

INCREDIBLE S C I E N C E

Join the Faculty of Science at The University of Auckland

When?

MONDAY 6th July 2009
9.30am – 3.30pm

Where?

The University of Auckland's city campus

What?

An open day full of fun with interactive activities, lectures, shows and displays

Who?

Aimed at primary and intermediate aged children and their families

For further details or copies of the programme please contact (09) 373 7599 x 88925 or email incrediblescience@auckland.ac.nz

All events are free and there is no need to register to attend

CHILDREN MUST BE ACCOMPANIED BY AN ADULT AT ALL TIMES



HELP & INFORMATION DESKS



For copies of the programme, give-away bags and assistance in locating venues:

- Outside the Science Centre (23 Symonds Street)
- Outside the Recreation Centre (17 Symonds Street)
- Outside the Biology Building (5 Symonds Street)
- Outside the General Library (5 Alfred Street),
- Outside the Owen G Glenn Building (12 Grafton Road)
- Inside the Engineering Building (20 Symonds Street)
- Inside the Faculty of Science Student Centre.



SHOWS



Please note: Entry to the following two shows will be by ticket only. **Due to the popularity of these shows, there will be a maximum of 6 tickets issued to adults to one show only.** Tickets will be available in SciSpace (Room G16 of Building 303) from 9am until lecture theatre capacity is reached. **Note that there will be queues and tickets will go quickly.**

Chemistry Magic Show

A spectacular show of light, colour and explosions!

Times: 10am, 12noon, 1.30pm, and 3pm (Shows run for half an hour)
Venue: Large Chem lecture theatre, Ground floor, Science Centre, 23 Symonds Street
Tickets: Entry by ticket only. Tickets available from 9am in SciSpace (Room G16, Building 303, Science Centre, 38 Princes Street).

Wow Physics Show

See Dr H.G. Wells demonstrate how Physicists deal with Aliens **AND** learn some practical survival tricks that **YOU** can use if you encounter Aliens!

Times: 10am, 12noon, 1.30pm, and 3pm (Shows run for half an hour)
Venue: PLT1 lecture theatre, Ground floor, Building 303, 38 Princes Street
Tickets: Entry by ticket only. Tickets available from 9am in SciSpace (Room G16, Building 303, Science Centre, 38 Princes Street).

If you miss out on tickets to these shows, make sure you check out our 'Science or Magic', 'Paper Power' or 'Glassblowing' shows. These do not require tickets.

★ ACTIVITIES ★

Most activities will be running from 9.30am – 3.30pm. Please refer to the map on the back page or ask staff wearing 'Incredible Science' t-shirts if you require assistance in finding venues. **Please use the underpasses (marked on the map) or pedestrian crossings when crossing Symonds Street.**

ENGINEERING BUILDING (20 SYMONDS STREET)

Incredibly Bony Bodies

What's the recipe to building your incredible sporting body? Take one skeleton and add muscles, nerves and more! Come and take part in this hands-on approach to what makes us able to perform exercise and sport.

Times: 9.30am – 3.30pm

Venue: Foyer, Engineering Building 401, 20 Symonds Street

Clues at a Crime Scene

Check out some cool CSI gear and learn how different sorts of forensic evidence can be used to link offenders to crimes.

Times: 9.30am – 3.30pm

Venue: Foyer, Engineering Building 401, 20 Symonds Street

Light Metals: Transporting the World

Aeroplanes, submarines and cars - learn how light metals are used to keep us moving up in the air, under the sea, and along the earth. Metal Rocks! - how can different kinds of rock be turned into metal?

Times: 9.30am – 3.30pm

Venue: Foyer, Engineering Building 401, 20 Symonds Street

Incredible eyes!

Come and learn about different parts of the eye. Colour in your own picture of an eye, and design your own frame to take away!

Times: 9.30am – 3.30pm

Venue: Foyer, Engineering Building 401, 20 Symonds Street

BIOLOGY BUILDING (5 Symonds Street)

Scientists of the Future

What do scientists do in their labs all day? Try out a pipettor, separate samples by centrifugation and make some DNA!

Times: 9.30am – 3.30pm

Venue: Level 1, Biology Building, 5 Symonds Street

The Rough and Ready Rocky Shore

Feel, smell, see, squish, touch and sort plants and animals from Auckland's rocky shores. Can you tell a herbivore from a carnivore, a mollusc from a crustacean, a sponge from an echinoderm, sea lettuce from kelp?

