

**2014**

*NIWA Manukau Science and Technology Fair  
Prize Giving Ceremony*

*Wednesday, 20 August 2014*

*Mission Heights Junior College Theater*

*7 to 9 pm*

*Masters of Ceremonies*

*Carol Duffield and Catherine Hunter*

<i>Welcome</i>	<i>Carol Duffield</i>
<i>Convenor's Address</i>	<i>Catherine Hunter</i>
<i>2013 Premier Award Winner Speech</i>	<i>Chris Ryan</i>
<i>Presentation of Category Prizes</i>	<i>Prize sponsors</i>
<i>Musical Interlude</i>	<i>MHJC students</i>
<i>Presentation of Special Awards</i>	<i>Prize sponsors</i>
<i>Presentation of the Premier Award</i>	<i>Ken Becker, NIWA</i>
<i>Closing</i>	<i>Carol Duffield</i>



# *Sponsor's Message*



NIWA again has the pleasure in congratulating students, parents, teachers and supporters who have worked so hard to ensure the success of the 2014 NIWA Manukau Region Science & Technology Fair. NIWA has a core interest in promoting science careers for young New Zealanders and the Manukau Fair is one of the ways we promote this interest in the region.

Science & Technology Fairs provide a great chance for students to actively participate in science projects. The enthusiasm is clear to see and the Fairs give an opportunity for students to gain recognition for excellence and innovation. Across the country thousands of students have been involved in researching, constructing, and presenting exhibits. Participation in Science & Technology Fairs is on its own a powerful learning tool. It should also be fun.

Naturally NIWA hopes that many of the students exhibiting at this years fair will go on to careers in science. The future achievements of our young scientists and technologists will lead the way to growing New Zealand's prosperity and in maintaining, restoring and caring for our remarkable environment.

NIWA is a major sponsor of the Manukau Region, Auckland City, Bay of Plenty, Waikato and Wellington– Science & Technology Fairs. This sponsorship is part of our long-term commitment to enhancing science and technology for young New Zealanders.

Thank you to members of the organising committee, judges, schools and all other sponsors for their commitment and support in promoting the NIWA Manukau Region Science & Technology Fair. Without your contributions and dedication this exciting science event for the students would not happen.

Dr Julie Hall

NIWA Education Manager



## GENESIS ENERGY REALISE THE DREAM

6 – 13 December 2014

Realise the Dream is a prestigious national event which rewards and celebrates 20 secondary school students who have undertaken an excellent piece of science research, technology or an electronics/robotic/computer science project.

Students are required to be nominated by their regional science and technology Chief Judge and then the nomination is sent to the Realise the Dream selection panel whereby all nominations undergo a rigorous judging process.

Students who are selected for Realise the Dream are rewarded with an all expenses paid week-long trip to attend the event. Realise the Dream starts in Auckland on 6 December and then travels down through the North Island finishing in Wellington where an awards function will take place at Government House.

There are some huge prizes that are announced at the awards evening which include cash scholarships and international travel.

The trip will involve visiting science institutions where they will be hosted by organizations such as the Liggins Institute, Fisher & Paykel Healthcare; Dairy NZ, AgResearch, and NIWA. The students will also be involved in various team building challenges and social events.

The Royal Society is indeed grateful of the support of Genesis Energy (the principal sponsor) and DairyNZ and the New Zealand Commission for UNESCO who are support sponsors of the event. The Royal Society would also like to thank the many science organizations who host the students and prepare workshops for them during the week.

More information about Realise the Dream can be found at [www.realisedream.org.nz](http://www.realisedream.org.nz).



New Zealand National  
Commission for UNESCO  
*Te Kōmihana Matua o Aotearoa mō UNESCO*

# Convenor's Report

Welcome to parents, teachers, principals, judges, committee members and sponsors. I would also like to extend a very special welcome to our distinguished guests, the sixty-three students we are about to recognize for their outstanding contribution to science.

To students in the audience tonight, you should feel very proud of yourselves. Many of you looked panic stricken while waiting to be judged but you put on a big smile, answered the judge's questions and have persevered. You have proven to be the best of the best and tonight we are here celebrating your success. With over 200 students participating, and a total of 170 projects, you certainly didn't make the judge's job easy this year!

