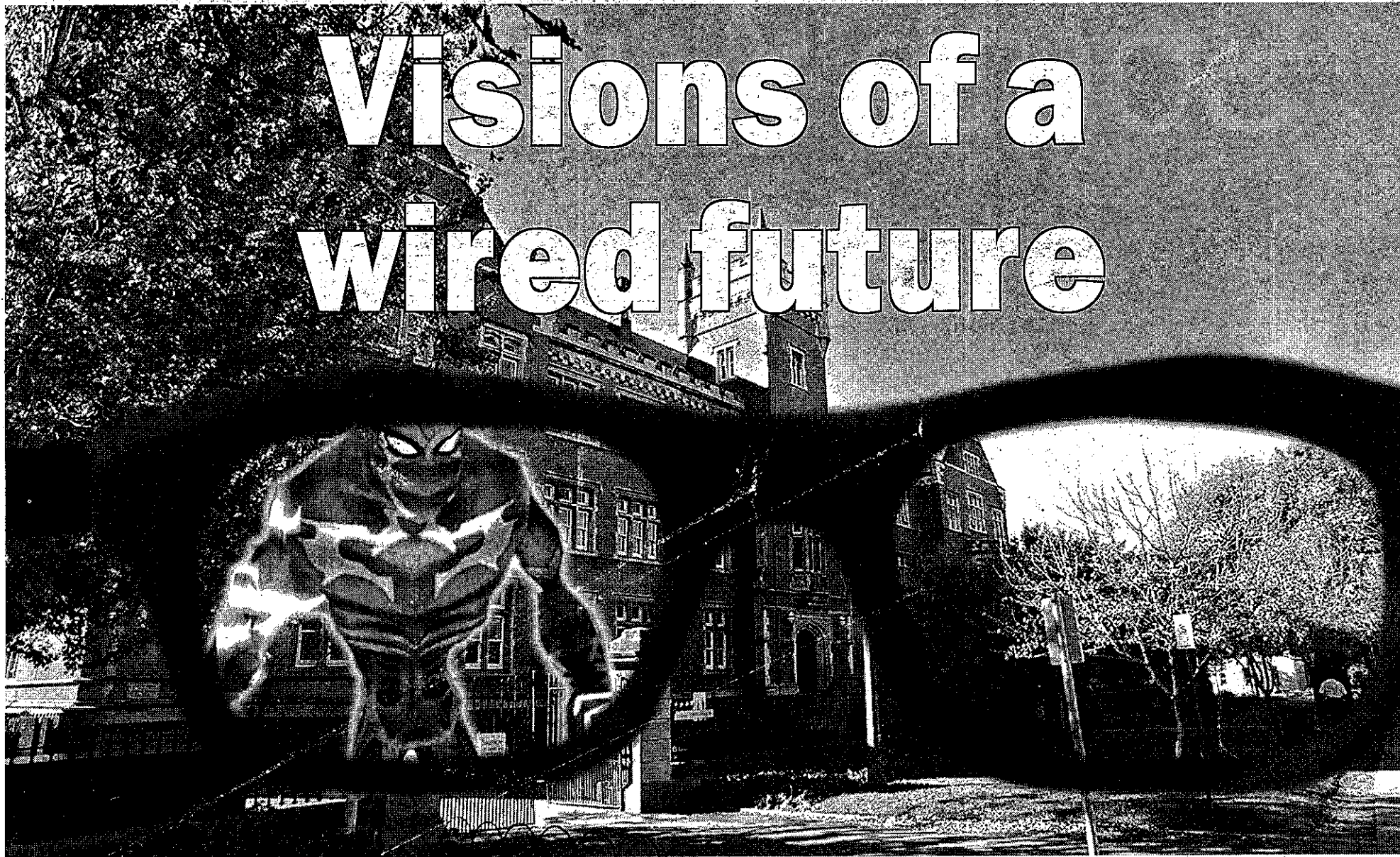


NEWSPAPERS IN EDUCATION

The Advertiser

www.news.com.au



Visions of a wired future

It's the week to get into science

THE following is a list of several National Science Week events being held in Adelaide. This is only a small selection, and students, teachers and members of the public should visit the web site www.scienceweek.info.au for further events and details.

May 1-19 - Robotics: an Educational Experience - the latest in Lego technology, 9.30am-4pm. The Investigator Science and Technology Centre. 8410 1115.

May 3 - Science in the Pub - alien abductions, 7pm. Rob Roy Hotel. 8277 6427.

May 4-6 - University of SA Street Science visits Elizabeth City Centre - wearable computers, snakes, lizards, frogs and a solar car. Various times. Consult web site for location.

May 4-5, 8-9, 11-12 - Dinner with the Dinosaurs - an interactive children's show, 10am and 11.30am. Adelaide Botanic Garden. 8222 9344.

May 5 - South Australian launch of National Science Week, 4pm. Rundle Mall canopy.