Times: 9.30am – 3.30pm

Venue: Level 1, Biology Building, 5 Symonds Street

The McGregor Treasures

Who was Molly? What sort of animal is *Micrurus fulvius*? Whose egg is bigger – a thrush or a silver eye? Check out the McGregor Museum collection and see if you can answer all the quiz questions. If all your answers are correct you go into the draw for a mystery prize!

Times: 9.30am – 3.30pm

Venue: Level 1, Biology Building, 5 Symonds Street

GENERAL LIBRARY (5 Alfred Street)

Science or Magic?

Can you figure out the secrets of our magician? Is it science or magic?

Times: 10am, 12noon, 1.30pm, and 3pm (Shows run for half an hour. NO tickets required)

Venue: B28 lecture theatre, Basement, General Library, 5 Alfred Street

★ ACTIVITIES ★

GENERAL LIBRARY cont. (5 Alfred Street)

Window on the Library

Come and check out a visual feast on natural history, astronomy, prehistoric animals, volcanoes, optical illusions and more! Enter the science question draw and be in to win!

Times: 9.30am – 3.30pm

Venue: Entrance foyer, General Library, 5 Alfred Street

RECREATION CENTRE (17 Symonds Street)

SciQuiz!

It's a race with a difference! Teams of primary and intermediate aged children will be competing against the clock, and each other, in the race to be crowned SciWhiz-ards! Come and cheer on your favourite team and be in to win spot prizes!

Heats: Heat 1 - 9.30am; Heat 2 - 10.15am; Heat 3 – 11am; Heat 4 - 11.45am;
Heat 5 -12.30pm

Grand Final: 1.30pm

Venue: Competitors: Ground level courts, Recreation Centre, 17 Symonds Street
Spectators: Mezzanine level, Recreation Centre, 17 Symonds Street

FACULTY OF SCIENCE STUDENT CENTRE (23 Symonds Street)

Mini Degrees

Impress your friends and family! Test your knowledge at a number of today's activities and receive a "mini Science degree" from the Dean of Science. Questionnaires are available in your give-away bags, or from any of the help desks

Times: Events containing questions to the mini-degree will run throughout the day

Venue: Questionnaires can be picked up and handed in for marking at the Faculty of Science Student Centre throughout the day

BUILDING 301 (Science Centre, 23 Symonds Street)

Crystal Gardens

They have no soil and they grow crystals instead of flowers! Come and check out these 'gardens' with a difference. You'll also be able to see our giant home-grown sugar crystals.

Times: 9.30am – 3.30pm

Venue: Foyer, Ground Floor, Building 301, 23 Symonds Street

Get Slimed!

Our scientists have cooked up some gloopy, oozy, gooey slimes – touch them if you dare!

Times: 9.30am – 3.30pm

Venue: Foyer, Ground Floor, Building 301, 23 Symonds Street

Smashing Smarties

Find out with the food scientists just how much pressure these poor lollies can take! What is the equipment they are using really doing?

Times: 9.30am – 3.30pm

Venue: Foyer, Ground floor, Building 301, 23 Symonds Street

Glassblowing displays

Have you ever seen an elephant made of glass? What about a pig? Drop in and learn the secrets of glass blowers as they make a variety of things including creatures big and small!

Times: 10.15am, 12.15pm and 1.45pm

Venues: Medium chemistry lecture theatre, Ground floor, Building 301, 23 Symonds Street

The Exploding Earth and Dinosaur Discoveries

Come and see Earth's forces at work with videos of real, live, fiery volcanoes! We've all heard about T-Rex: he was the largest meat-eating dinosaur to walk the earth, right? These videos might change your mind!

Times: On the hour from 10am to 2pm

Venue: GEOL1060 lecture theatre, First floor, Building 301, 23 Symonds Street

BUILDING 301 cont. (Science Centre, 23 Symonds Street)The World of Fossils Big and Small

See lots of different kinds of fossils, some as tall as you are and others visible only under the microscope. Find out how fossils form. Bring in your own rocks and fossils for identification, or take some fossils and rocks home at the end!

Times: 9.30am – 3.30pm

Venue: First floor, Building 301, 23 Symonds Street

BUILDING 303 (Science Centre, 38 Princes Street)Braille Trail

Your mission, should you choose to accept it, is to unlock the mathematical secrets of Albert Park by following the clues in the Braille Trail!

Times: The Braille Trail will run continuously between 10.30am and 2pm, dependent on the weather.