The 2014 NIWA Manukau Region Science and Technology Fair was full of firsts. This is my first time as the Fair's convenor. For many of you, this will have been your first entry (and win) in a regional science fair. Now that the hard work is over, take this time to enjoy your success. Some other firsts of the 2014 Fair include the development of a new category award; Scientific Photography. This award was designed to encourage "non-science" students to think about science careers in fields like medical imagery and scientific drawing. The Manukau Institute of Technology has also created and sponsored the new MIT Engineering Award, which you'll hear about later in the evening. The Committee is also happy to have formed partnerships with new sponsors, Storage King, Botany North and Efficient Carriers.

While new things are great, everyone still loves things that never change. One thing that I am glad that doesn't change each year is the imagination students use to drive their scientific thinking. There were some pretty amazing exhibits this year. The projects were so good that we needed thirty judges to do justice to your creativity and problem solving skills. We must all remind ourselves that you and your inquisitive minds will be the ones driving the future of science and technology.

While we look ahead to future years and projects, it is important to reflect on, and acknowledge, the people who have helped us to reach tonight's event. The Fair is fortunate to have many generous sponsors and volunteers. These successful partnerships with school communities, businesses and organizations, some longstanding, have enabled us to positively recognize thousands of students over the past twenty years. I would like to thank our major sponsor, NIWA, for their continued support.

There are many other people who have contributed to the Fair: the committee members, the Kiwanis Club of Papatoetoe, the staff at Manurewa High School and Mission Heights Junior College, and the Mission Heights Junior College Family and Friends.

Finally a special thanks to the families and teachers of the exhibitors for the support that they have offered. The impact of this support is highly visible in the quality and depth of the projects.

I hope everyone has a wonderful evening and I'd like to remind you it's never too soon to start planning for next year.

Catherine Hunter  
Science Fair Convenor



# 2013 Premier Award Winner Speech

*Chris Ryan*

Congratulations being here tonight! You are among the most creative, innovative and curious young people around. It is my privilege to be here tonight. I remember a slightly younger version of myself being like you, not so long ago. I recall hearing about projects of incredible complexity and sophistication, just as you all will tonight.

My science fair journey has been a strange one. My first science fairs were not done willingly. We had to do a project at intermediate and my teachers and parents encouraged me to do it properly. To be fair, it was a total disaster. When I went to college we once again had to do another science fair project. However, this time I decided I would give it my best shot. Shockingly, as I am sure you all can appreciate, I had to concede that I enjoyed being able to develop, and then test, my own idea!

Then, in my last two years at school, I did the project that allowed me to be standing here tonight. I investigated the anti-inflammatory properties of the native Kawakawa plant. My path to doing this project was once again a bit bizarre. At the end of year 11, I thought I wasn't going to do science fair. Instead I was going to spend my last two years of school dedicated to getting into university. However, on a bus tour of Farewell Spit, we drove past a grove of Kawakawa. The bus driver said, "Look – there is a grove of Kawakawa. Māori think it is a very important medicinal plant but there is no scientific evidence to support this." I didn't believe him! I did some research and it became apparent that Kawakawa is used extensively in Māori traditional medicine but there is indeed, no scientific evidence to support this. At this point, I was hooked! My journey of seeking help and conducting research began. My research created a range of opportunities for me. I was the Premier Award winner at this Fair; I received my Gold CREST from the Royal Society of NZ, and attended Realise the Dream. At Realise the Dream, I won the American Ambassadors Outstanding Award and travelled to Los Angeles, California for the Intel International Science and Engineering Fair. Through these opportunities, I made tremendous friendships with some fantastic people and was able to travel to LA, visiting Disneyland, Rodeo Drive and getting to see the Hollywood sign. For all of you, science fair will create new opportunities and I encourage you to make the most of these experiences.

Before finishing up, I would like to emphasise three points. Be inspired by the work that you see here tonight. When I was first here I was intimidated by what others had done. In LA, it was amazing to see the types of projects entered by students younger than me. Just know that you can do whatever you set your mind to. Science is super cool and we all know it explains the world around us. Science fair is even cooler because it allows you to do your own research on something that is unique to you in a way that interests you. Make the most of your time researching your interests as it is something you won't get to experience again until near the end of university. Finally, the world needs young and passionate scientists. Humanity has a number of issues. The reality is that we scientists need to overcome these challenges together through research. Young people like you who are excited about science and trying to address scientific issues are part of changing the future.

