

Combinatorics

VOLUME 10 (1988), NUMBER 2 AUGUST

The newsletter of the  
Combinatorial Mathematics Society of Australasia

ANNUAL SUBSCRIPTIONS



If there is a tick here, your membership fee  
is now due. Please send \$5 in Australian  
currency to the Treasurer of CMSA,  
(adding \$2 to foreign cheques  
to cover bank charges).

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Please be sure to fill in and return  
the form enclosed in this newsletter  
if you are interested in the 1989 conference.

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CMSA OFFICEBEARERS

*Director*

Professor Anne Street  
Dept of Mathematics

*Treasurer*

Dr Roger Duke  
Dept of Computer Science

*Secretary (till 31/8/88)*

Mr Rodney Wolff  
Dept of Mathematics

*Secretary (from 01/9/88)*

Dr Diane Donovan  
Dept of Mathematics

(All at the University of Queensland, St. Lucia, Queensland 4067, Australia.)

COMBINATORIAL MATHEMATICS SOCIETY  
of  
AUSTRALASIA

The Combinatorial Mathematics Society of Australasia was formed in 1978, with the aim (as stated in its constitution) of promoting combinatorial mathematics; this has been broadly interpreted as including the relevant areas of computing. It disseminates information about combinatorics and combinatorialists through its newsletter *Combinatorics*, and conducts an annual conference with refereed published proceedings. There are currently about 120 members from all over the world.

Any interested person is invited to join the C.M.S.A. Annual subscription for 1988 is Australian \$5, payable to C.M.S.A. Members receive the newsletter and a reduction in the conference registration fee. Please address all enquiries, giving your full name and address, to Anne Street or Diane Donovan at the address given overleaf.

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In 1990, the Australasian Conference on Combinatorial Mathematics and Combinatorial Computing will be held at Massey University, 3-7 December, 1990. For further information on this conference, please write to

Dr C.H.C.Little,  
Department of Mathematics and Statistics,  
Massey University,  
Palmerston North,  
New Zealand.

FIFTEENTH AUSTRALASIAN CONFERENCE  
on  
COMBINATORIAL MATHEMATICS  
and  
COMBINATORIAL COMPUTING

The Fifteenth Australasian Conference on Combinatorial Mathematics and Combinatorial Computing will be held at the University of Queensland, Brisbane, Queensland, during the week 10-14 July 1989. All interested persons are cordially invited to attend.

Contributed papers are welcome in all areas of combinatorics and combinatorial computing, pure and applied. Invited speakers include J. J. Cannon (Sydney), C. C. Lindner (Auburn), B. D. McKay (A.N.U.), R. C. Mullin (Waterloo), A. Rosa (McMaster), D. R. Stinson (Manitoba), R. Tamassia (Illinois) and C. Thomassen (Tech.U.Denmark). We plan to include in the conference a workshop on software and algorithms for combinatorial computing.

We hope to keep the registration fee to approximately \$60.

Accommodation will be available in Cromwell College, on the University of Queensland campus. (The college currently charges conference visitors \$32 per day for bed and breakfast.)

There will be an excursion on the Wednesday afternoon of the conference. At present we are considering one of the following: a trip to Toowoomba (inland from Brisbane, on the Darling Downs); a trip to Mt Tamborine (to see rainforest); a bus tour of Brisbane and its immediate environs (including some historic buildings); or a boat trip on the river and possibly to St Helena Island (formerly a convict settlement, now a National Park). The three bus trips would cost approximately \$20 each, the boat trip would be slightly more expensive.

The first circular is enclosed. Please fill it in to give us some indication of the numbers who plan to attend the conference, give a talk, participate in the workshop, and so on. Also please be sure to indicate which of the four suggested excursions you are most interested in, and to let us know if you have any alternative suggestions.

COMBINATORIAL MATHEMATICS SOCIETY  
of  
AUSTRALASIA

MINUTES OF THE ANNUAL GENERAL MEETING  
HELD ON 17 MAY, 1988, IN THE HEYDON-ALLEN BUILDING  
AT THE AUSTRALIAN NATIONAL UNIVERSITY

A.P.Street (Director) declared the meeting open at 5:20 p.m. and welcomed those present.

**1. Apologies.**

E.J.Billington, D.M.Donovan, R.W.Duke.