Venue: Assemble in the Foyer of Building 303, 38 Princes Street

Penrose Patterns

Use a multitude of colours to create kings and queens, suns and stars and... a super-bird! Use your eagle eyes to spot the worms amongst the royalty, and learn how to uncover the hidden treasures in the patterns. Come and add your piece to the puzzle, and learn why it could go on into infinity without EVER repeating.

Times: 9.30am – 3.30pm

Venue: SciSpace (Room G16, Ground floor) Building 303, 38 Princes Street.

Fantastic Physics

Can you tame a tornado? Visit our miniature tornado generator and find out. Check out our amazing lightning balls, lasers, hoax mirrors and other 'hair-raising' tricks!

Times: 9.30am – 3.30pm

Venue: Stage One Physics Labs, Ground floor, Building 303, 38 Princes Street

Paper Power

Come in for a session of folding fun, and discover the maths hiding under the paper! Our Origami Masters will offer mathematical insights and entertainment for the inquisitive of all ages.

Times: 10am, 11am, 12.30pm, 2pm (Show runs for half an hour)

Venue: PLT2 lecture theatre, Ground floor, Building 303, 38 Princes Street

Statistical Hide and Seek

Have a game of Hide and Seek with a difference! In real life, scientists use games of Hide and Seek to count how many animals are living in a piece of forest. In our game, some of you will be animals (the Hiders) and some of you will be scientists (the Seekers)! Can the animals hide so well that none of the scientists can find them? Even if they can, the scientists will still be able to work out how many animals there are! Come along and see Hide and Seek played the statistical way!

Times: 10.45am, 12.45pm, 2.15pm (Runs for approx. 45 minutes)

Venue: MLT1 lecture theatre, Ground floor, Building 303, 38 Princes Street

BUILDING 303 S (Science Centre, access through BUILDING 303)Journey Around With James Cook on His FIRST Voyage to New Zealand.

Using our specially designed computer programme follow James Cook's first expedition around New Zealand and plot his route on a map. Learn why he chose particular names for a number of New Zealand's natural landmarks. Answer some questions correctly to gain stars and you will be awarded a certificate and some edible treasure!

Times: 9.30am – 3.30pm

Venue: Tutorial Room, Room G75, Ground floor, Building 303S

★ ACTIVITIES ★

BUILDING 303 S cont. (Science Centre, access through BUILDING 303)

Brain Teaser

Did you know that 100,000 different chemical reactions occur in a human brain EVERY SECOND? Find out more amazing facts about brains and take the opportunity to take our model brains apart! See some brain scanning equipment at work, and check out all the optical illusions and interactive computer activities on offer.

Times: 9.30am – 3.30pm

Venue: Computer Labs, Room G91, Ground floor, Building 303S

Web Design 101

A fun and interactive look at the basics of web page design. Suitable for children and all the family who want to learn about making their own web pages.

Times: 9.30am – 3.30pm

Venue: Computer Labs, Room B91, Basement level, Building 303S

Games Guru

Making your own computer games is not that hard. Make your own animations or simple games using different game programming tools. Demonstrations will be given at quarter past and quarter to each hour throughout the day. Our friendly volunteers will provide assistance to help you produce your own simple game.

Times: 9.30am – 3.30pm

Venue: Computer Labs, Room B91, Basement level, Building 303S

Computer Science...Unplugged?!

It's computer science – without a computer! Why can computers do maths when they only use the digits 0 and 1? How do they sort things out and play tricks on you? What does muddy city have to do with it all? Come along and get a glimpse of the magic that happens inside your computer. Best of all – even if there was a blackout, we could still give you the answers!

Times: On the half hour from 10am

Venue: Computer Labs, Room 191, First floor, Building 303S

3D face acquisition

Come and see the range of equipment used to acquire 3D data from any object, including multi-camera systems and a 3D scanner. Take home an electronic 3D file of your own face – bring along a USB key or leave behind an email address. (Demonstrations last 5 minutes and space is limited.)

Demo Times: 10.30am, 11.30am, 12.30pm, 1.30pm, 2.30pm

Venue: 3D Computer Vision Lab, Room 571, 5th floor, Building 303S



A series of fun 15-minute lectures will be running throughout the day featuring a variety of topics and speakers.

Lectures will be held in lecture theatres B28 (Library building), 1401, 1439 (Building 401, 20 Symonds Street), MLT1, MLT2, PLT1, PLT2 (Building 303, 38 Princes Street), Medium Chemistry and Large Chemistry (Building 301, 23 Symonds Street). Please refer to the map on the back page or ask staff for directions to these theatres. **Please use the underpasses (marked on the map) or pedestrian crossings when crossing Symonds Street.**

Yes, we had Dinosaurs - New Zealand was a Jurassic Park!