Thank you very much for having me here this evening, it has been my pleasure. Best of luck. You should all be very proud of yourselves. Tēnā koutou, and good evening.

Chris Ryan  
Former Howick College Student



# Presentation of Category Awards

## Category 1 – Years 7 and 8 Living World Sponsored by Wai Shing Ltd.

Presented by Liz Palmer, Committee  
on behalf of Wai Shing Ltd

### FIRST PLACE

**Emma Hjorth**

*Cash or Card?*

Farm Cove Intermediate School

### SECOND PLACE

**Joy Tong**

*Letter Chaos*

Farm Cove Intermediate School

### THIRD PLACE

**Olivia Kieser**

*Ditch the Sugar*

Somerville Intermediate School

### HIGHLY COMMENDED

**Yash Shahri**

*What Nut Are You?*

Somerville Intermediate School

### HIGHLY COMMENDED

**Amy Scott**

*Power to the Plants!*

Drury School

### HIGHLY COMMENDED

**Benjamin Beach**

*Mung Bean Mutation*

Somerville Intermediate School

### HIGHLY COMMENDED

**Elizabeth Lightfoot**

*I wish that I had duck feet*

Saint Kentigern College

## Category 2 – Years 7 and 8 Physical and Material World

Sponsored by Gunac South Auckland GME Ltd.

Presented by Robyn Mekkelholt, Owner

### FIRST PLACE

**Ella Bernice Lee**

*Extravagant Elasticity*

Somerville Intermediate School

### SECOND PLACE

**Alexander Coleman-Chaiman**

*Bendy Beams*

Pukekohe Intermediate School

### THIRD PLACE

**Ethan Chaplin**

*Fast Space*

Farm Cove Intermediate School

### HIGHLY COMMENDED

**Catherine Burr**

*Tea – How do you take yours?*

Pukekohe Intermediate School

### HIGHLY COMMENDED

**Alexandra Collinson**

*Flaming Foods*

Saint Kentigern College

### HIGHLY COMMENDED

**Annalise Worsfold**

*Climbing the Walls*

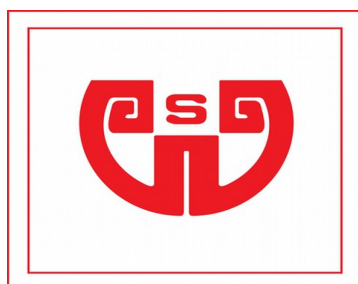
Farm Cove Intermediate School

### HIGHLY COMMENDED

**Joanna Coleman-Chaiman**

*Squeaky Clean*

Pukekohe Intermediate School



# Presentation of Category Awards

## Category 3 – Years 7 and 8 Environmental Science / Planet Earth and Beyond

Sponsored by the Kiwanis Club of Papatoetoe

Presented by Dave Young, President, Kiwanis  
Club of Papatoetoe

FIRST PLACE

**Savanah Konia**

*Got Sun Go Solar*

Howick Intermediate School

SECOND PLACE

**Oliver Gordon**

*Aquaponics*

Pukekohe Intermediate School

THIRD PLACE

**Ethan McCormick**

*Gone to the birds?*

Somerville Intermediate School

HIGHLY COMMENDED

**Jake Hoggart**

*Will it Grow*

Drury School

## Category 4 – Years 7 and 8 Intermediate Consumer Science

Jointly sponsored by the Kiwanis Clubs of  
Shamrock and Drury

Presented by Dean Tohill, President, Kiwanis  
Club of Shamrock and Dianne French, President  
Kiwanis Club of Drury

