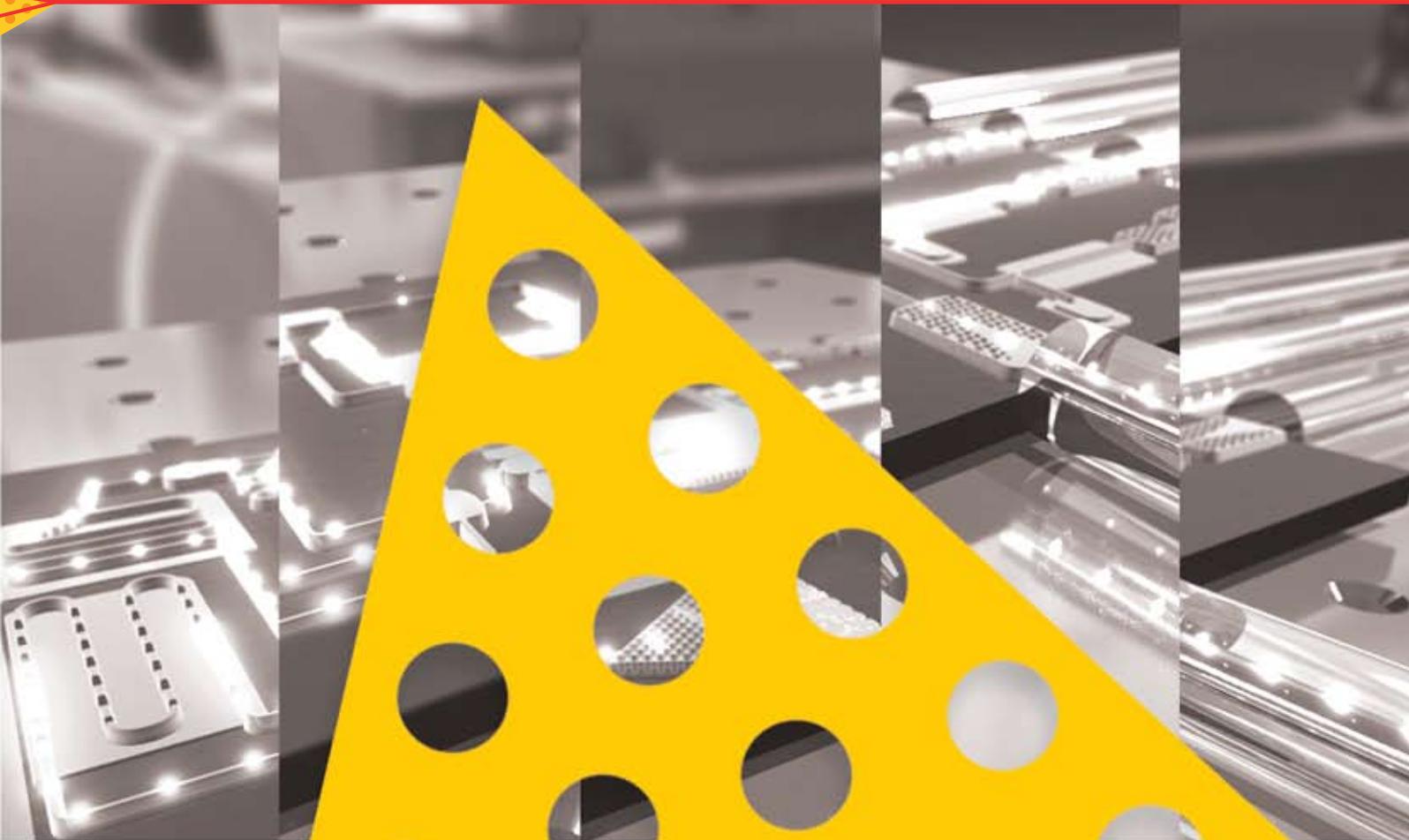




CUDOS

The Centre for Ultrahigh bandwidth Devices for Optical Systems (CUDOS)
An Australian Research Council Centre of Excellence



Annual Report 2007



◀ **Ms Kali Madden**
CUDOS Outreach Coordinator

CUDOS lights up the nation with public engagement

*"Science isn't just a career, it's a way of changing the world."*¹

Our Director received acknowledgement recently when identified as one of the nation's best young science minds² and later, as one of the most influential scientists in Sydney.³ Not only does this recognition reflect well on Ben and his scientific leadership, it also demonstrates the positive public opinion of the significance of the research being performed by the many highly respected members of CUDOS, and their capacity to communicate it.

Increasingly, the public communication of science and technology (or 'PCST') is becoming a priority, as science, engineering and technology (SET) student numbers dwindle⁴ and competition for existing talent increases globally. In addition, an emerging focus on scientific impact is raising interesting questions about how to capture and track the results of communications designed to increase public and peer awareness and engagement. These topics were amongst those discussed at the Australasian Research Management Society (ARMS) Annual Conference⁵ attended this year by two CUDOS outreach coordinators, Kali Madden and Emily Higginson. Just how collaborative research centres might best address these challenges has yet to be determined. Early evidence suggests that CUDOS is already proving successful in this area with much yet to come as the centre ramps up its public engagement leadership.