May 5 - Heights Public Star Party Viewing Night - 10 and 12-inch telescopes available for viewing to the public, 7pm. Small fee. The Heights Observatory, Brunel Dr, Modbury Heights. 8284 7660.

May 5 - Douglas Scrub Star Party - view the planets through telescopes, 7pm-11pm. Small fee. Douglas Scrub Observatory, McLaren Flat. 8284 7660.

May 7 - Reef Watch: the Great Fish Count, 10am-1pm. Esplanade, Saltfleet Rd, Port Noarlunga. 8223 5155.

May 7-8 - University of SA Street Science - science and technology expo, 10am-4pm and 10am-3pm respectively. Levels Campus, University of SA, Mawson Lakes. 8302 5771. www.unisa.edu.au/streetscience

May 8 - Science in the Riverland - free science-themed breakfast, 7am, Renmark. 8363 6901.

May 9 - Official opening of the Kangaroo Telescope, 11.30am. G-Range near Woomera Airport. 8303 5291.

May 12 - Science Saved Me From Sport! A debate and question session organised by Youth ANZAAS for Year 8 to 12 students, 7pm-9pm. Rennie Lecture Theatre, University of Adelaide. 8303 4955.

Monsters and aliens could be sharing the playground in the next few decades, thanks to new technology being produced in South Australia. Education Editor **SCOTT MONK** reports on some of the wonders of National Science Week.

IMAGINE wearing a pair of glasses that allows you to see monsters in the real world. One minute you're walking around your local school or campus. The next, a bloodthirsty alien pushes its way through the other students and lunges towards you. With a press of a button, you zap it into a million pixels.

Sounds bizarre? It could be the future of computer games, thanks to South Australian researchers.

At the moment, background scenery in games is computer-generated. In well-known games such as *Tomb Raider*, players walk through the Great Wall of China, Atlantis and Indian temples. The scenery can be dull and sometimes awkward.

However, a group of University of South Australia researchers have been working on how best to use a pair of glasses that will allow people to walk around in the real world and play games using real scenery.

The only computer-generated images would be the monsters and aliens projected on to the inside of the lenses.

If players want to blast monsters in Rundle Mall, Belair National Park, the Botanic Garden, West Beach Caravan Park or even a golf course, all they'll have to do is don the special glasses, then wait until nasties jump out at designated spots.

The technology is known as augmented reality, according to Dr Bruce Thomas, senior lecturer with the University of SA's

School of Computer and Information Science. "Originally I got interested in the idea of augmented reality back when I used to work for the National Bureau of Standards in the United States," Dr Thomas says.

"I used to work in a manufacturing laboratory. I thought it would be great if the supervisor could just look out on the factory floor with a pair of magical glasses and see what job was happening at every machine. Or alternatively, if a machine was down, then a virtual flag would come up next to it, and they

is only a pet project of Dr Thomas' team. Augmented reality has many more practical applications. By wearing a pair of glasses, architects or builders could show people as yet un-built extensions to their houses.

Firefighters could locate people trapped in smoke-filled rooms thanks to computer-generated arrows pointing the way.

Civil engineers could show council workers where underground pipes should be placed.

Doctors could identify areas where surgery or incisions were

are little more than symbols on a wall. They help overcome inaccuracies about what angle the person is looking at and the person's location.

All this information is then processed. In a game environment, the computer will then generate an image - such as a monster - on to the glasses. The monster will start running towards the player, growing larger and larger as it approaches.

The information is displayed on the inside of the glasses only. There is no projection into the real world beyond that.

If a person moves around a computer-generated object, they will see the side of that object.

Dr Thomas and his team's research is one element of National Science Week, which is being celebrated now and runs until May 19. This weekend, the university will host more than 60 sessions on biodiversity, information technology, engineering, chemical technology and telecommunications.

State co-ordinator of National Science Week, Mr Robert Perrin, says the carnival is important because "it allows students to interact with a number of scientific disciplines that they otherwise might not have the opportunity to access in their school curriculum".

"Because of constraints on spending and the availability of teachers with different knowledge and skills, these days it's difficult for students to access a huge range of aspects of science," Mr Perrin says.

Firefighters could locate people trapped in smoke-filled rooms, thanks to computer-generated arrows pointing the way

would walk over to it and see what was wrong with it."

Dr Thomas is developing augmented reality technology primarily for outdoor use - believed to be a world first. He is joined by a group of PhD and honors students - Wayne Piekarski, Benjamin Close, Phillip De Bondi, John Donoghue, Michael Morris and John Squires.

Meanwhile, with augmented reality still in a stage of infancy, small research teams across the world are now developing indoor augmented reality.

The gaming side of the glasses

needed. Helicopter pilots on rescue missions could identify friendly and enemy soldiers.

So how does the technology work? People first put on a pair of the glasses, which are seen through computer displays. These are linked to a backpack which contains a wearable computer, digital compass and global positioning system receiver. The user then walks around in the real world. The compass, GPS and wearable computer detect the wearer's location. Occasionally, the wearer will come upon a "target". These targets