**2. Annual General Meeting, 1987.**

Minutes of the previous Annual General Meeting (Canberra, 25/8/87) were circulated. It was noted that, in item 6, the 1989(1) A.M.S. Conference was listed as to be held at the University of Melbourne; the Conference is now to be held at Macquarie University.

*MOVED:* That the Minutes be adopted and the change of details noted.  
(NEUMANN/BREACH/carried nem. con.)

**3. Business Arising from the Minutes.**

S.Williams suggested that the Australian Mathematical Society should be informed officially of the decision not to affiliate the C.M.S.A. with the A.M.S. The Director agreed to write an appropriate letter.

**4. Director's Report.**

The C.M.S.A. will hold one conference in 1989 at the University of Queensland (10-14 July). The 1990 Conference will be held at Massey University (3-7 December). A.Rosa, D.R. Stinson, R.C.Mullin and B.D.McKay have all agreed to participate in the 1989 Conference, which will include a workshop on combinatorial computing. The A.M.S. has agreed to meet half the cost of a speaker invited to both the A.M.S. (Macquarie) and C.M.S.A. (Queensland) Conferences.

The next newsletter will be distributed in June or July.

Discussion of the venue and other plans for the 1991 Conference was deferred to the next meeting.

**5. Statement of Accounts 1987.**

The Treasurer's report was noted. It was pointed out that no C.M.S.A. funds were used for the 1987 Canberra Conference; that is, the seed money given was returned without ever having gone through the 1987 Conference account.

Since the C.M.S.A. will soon be handling large funds, the 1988 Accounts will be fully audited.

## 6. Change of Constitution.

Attention was drawn to the notice of motion mailed to all members in March, 1988. B.H.Neumann asked why funds and assets should be distributed equally between the A.M.S. and N.Z.M.S., since the A.M.S. had contributed much to the C.M.S.A. in the past. B.D.McKay said that the N.Z.M.S. would be contributing substantially in future.

*MOVED:* That the motion be tabled and that it be considered at the next meeting. (STANTON/WALLIS/carried 9 pro., 1 con.)

## 7. General Business.

J.R.Scerry reported that she had written to private companies in an attempt to solicit funds for the C.M.S.A., but had had no success yet.

A.P.Street reported that the University of Queensland would allow the use of lecture theatres *gratis* for the July 1989 Conference, and that accommodation would be available at Cromwell College.

B.H.Neumann *MOVED* a vote of thanks to the present officers, who will continue in office for the next year. The motion was carried by acclamation.

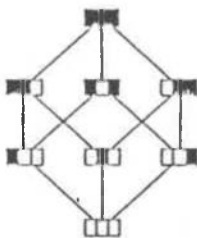
A.P.Street suggested that the meeting consider appointing an (honorary) editor with overall responsibility for a series of 30-page booklets on the applications of Combinatorics (to be used as a resource item for high school and undergraduate students). It was intended that one booklet contain Olympiad style questions; others in the general areas of block designs and coding theory had been suggested, in addition to those on the graph theory topics listed in the newsletter. Publication was to be in the spirit of the Aim in the Constitution, and it was hoped that publication would be profitable whilst providing support for high school students, Olympiad trainees, undergraduates and organisers of mathematical competitions. J.R.Scerry said that Australian Olympiad teams often performed poorly in problems of a combinatorial nature. There is a sufficient number of people interested in providing material. K.L.McAvaney had offered his services as series editor.

*MOVED:* That Dr McAvaney be appointed series editor. (FOULDS/BREACH/carried nem. con.)

Each booklet would cost approximately \$ 2.00 per copy to produce (via offset printing), and it was thought that \$ 3.00 - \$ 4.00 per copy was reasonable. It would be possible to print the booklets in Otago, where a cost price of no more than \$ 3.00 per copy had been quoted for a print run of 500 copies of any booklet. It was agreed to let the series editor proceed with arranging details of production.

There being no further business, the Director declared the meeting closed at 5:40 p.m.

DISCRETE  
MATHEMATICS  
BOOKLET n



# Intriguing Enticing Informative Title

Im The Author

COMBINATORIAL  
MATHEMATICS  
SOCIETY OF  
AUSTRALASIA

## DISCRETE MATHEMATICS BOOKLETS

At the general meeting of C.M.S.A. in May it was decided to proceed with the proposed series of booklets on discrete mathematics. It is envisaged that each booklet will be as self-contained as possible giving a concise account of a topic with enough examples, exercises, and problems to give the user a good understanding of the material. Thus a selection of booklets will provide a student or teacher with a relatively inexpensive alternative to a textbook on discrete mathematics. While most would be pitched at the undergraduate level some booklets could be designed for graduate use; for example, topic reviews, catalogues of examples and counter-examples, collections of problems, etc.