The past year has seen members across the board actively engaging with the community at many levels in increasingly professional and polished ways. Whether it was taking optics into the outback, photonics to science in the city, school talks, or teacher professional development, adults and children across the nation are being given the opportunity to learn just what photonics is about.

To learn more about CUDOS outreach activities (past and pending) see our web site and newsletters, or email Kali (kali@ics.mq.edu.au).

1. Kate Holdsworth, COSMOS Magazine, "Cosmos Bright Sparks: Australia's top 10 young minds announced". July 2006.
2. Cosmos Bright Sparks 2007. COSMOS Magazine.
3. The(top100): Sydney's most influential people (science). the(sydney)magazine (Issue #57). January 2008.
4. Audit of science, engineering & technology skills. Summary report. Department of Education, Science and Training. July 2006.

5. Fusion2007: collaboration with impact. 19-21 September, Adelaide Convention Centre.

Some 2007 Highlights

Optics in the Outback: CUDOS Students Demonstrate National Outreach Leadership Internationally

This outreach venture was designed with the aim of bringing the excitement of science and optics to school children in remote towns in the Australian outback. PhD students Christian Rosberg and Robert Fischer visited five schools on a week long trip in early March 2007. You can read about the experience in the May 2007 CUDOS Newsletter available online, or the articles mentioned below. The program was followed up by several presentations. The first was presented in conjunction with the Optical Society of America (OSA) Annual Meeting at the OSA Student Chapter Leadership Meeting in San Jose, CA, on September 16th. Presented by Amrita Prasad and Christian Rosberg, the project was nominated for an OSA student chapter excellence award. Christian later gave the same talk on October 19th at the annual "Founders Day" at the Research School of Physical Sciences and Engineering at the Australian National University (ANU). Additionally, two articles published to share the concept with the research community received very positive feedback. These were:

- C. R. Rosberg, R. Fischer, and A. Prasad, "Long-Distance Learning: Teaching Optics in the Outback," Optics and Photonics News, 18(6), 22 (2007).
- C. R. Rosberg, R. Fischer, and A. Prasad, "Optics in the Outback," Australian Optical Society News, 21(2) (2007).

These are significant results for national benefit, and provide a promising example for future collaborative outreach projects. The project was proudly supported by the ANU, OSA and CUDOS.





Text Book Science: CUDOS Researchers Engage Others in Technology Education

John Rochford, author of the secondary school text entitled "Industrial Technology", has revised his latest edition to now include direct references to all optical processors and their role in ultra high speed computing. These changes have come about after consultation with CUDOS researchers, and indeed, the text book includes direct links to the CUDOS website. This result goes to show that communicating one's science socially at BBQ's is well worth the effort.

Science Communication and Politics: CUDOS Covers it All

Minister for Science and Medical Research, The Hon. Verity Firth, had a number of opportunities to engage with CUDOS staff and students this year. At Science EXPOsed in October (the science event sponsored by the Office of Science and Medical Research [OSMR] for Years 9 & 10 students) CUDOS researcher Dr Mike Steel was recognised by former fellow high school attendee, Minister Firth. They discussed memorable things about their school days, including the school band (flute and trombone respectively), before moving on to the interests and concerns of high school students now. These include the anticipated applications of scientific research, and their likely impact on the world, as students know it, particularly in regards to the environment. When discussing potential applications of CUDOS bandwidth devices, Verity pointed out that the results of CUDOS research would be hugely beneficial in areas such as remote mammography which relies on very high resolution images for geographically removed radiologists to perform effective and accurate diagnoses. Only a month earlier Verity had the opportunity to tour the CUDOS labs at Macquarie University as part of a large delegation from the OSMR. In November Minister Firth hosted a New South Wales Science Communicators event aimed at fostering strategies for enhancing both government and public understanding of the role of science. Our director Professor Ben Eggleton, along with other key science and communication professionals, attended the event.



The CUDOS Outreach team, photographed at the recent CUDOS Workshop.



Summary

2007 CUDOS OUTREACH ACTIVITY SUMMARY

#	What was it?	Who was it for?
12	Interactive Talks	School Students
10	Hosted Student Researchers	High School Students
4	Industry Events	Various Industries
3	Science Expos	School Students
3	Group Lab Visits	School & TAFE Students
2	Special Group Lab Visits	Minister OSMR/ International Research Group
2	Outreach Lectures	University Students
2	Science Careers Events	School Careers Advisers and School Students
1	Science Media Event	Science Journalists
1	Student Workshop	Undergraduate Students
1	Special Public Lecture	Public
1	Hosted Professional Development	High School Science Teachers
1	Animated Science Graphic to Communicate Research Goals	Public
1	Physics/Education/Outreach/Computer Science Collaboration	School Students
1	Secondary School Text Book Contribution	High School Students