

THE clarion call for “more scientists” rings out loud and shrill, but it seems to be falling on deaf ears. The number of students choosing to study science at school is falling at the same time as hi-tech industries, such as mining and defence, scramble for staff with the right qualifications.

Only 18.8 per cent of South Australian Year 12 students were studying science subjects in 2005, down from 29.2 per cent in 1995.

But skilled job vacancies in SA increased by 12 per cent in the year to March, 2007, as major projects such as the planned Olympic Dam expansion and the air warfare destroyer project push demand for engineering, electrical and electronics workers.

The popular image of scientists is partly to blame for the decline in science studies. Sure, the stereotypical mad professor – elderly male in a white coat hovering over test tubes – does exist.

But there are plenty of young, groovy scientists breaking the mould. These scientists can just as easily be found on fishing boats, wrestling huge fish in the name of research, or performing scientific rock concerts for hordes of screaming schoolgirls (and boys). They look pretty good too.

August is the month for scientists, young and old, to come out – loud and proud.

The patron of National Science Week in South Australia, Professor Rob Morrison, who is perhaps best known for hosting *The Curiosity Show*, says it is “terribly important” to celebrate heroes of science.

“If you’re interested in sports or the arts, then every day you open the paper there is a reaffirmation that your interest is shared by other people,” he says.

“There’s endless coverage of those subjects, but if you are not interested in sport and you are interested in science, people call you a geek or a nerd. So you tend to suppress or hide your interest.

“Then for National Science Week, from everywhere people come out and there is just this huge affirmation that science is interesting, it does get lots of people involved and an interest in it is valid.”

Science Minister Paul Caica says science plays a “pivotal role in our rapidly evolving economy”. He says a failure to engage young people in the sciences will have severe consequences. The major concern is skills shortages. Industry needs to be innovative and apply the latest science and technology in order to survive.

The state’s chief scientist, Dr Ian Chessell, wants to make SA the science state.

“My objective as chief scientist is to have SA known not only as ‘the wine state’ or ‘the defence state’ but, fundamental to all these capabilities, ‘South Australia – the state of science,’” he says.

“If we can make this vision a reality then it will be a major contribution to our future.”

Dr Chessell is the former Commonwealth chief defence scientist and head of the Defence Science and Technology Organisation.

National Science Week officially runs from August 16 to 24, but in SA the party lasts much longer.

Go to www.scienceweek.info.au to find out what’s on and discover the groovy geek in you.



THE SHOW GOES ON

David Lampard and Susie D

Spectacular science experiments and rocking music combine for family fun in the Rock Chick & Science Geek shows.

Self-confessed science geek Lampard is perhaps best known as host of the Channel 9 children’s science program Y.

He studied science at the University of Adelaide but his career took a turn from the lab to the stage. Now he is a first-class science performer.

He says cool science and hot rock collide in the “brilliantly unique and seriously explosive” concerts.

“We blow stuff up while singing rock songs,” he says. “It’s most definitely the most amount of fun I’ve had in any job.”

Lampard directed the recent sold-out season of *Les Miserables* for the Gilbert & Sullivan Society and has appeared on stage in professional musicals.

He also established the South Australian science communication company *That Science Gang*, which visits more than 20,000 students throughout the state every year.

“I’ve been able to combine my interest in science with my love of the arts,” Lampard says. “I’m brilliantly lucky.”

The other half of the Rock Chick & Science Geek duo, singer-songwriter Susi

D, has performed both nationally and internationally with Patch Theatre Company. She helped shape the performance *The Fastest Boy in the World!*

With her band Salty, Susi D has toured nationally, supporting artists such as Sophie B. Hawkins and Katie Noonan.

She says she loves the “emotional spectacle” of the scientific rock concerts.

“You get lost in the songs – carried away by the sheer fun of it all – and then suddenly you’re watching this thrilling science demonstration with smoke and steam going everywhere and the kids – and the parents – are screaming for more,” she says.

“I hope I get to do this for a very long time.”



BIG BANG

Associate professor Joe Shapter

The looming threat of terrorism offers a great excuse to blow things up in the name of science.

Shapter, of Flinders University, says his experiments are “really good fun”.

“Things change colour and that’s quite neat,” he says. “You get a bit of a pop or a bit of a bang, you get to see something a bit exciting.”

The national Centre of Expertise in Energetic Materials is a partnership between Flinders University and the Federal Government’s Defence Science and Technology Organisation. The research is also of interest to the mining sector.

Shapter says the aim of the game is either to “make the bang bigger, or smaller – you may want to do either” or “make the bang only happen under a particular set of conditions”.

“You want your materials to be safe;

you don’t want bombs going off by accident,” he says.

The team is also working on new ways to detect explosives within airport security systems.

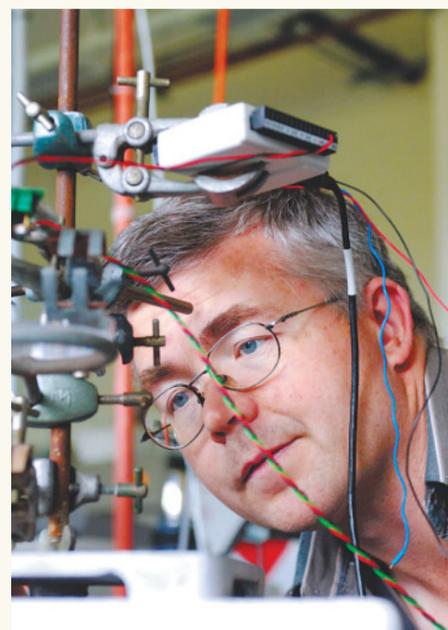
“One of the biggest issues for the military is the ageing of munitions and the potential for older explosives to become dangerously unstable,” Shapter says.

“The benefits of research on older explosives could also yield new ways for countries which have seen conflict to safely deal with discarded landmines and cluster bombs.”

In his spare time, the married father of two boys likes to educate and entertain with his very own scientific magic show.

“I make water disappear, make paper clips float, blow up balloons and make volcanoes – six-year-olds love volcanoes,” he says.

“It’s fun first and then science second for young ones.”



GONE FISHING

Dr Kate Hutson (marine biologist)

Reeling in a large kingfish is part of the job for Hutson. Her working life revolves around fish – whether it is trying to hook snapper, whiting, garfish or Australian salmon, touring the markets or hounding game fishermen at tournaments.

But rather than a good feed, it is the parasites in the fish she is after. She looks for white spots in the muscle, or wriggling worms.

“Every wild fish species has some kind of weird parasite along for the ride,” she says. “While some parasites may cause damage to wild and farmed fish, other

parasites are harmless and simply hang on for a place to live.

“For example, blood fluke have been associated with farmed fish kills overseas, while most fish don’t seem to be bothered by other species of fluke in their guts.”

In the course of her PhD at the University of Adelaide, Hutson has discovered new species of fish parasites.

She says most fish parasites have yet to be studied or described.

Her current project has been funded by the Australian Biological Resources Study and the Fisheries Research and Development Corporation, because both groups want to maintain biodiverse and sustainable fisheries.

A new website will help fishers identify parasites in their catch.

“Some parasites can make people sick if fish are not thoroughly cooked or are eaten raw, but most of the time we digest parasites without knowing we have eaten them,” Hutson says. “Microscopic parasites in the flesh of fish are particularly unappetising, as they can cause the flesh to turn to mush when it is cooked.”

Parasite expert Ian Whittington, from the SA Museum, says Hutson’s personality and networking skills have contributed to her success.

She works closely with the fishing and aquaculture industry, and recreational and game fishing clubs. Keen fishers have been helping Hutson collect parasites.