It is planned to have the booklets typeset by TEX and printed from a laser printed master. They would be approximately A5 size and have a distinctive cover design - a suggestion appears with this article. A retail price of around three dollars for a 30 to 50 page booklet seems reasonable. Advertising would be through society newsletters, conference handouts, etc.

Over twenty topics have already been suggested for the series but only a few of these have come with an offer of authorship. Amongst the latter we have "introductory cryptography", "combinatorial competition problems", and "number theory for discrete mathematics". Your suggestions are welcome; even more so your well written manuscript. Most of us have evolved lecture notes over some years, parts of which would transcribe to a booklet or two. Think about it.

Kevin McAvaney, Series Editor.

## News

### Recent Ph.D.Theses.

Richard Taylor, On some reconstruction problems, University of Melbourne (conferred 1987); supervisors Professors C.A.Miller and D.A.Holton; abstract: Bulletin of the Australian Mathematical Society 30 (1987) 527.

Diane M.Donovan, Topics in balanced ternary designs, University of Queensland (conferred 1987); supervisor Dr Elizabeth J.Billington; abstract: Bulletin of the Australian Mathematical Society 37 (1988) 311-312.

I.Rinsma, Existence theorems for floorplans, University of Canterbury (conferred 1987); supervisor Dr D.F.Robinson; abstract: Bulletin of the Australian Mathematical Society 37 (1988) 473-475.

D.G.Sarvate, Theory of combinatorial designs with applications to encryption and the design of experiments, University of Sydney (conferred 1987); supervisor Professor Jennifer Seberry; abstract: Bulletin of the Australian Mathematical Society 37 (1988) 467-468.

Christine M.O'Keefe, On  $t$ -spreads of  $PG((s+1)(t+1)-1; q)$ , University of Adelaide (conferred 1988); supervisor Dr L.R.A.Casse; abstract: Bulletin of the Australian Mathematical Society (to appear).

R.E.L.Aldred, Distance-regular antipodal covering graphs, University of Melbourne (conferred 1988); supervisor Professor C.J.Thompson; abstract: Bulletin of the Australian Mathematical Society (to appear).

Warwick de Launey,  $(0, G)$  designs and applications, University of Sydney (conferred 1988); supervisor Professor Jennifer Seberry; abstract: Bulletin of the Australian Mathematical Society (to appear).

### Other News.

Dr R.E.L.Aldred has been appointed to an assistant professorship, Department of Mathematics, Southern Illinois University, Carbondale, Illinois.

Dr Rex Matthews has been appointed to a fixed-term lectureship in discrete mathematics, School of Mathematical Sciences, Flinders University, Adelaide.

Dr D.G.Clynn has taken up a lectureship in the Department of Mathematics, University of Canterbury, Christchurch.

Professor Roger Eggleton will take up an appointment in the Department of Mathematics, Universiti Brunei Darussalam, in early January, 1989, initially for a term of 3 1/2 years. The department will then consist of nine people.

The university opened in October, 1985, in Bandar Seri Begawan. It has a current enrolment of 500 students, the first of whom are expected to graduate in August, 1989. It is still using temporary accommodation, while the permanent buildings are under construction.



**Fifteenth Australasian Conference  
on  
Combinatorial Mathematics  
and  
Combinatorial Computing  
10th-14th July, 1989  
University of Queensland**

First Circular

If you are planing to come to the conference, please fill in this form and return to

The Secretary, CMSA  
Department of Mathematics  
University of Queensland  
St. Lucia  
Queensland, Australia 4067

This form places you under no obligation, but will assist us in planning.

Name (title) and address:

Do you plan to give a talk?

If so, area of talk:

Title(approx):

Do you plan to participate in the combinatorial computing workshop?

Do you need accomodation in Cromwell College?

If so, for how many people?

Expected arrival date (and time):

Expected departure date (and time):

Do you wish to go on an excursion?

If so, which is your preferred choice?

Do you plan to attend the conference dinner?