



AUSTRALIAN INSTITUTE OF PHYSICS

South Australian Branch

AIP-SA secretary, SoCPES, Flinders University,

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AIP - South Australian Branch Annual Report 2003

2003 Committee of the South Australian Branch

Dr Peter Veitch (Chair)
Dr Olivia Samardzic (Vice-Chair)
Dr Shane Canney (Treasurer)
Dr Laurence Campbell (Secretary)

Dr Boris Blankleider
Ms Samantha Carter (Student Representative)
Ms Susan Cockshell
Dr Penny Hale (to June)
Dr Alex Kalloniatis
Dr Derek Leinweber
Dr Peter Bouwknecht

1. Meetings

The Meetings subcommittee, consisting of Kalloniatis (convenor), Campbell and Carter, organized a program of 2 Members' Lectures, 4 Public Lectures, a Student Night, and the Annual General Meeting with a dinner at the Public Schools' Club and an entertaining after-dinner speech by Emeritus Professor Angus Hurst.

The following meetings were organized:

- 6th March: Joint AIP/CSSM/NITP Lecture
"Complex Systems: From Subatomic Physics to Financial Markets"
by Professor Josef Speth (Inst. Of Nuclear Physics. FZ-Jülich,
and Helmholtz Institute, University of Bonn).
- 3rd April: AIP Public Lecture
"The Earliest Australians --- A Physicist Visits Australia's Past"
by Emeritus Professor John Prescott (University of Adelaide).
This meeting included the presentation of the Bronze Bragg Medal to
Adrian Cheng Hook Ting and 60 Certificates of Merit.
- 15th May: AIP Public Lecture "The Didjeridu: a triumph of mind over matter"
by A/Professor Lloyd Hollenberg (University of Melbourne)

- 4th August: AIP/ASSA joint lecture “Radio Telescopes of the Future”
by Dr Melanie Johnston-Hollitt (Leiden Observatory, The Netherlands)
- 21st August: AIP/NITP/WISER Public Lecture “Fast, Power-Rich Space Transportation Key to Human Space Exploration and Survival”
by Dr Franklin R. Chang-Díaz (NASA Astronaut and Director of the Advanced Space Propulsion Laboratory).
- 17th September: AIP Women-in-Physics lecture “Catch, Move and Twist Using Optical Tweezers”
by Prof. Halina Rubinsztein-Dunlop, University of Queensland.
This meeting included the presentation of the Claire Corani Memorial awards to Lisa Moon from Adelaide University and Alice Jagger from Flinders University.
- 16th October: Student Night, with speakers
1. Waseem Kamleh (School of Chemistry and Physics, University of Adelaide)
“The origin of mass (Well, most of it anyway)”
 2. Daniel Slaughter (School of Chemistry, Physics and Earth Sciences, Flinders University)
“Electron Scattering from Optically Pumped Cesium”
Including presentation of the Silver Bragg Medals to Mr Tyson Ritter (University of Adelaide) and Mr Jack Jasieniak (Flinders University)
- 27th November: Annual General Meeting and Dinner at the Public Schools’ Club
After dinner speaker: Emeritus Professor Angas Hurst

Members’ Lectures are typically attended by approximately 30 people while Public Lectures have a typical attendance of 100–200 people. However, the attendance at the WiP lecture was very poor, probably mostly due to not having the lecture during National Science Week, and partly due to an overly technical abstract.

AIP members are invited to dinner with the speaker prior to a lecture, and the public is invited to join the speaker during a supper after the lecture. Advertising for Members' Lectures is done through both postal and electronic mail-out of our occasional newsletter as well as through our web page. Public Lectures are advertised, in addition, through the Adelaide University newsletter "The Adelaidean", and the web-based "Inside Adelaide". Public lecturers Dr Chang-Diaz and Prof. Rubinsztein-Dunlop in addition gave interviews at a local radio station (5UV), but this is not always possible. (For example, Prof. Prescott had previously been interviewed.) Samantha Carter continued to maintain a display case in the University of Adelaide Physics Department, which included advertising upcoming lectures, often with background material on the topic of the lecture.

This year’s most successful event was undoubtedly the Public Lecture by A/Prof. Lloyd Hollenberg, which was attended by an estimated 200 people and managed to engage and excite the audience. We would like to thank Alex Kalloniatis and Samantha Carter for their hard work in organising this event. Our thanks to Dr Pina Dall'Armi-Stoks for helping to organise the SA leg of the Women in Physics Lecture Tour.

2. Science Policy (Science Meets Parliament Day)

Bouwknegt and Samardzic represented the AIP-SA at this year’s “Science Meets Parliament”(SmP) day, organized by FASTS, in Canberra on November 14th and 15th. Bouwknegt met with Fran Bailey and Meg Lees and Samardzic with Alexander Downer and Kim Wilkie. The meetings went well and generated much interest. Both Samardzic and Bouwknegt felt this was a valuable exercise and would strongly recommend AIP participation in the future.

