.

I could express my personal views, but I will refrain from doing so here. The issues are controversial. Some people might argue that OR is universal and that there is no basic difference between applying OR in the developed and developing countries, except perhaps for the more abundant resources of the industrialized countries. Others will strongly disagree and say that the problems encountered in the developing countries are of a different nature, and that different approaches/techniques should be sought and employed. Others still, with a more radical vein, will speak of class division within the OR world community.

In the last few years IFORS has taken positive steps to foster OR in the developing countries. The Third World Prize was created, and in spite of some criticisms many feel that this is a very good initiative. New IFORS Statutes have been approved, and these allow a broader representation of the regions at the Administrative Committee level. The Developing Countries Committee was created in the present administration, which is a sign of the importance IFORS attaches to the developing countries.

The situation is, of course, far from ideal, but it is too easy to criticize without taking the trouble of getting involved and doing some work. Are some colleagues unhappy about the Third World Prize and the way it is awarded? Well, rather than just saying it is patronizing or it is not properly administered, let us try to suggest ways to make the process more representative. Let us meet, draft policy documents, discuss and suggest new says. Let us decide how different we are and what are our needs. Let us work on getting funds from international agencies, rather than just expecting that someone else will do the job for us.

At this point I want to apologize for mentioning such a broad range of issues but I think it is important to throw out some ideas which are apparently disconnected, in the hope that people will react and that some action will follow.

When I accepted the invitation of Professor Pierskalla to be the Coordinator of the Developing Countries Committee, I had in mind to encourage discussion on topics of relevance to the developing countries in order to produce a formal document that would help IFORS to formulate specific policies for these countries. Later Professor Pierskalla suggested that a Workshop could be organized during the Athens Conference to discuss the important issues.

p.t.o.

This Workshop on

"OR FOR DEVELOPING COUNTRIES"

will be held on Tuesday, June 26, 1990 from 4:00 - 5:30 p.m. in Athens.

I invite you to attend or at the very least have your IFORS Representative attend to express your ideas. This is an opportunity for those of us from developing countries to take a step forward.

ROBERTO DIEGUEZ GALVAO

## Subscription to the Conference *Proceedings*

In order to widen the distribution of Conference papers and abstracts, we are offering a subscription of the Annual Conference Proceedings to libraries and overseas members.

If you would like to subscribe, please fill out the attached form, and send it (together with this year's subscription as shown below), to the Treasurer.

Those New Zealand members who cannot attend the conference can write in after the conference to obtain copies. Prices will be:

\$10 current conference

\$ 5 back copies

✂ -----

To:

The Treasurer  
ORSNZ  
P.O. Box 904  
Wellington

Please enter my subscription for the Annual ORSNZ Conference *Proceedings*

Name: -----

Address: -----

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Prices: \$10 Overseas Members  
\$15 Libraries (both in NZ and overseas)  
(prices include postage and handling)

## Problem Formulation in Operational Research

We hope that this workshop will open up the field of OR to the broader community, and consequently it has been advertised widely, for example in the newsletter of the *New Zealand Institute of Management*. Many of us, however, could do with 'refresher' courses, and this would be an excellent introduction to anyone wanting to extend their knowledge of OR. So do come, or bring it to the attention of others you know would benefit. Here are some notes on the tutors, which should give you a better idea of the subject material. Contact Frances Sutton (☎ (04) 725 564) if you require further information.

**Bruce Benseman** works at DSIR's Applied Mathematics Division, in the Operational Research Section, where he has been for 16 years. He is interested in all forms of computer modelling, with a particular interest in optimisation applications, visual interactive modelling and vehicle scheduling. He has worked in a number of industries, including the dairy, port, electricity and petrochemical sectors.

His seminar will cover various *methods of optimisation* that can be used in planning production, making long term investment decisions, rostering people to duties, locating new factories, and scheduling plant and machinery. Participants will learn to *recognise and formulate optimisation problems*, and how to solve them using mainframe and micro computers.

**Vicky Mabin** is also at DSIR's Applied Mathematics Division. She has a PhD in operational research from Lancaster University. Her clients include Telecoms, Tasman Pulp and Paper, and firms in the clothing industry. At the workshop she will talk about:

- *Inventory control methods* - how to manage your inventory when you don't know what the demand is going to be (for example, spare parts or service industries), and
- *Inventory and production planning for manufacturing* - how to manage production, including inventory, using techniques such as materials requirement planning, just-in-time and OPT (optimised production technology).

**Tony Vignaux** is professor of Operational Research at Victoria University of Wellington. He has previously worked in OR in England and at the DSIR. He now teaches and consults in OR. A major interest is simulation as a

modelling technique for assistance in making decisions. This is a technique for structuring problems to make decisions more rationally.

In his seminar on decision analysis Tony will discuss:

- listing objectives (possibly multiple)
- specifying constraints
- listing options for action
- describing possible outcomes
- establishing the value of extra information.

Examples of this technique include helping to decide on launching a new product or service, and whether to use a survey before taking a decision.

Tony's second seminar is on *queuing theory and simulation*. Queuing theory involves the study of systems with congestion. It has been used to determine, for example, the number of people staffing emergency phones.

Simulation can be used to model and solve problems of congestion. Uses include the study of ports, mailrooms, and other systems where loads fluctuate.

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### *Advertisement*

**Dash Associates** have sent us details of their Mathematical Programming package **XPRESS-MP** (see the enclosed flyer). Price varies according to the options purchased (modelling language, integer programming, etc) and according to the maximum problem size capability. Contact Dash for further details (the Editor has some additional information if you are in a desperate hurry). Please, if anyone uses these packages, let us know how they work out, so that we can put together a review.

### **A Happy Event!**

Our Vice President, Vicky Mabin, has taken time out from her AMD and ORSNZ duties to have a baby daughter - **Rebecca**. Astute readers of this periodical, and attendees at the last conference, will recall veiled references to this event in the item "An OR Job is not an Easy One" in the September 1989 issue. Congratulations Vicky and Chris!

# Workshop-Problem Formulation in Operational Research

The purpose of the workshop is to expose participants to a variety of quantitative problems in an Operational Research framework. It is designed for quantitative analysts from all fields who currently have little knowledge of O.R. techniques. The mathematical content of the course will be light, but participants with some tertiary training in mathematics (such as engineers or statisticians) will gain most benefit.

Topics will include:

- optimisation (mathematical programming);
- inventory and production scheduling;
- decision analysis (including multi-objective methods);
- queuing theory and simulation.

## TUTORS

Bruce Benseman } Applied Mathematics Division, DSIR  
Vicky Mabin }  
Tony Vignaux - ISOR, Victoria University

**DATES:** Thursday and Friday 19 and 20 April 1990: 9am to 4.30pm

**VENUE:** Seminar Room, 86 Fairlie Terrace, Victoria University

**FEE:** \$360.00 includes tuition, materials, lunches and teas, and GST

**ENROLMENT:** To enrol, complete the form below and post with fee or an authorisation to debit, by Thursday 12 April 1990.

*Come yourself - or send someone you know would benefit.*

✂ -----  
To: Centre for Continuing Education      GST No. 10-665-485  
Victoria University  
PO Box 600, Wellington                      ☎ (04) 758-677

Please enrol me in the *Problem Formulation in Operational Research* workshop.

Surname	Mr/ Ms	First Name
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Address:

Telephone: (Res)\_\_\_\_\_ (Bus)\_\_\_\_\_