Did you know that dinosaurs once lived on New Zealand? In fact we have a rich record of the amazing animals and plants that lived at the same time as the dinosaurs....some of them whose descendants still live here today!

Come along and find out all about New Zealand's Jurassic Park, and the unique animals with ancient lineage.

Lecturer: Dr Dan Hikuroa

Times: 9.45am and 12.45pm

Venue: Eng1439 lecture theatre, Level 4 (street level), Building 401, 20 Symonds Street

Tsunamis – Monstrous Waves

Do we get tsunamis in New Zealand? Could Auckland be destroyed by a tsunami? What do you do if a tsunami strikes? Come and find out about why tsunamis occur and how science can help us understand how we can cope with these devastating natural hazards.

Lecturer: Joe Fagan

Times: 10.15am and 12.15pm

Venue: Eng1439 lecture theatre, Level 4 (street level), Building 401, 20 Symonds Street

Incredible Vision

Do your eyes deceive you? Well actually, yes, sometimes they do! Find out more about how our eyes play tricks on us with optical illusions and more. You'll also learn how red, green and yellow can look the same, and how some people see the world like a black-and-white movie.

Lecturer: Associate Professor Rob Jacobs

Times: 10.45am and 12.45pm

Venue: Eng1401 lecture theatre, Level 4 (street level), Building 401, 20 Symonds Street

What's Between Your Ears?

Have you ever wondered what your brain looks like? What it can do and how it can work, how you can best keep it safe and healthy. If so, this talk is for you. Bring a pen or pencil – and your own brain!

Lecturer: Michelle Burstall

Times: 10.45am and 2pm

Venue: SLT1 lecture theatre, Ground floor, Building 303, 38 Princes Street

Crime Scene Investigation – NZ Style

Forensic Science combines skills from many fields of scientific knowledge. This presentation will show, with real life examples, work performed by New Zealand forensic scientists in the investigation of crime.

Lecturer: Dr Douglas Elliot

Times: 11am and 2.15pm

Venue: B28 lecture theatre, Basement, Library Building, 5 Alfred Street

Your body, like a race car in so many ways!

Have you ever wondered how your body works during exercise? It is much like a machine (a race car)! There are different components that carry fuel, electrical messages, and those that do the mechanical work. Come and learn what makes your motor run!

Lecturer: Bart Kay

Times: 10.45am and 1.45pm

Venue: Eng1439 lecture theatre, Level 4 (street level), Building 401, 20 Symonds Street

How do we choose what foods to eat?

We are attracted to brightly coloured foods, such as red apples and yellow bananas but sometimes in nature bright colours can signal a warning of poison. Brown may indicate a food is rotten but it is also the colour of chocolate and cooked meat. Find out more about why we like some foods but not others.

Lecturer: Dr Bronwen Smith

Times: 11.45am and 2.45pm

Venue: PLT2 lecture theatre, Ground floor, Building 303, 38 Princes Street

 **"SCIENCE SPEAKS" LECTURE SERIES** 

How Do Glow Worms Glow?

What do glow worms, wintergreen lollies, and cello-tape have in common? Poke 'em in the right way, and they can all flash light. How on earth do they do that?! Come to the light show and find out about the wonders of luminescence!

Lecturer: Dr Cather Simpson
Times: 11.45am and 2.45pm
Venue: Eng1401 lecture theatre, Level 4 (street level), Building 401, 20 Symonds Street

Fish and Micro-chips

Each summer striped marlin and some of their well traveled comrades, like tunas, swordfish, and some sharks arrive in New Zealand before heading for the tropics during autumn and winter. High tech satellite tags are helping to understand who, what, when, where, why, and how.

Lecturer: Tim Sippel
Times: 12.15pm and 2.45pm
Venue: SLT1 lecture theatre, Ground Floor, Building 303, 38 Princes Street

Are you Paying Attention?

Are you really listening and taking in all that you see and hear? Put yourself to the test to see how observant you REALLY are (you will be surprised)! Earn brownie points with grown-ups - we'll give you tips on how you can improve your attention so you can do better at school, and stay safe when you are near the road!