3. Awards

As in previous years, the awards were coordinated by Blankleider. Throughout the year, the AIP-SA awarded Certificates of Merit to students who obtained the maximum Subject Achievement Score in Year-12 Physics in 2002, the Bronze Bragg Medal for the highest achievement in Year-12 Physics in 2002 and the Silver Bragg Medals for highest achievement in final undergraduate year to one student from each of the three SA Universities. In addition, the Claire Corani Awards for the best female students to complete Second Year Physics were presented during the WiP lecture by Prof. Halina Rubinsztein-Dunlop. Details of the recipients of these awards are given under the respective meetings.

The AIP-SA also sponsors the SASTA Oliphant Science Awards. This years' AIP-SA award was presented by Samardzic to Ashby Martin of Prince Alfred College.

Our nominee for the 2003 Gold Bragg Medal is Dr Michael Bromley of the Northern Territory University. Thanks to the AIP-SA Gold Bragg Medal sub-committee, Blankleider and Michael Brunger.

4. Web page

On our web page at <http://www.physics.adelaide.edu.au/aip-sa/> we have continued to provide up-to-date information on our branch activities, jobs and physics in general. The web page this year was maintained by Bouwknecht and Campbell.

5. Job Clippings

The SA branch continues to organise the scanning of the job adverts (paid for by the national branch) and the placement of these on our web page.

6. Student Travel Awards

One postgraduate student travel award of \$250 was awarded in 2003, to Miss Kate Nixon (Flinders University) in support of her presentation of three posters at the ICPEAC 2003 conference in Stockholm.

7. Education Subcommittee

The Education Subcommittee, consisting of Cockshell, Hale (until June), Roach, Samardzic (convenor) and Veitch, has maintained an extremely active program of events. This year they organized the year-12 Exam Wrap-up session in conjunction with the South Australian Science Teachers' Association (SASTA), the South Australian Space School, the Super Science Quiz and a Careers Night. Details are given below. The year-12 teacher professional development was placed on hold in 2003 awaiting the 2004 review of Stage 2 Physics. Possible future initiatives include the running of teacher training sessions for primary teachers (or providing at least some resources), in addition to the sessions held for secondary teachers, and the compilation of a database of potential speakers for schools.

a) Exam Wrap-up

Approximately 30 teachers attended the 2 hour Exam Wrap-up session of the Year 12 Physics exam, which was organized through SASTA. Feedback was provided on the exam answers as well as marking. Teachers find this a very valuable exercise and often travel reasonably long distances to attend the sessions.

b) South Australian Space School

The AIP together with the South Australian Space School Committee organized the seventh SA Space School (SASS) from the 16-19 July 2003. The school ran over 3 days and received sponsorship from DSTO and the Sir Ross and Sir Keith Smith Fund. The school was attended by a combination of city and country students, and had a larger proportion of female students than ever before. The SASS sends 4 students to the AISS annually and sent 1 South Australian student to the International Space Camp in the US in 2003, representing Australia among the 30 countries involved in this program. The SASS received a lot of publicity through newspaper and radio interviews.

The activities in 2003 included a talk by NASA astronaut Colonel Pamela Melroy, tours of RAAF Edinburgh, DSTO, Adelaide University Physics optics research labs, the Levels Planetarium, as well as model rocket building.

c) Science Quiz Night

The fifth annual AIP-SA Science Quiz for South Australian secondary students was held on August 22nd 2003 at the University of Adelaide. Approximately 78 students, gathered in 13 teams of 6 to compete for a Perpetual Shield and other prizes. Spot prizes were also awarded throughout the course of the afternoon. The Royal Show Organising Committee donated some tickets to the Royal Show as a prize. Other prizes were purchased through a \$770 State Government grant from the local National Science Week Organising Committee.

For the fifth year in a row St Peters Year 12 won, with St Peters Year 11 and Pultney Grammar coming a close second and third respectively. The Quiz consisted of six rounds of science and science fiction based question with heads and tails games, science demos and other activities taking place between rounds. Each of these activities attracted prizes.

d) Careers Night

A Careers Night for secondary and tertiary students interested in continuing in Physics was organised on September 19th at the University of Adelaide. There were five speakers:

- *Andrew Dowdy (Antarctica Atmospheric Physicist)*
- *Olivia Samardzic (Senior Research Scientist at DSTO)*
- *Mike Roach (Physics Teacher Hamilton High School)*
- *Eva Bezak (Medical Physicist)*
- *Norman Jones (Managing Director Coherent Scientific)*

Each of the speakers talked for about 10 minutes about their own career path with a joint question session following the final speaker. Pizza and soft drinks were provided at the conclusion of the session. Unfortunately only 12 students attended, due to a bad choice of the date for the event.

8. Video recording of events

Several years ago we proposed purchasing a video camera with which to record AIP-SA events, particularly year-12 teacher professional development sessions, which could then be loaned to people unable to attend. Early this year, a member of the public volunteered to video record various events at little expense to us. Unfortunately, after several attempts at which different lighting levels, etc were tried, it has become apparent that it is extremely difficult to produce a video that would be of use to anyone who did not attend the talk. This observation was confirmed by independent comments of one of the members who attended the AGM. We have therefore decided not to purchase the video camera.

9. Outlook

Main issues for the future remain to try to maintain our membership level, and to engage more members into participating in the Branch's activities. A particular issue is how to motivate our (free) 3rd year student members to continue their membership afterwards.

*Dr Peter Veitch
Chair AIP-SA
January 4th 2004*