Lecturer: Andrea Mead
Times: 9.30am, 11.15am, 1pm (Runs for approx. half an hour)
Venue: SLT1 lecture theatre, Ground Floor, Building 303, 38 Princes Street

SuperVolcanoes of the world

Did you know that the largest and most catastrophic volcanic eruptions on earth have never been witnessed by humans? How do we know that supervolcanoes exist? Where on earth are the supervolcanoes? Are there supervolcanoes in New Zealand? Come and find out!

Lecturer: Dr Darren Gravley
Times: 9.45am and 12pm
Venue: MLT1 Lecture Theatre, Ground floor, Building 303, 38 Princes Street

Global Warming – the Good, the Bad and the Ugly

We've all heard about global warming, but what's really at stake for New Zealand? Global warming will affect us as an entire country, but in different ways. Who will gain? Who will lose? What's the worst that could happen?

Lecturer: Marc Tadaki
Times: 9.45am and 1.45pm
Venue: Eng1401 lecture theatre, Level 4 (street level), Building 401, 20 Symonds Street

Sounds, smells and sights of Antarctica

Come and learn about the realities of living and working in Antarctica, from someone who has spent her summers researching penguins in the coldest place in the world! Smelly socks, an all day chorus of penguin calls and icebergs floating past the toilet door all make for an experience you'll never forget!

Lecturer: Emma Marks
Times: 11.30 and 2pm
Venue: MLT2 Lecture Theatre, 1st Floor, Building 303, 38 Princes Street

Live fast, die old – how birds master an age-old problem

Birds live much longer than mammals. For example, parrots can live to be well over 100 years old, a humble sparrow over 20, while a pampered lab rat can only manage 2-4 years. Compared to humans, birds also have very high blood sugar levels – so high that we would consider them to be diabetic. So why do birds not suffer any of the issues to do with diabetes? And why do they appear to resist many cancers? Does the secret lie in the evolution of flight, and could it provide solutions for us humans?

Lecturer: Tony Hickey
Times: 10am and 1pm
Venue: MLT2 Lecture Theatre, 1st Floor, Building 303, 38 Princes Street



"I'm hungry!" How do dolphins eat?

From birth, dolphins have to work hard to fill their stomachs. Come and hear about the unique ways in which dolphins are able to suckle, catch their prey and eat it without injury.

Lecturer: Rochelle Constantine

Times: 11.30am and 2.30pm

Venue: Eng1439 lecture theatre, Level 4 (street level), Building 401, 20 Symonds Street



IMPORTANT DETAILS ON THE DAY



Free Parking

Free parking will be available (while space is available) in the Owen G Glenn Building at 12 Grafton Road. Collect your ticket from the machine as you enter the car park, then swap it for an exit ticket at the Information Desks on Levels 0 and 1. The Level 0 Information Desk is located at the top of the stairs from the carpark, and the Level 1 Information Desk is located outside the building by the lifts. Please do not use the stairs by the lifts to Level 1 as they will be locked. **Please retain your exit ticket as you will need it to exit the parking building.**

Help and Information

Help and information desks will be located outside the Science Centre (23 Symonds Street), the Recreation Centre (17 Symonds Street), the Biology Building (5 Symonds Street), the General Library (5 Alfred Street), the Owen G Glenn Building (12 Grafton Road), the Engineering Building (20 Symonds Street) and inside the Faculty of Science Student Centre. Copies of the programme will be available at these locations, together with give-away bags. There will also be roaming guides wearing 'Incredible Science' t-shirts who will be able to assist you in locating venues.

Competitions!

We welcome your feedback about Incredible Science. Our information desks will have suggestion boxes where you can leave your comments. All forms will go in the draw to win a free copy of the *Incredible Science* book.

Food

The cafeteria and food court on the main campus will be operating between 8.30am and 3pm. They sell a selection of pre-packaged food, hot meals, sandwiches and fruit. Other small cafes in the Kate Edger Information Commons will also be open throughout the day.

A sausage sizzle will be operating in the courtyard outside the Recreation Centre between 10am and 2pm.

Rest Area

A rest area with seating is located in SciSpace, Room G16, Ground Floor, Building 303, 38 Princes Street.

Lost Children

Lost children will be taken to the Faculty of Science Student Centre on the ground floor of the Science Centre (23 Symonds Street). Phone 373 7599 x 87020.

Toilets

Toilet facilities are marked on the map. They can be found on:

Ground floor, Building 301, 303, 303S
Ground floor, Recreation Centre
Biology Building – Level 1/2 stairway landings
Basement, Library Building
Level 4 (Street level) Engineering Building

First Aid

First Aid will be available in the Faculty of Science Student Centre. Please call 373 7599 x 87020 for assistance.