FIRST PLACE

**Jamie Hughes**

*Germbusters*

Somerville Intermediate School

SECOND PLACE

**Ella Francois**

*Leaky Liquids*

Somerville Intermediate School

THIRD PLACE

**Aiden Iqbal**

*Bubble Trouble*

Somerville Intermediate School

HIGHLY COMMENDED

**Peter Gin**

*Water Resistance of Fabrics*

Saint Kentigern College

HIGHLY COMMENDED

**Cindy Yin**

*Safe and Sound Soap*

Rosehill Intermediate School

HIGHLY COMMENDED

**Alice Park**

*Childproof or Adultproof?*

Somerville Intermediate School



**Kiwanis Club of Papatoetoe**



**Kiwanis Clubs of Shamrock  
and Drury**

# Presentation of Category Awards

## Category 5 – Years 7 to 10 Technology / Innovations

Sponsored by KP Group Ltd

Presented by a representative from  
KP Group Ltd

FIRST PLACE

**Dylan Townsend**

*Caution, Child on Driveway*

Mission Heights Junior College

SECOND PLACE

**Thomas Williams**

*Aqua Applicator*

Pukekohe High School

THIRD PLACE

**Lily Hart**

*Paws off!*

Drury School

HIGHLY COMMENDED

**Sophie Chen**

**Avinash Sathiyaseelan**

**Ashley Taimataora**

*Cars Kill, Bikes Thrill*

Mission Heights Junior College

HIGHLY COMMENDED

**Mikaela Peszynski**

*Raizy Boy*

Pukekohe Intermediate School

## Category 6 – Years 9 and 10 Living World

Sponsored by Kiwanis Club of Waiau-Pa Clarks Beach

Presented by Neil Allan, President, Kiwanis Club  
of Waiau-Pa Clarks Beach

FIRST PLACE

**Zhuali Lim**

*Honeybee's Active Temperature*

Howick College

SECOND PLACE

**Cailey Dayu**

*Panem*

Mission Heights Junior College

THIRD PLACE

**Ishani Mathur**

*Type 1 or 2... The Control is with You*

Macleans College



**Kiwanis Club of Waiau-Pa  
Clarks Beach**



# Presentation of Category Awards

## Category 7 – Years 9 and 10 Physical and Material World

Sponsored by New Zealand Steel Ltd.

Presented by Bruce Cooper, Mechanical Supervising Engineer

### FIRST PLACE

**Eurmika Penaflor**

*A Fantastic ApPEEL of Bioplastics*

Pukekohe High School

### SECOND PLACE

**Samantha Oh**

*Infant Immunity*

Manurewa High School

### THIRD PLACE

**Krishin Rama**

*ID BPA*

Mission Heights Junior College

### HIGHLY COMMENDED

**Rosey Ah Sing**

**Amelia Tulelei**

**Emalata Hausia**

*Fruit Candle*

Southern Cross Campus College

### HIGHLY COMMENDED

**Samson Ireland**

**Felixsun Seang**

**Timothy Kree**

*Synthetic vs. Leather*

Mission Heights Junior College

### HIGHLY COMMENDED

**Sai Harshitha Penneru**

*An Oily Ab-servation*

Macleans College

### HIGHLY COMMENDED

**Christopher Howe**

**Nancy Saysamone**

*Up & Go*

Southern Cross Campus College

## Category 8 – Years 9 and 10 Environmental Science / Plant Earth and Beyond

Sponsored by Kiwanis Club of Papakura

Presented by Ewan Beck, Past Gov. NZSP District of Kiwanis International

### HIGHLY COMMENDED

**Waldo Theron**

*Efficiency of Bio-Ethanol*

Howick College



# Presentation of Category Awards

## Category 9 – Year 9 to 13 Secondary Consumer Science

Sponsored by St John Manukau Area Committee

Presented by Hamish Bell, Divisional Manager,  
Otahuhu Youth

### FIRST PLACE

**Zara Iqbal**

*Killer Mouthwash*

Saint Kentigern College

### SECOND PLACE

**Eleanor Cato**

*Is Juice Always The Healthier Option?*

Pukekohe High School

### THIRD PLACE

**Matthew Isho**

*What Wattage?*

Alfriston College

## Category 10 – Years 7 to 13 Scientific Photography

Sponsored by Storage King, Botany North

Presented by Pete Limpus, Facility Manager

### HIGHLY COMMENDED

**Molly Herbert**

*Capturing the Sea*

Mission Heights Junior College

### HIGHLY COMMENDED

**Andrew Lee**

*Sunrise*

Somerville Intermediate School



**St John**



# *Presentation of Category Awards*

## **Category 11 – Years 11 to 13 Senior Science**

Sponsored by NIWA

Presented by Ken Becker, Regional Manager  
(Auckland)

### FIRST PLACE

**Noelle Tangonan**

*Trash to Cash*

Manurewa High School

### SECOND PLACE

**Manisha Paliwal**

*It's Udderly Amazing*

Manurewa High School

### THIRD PLACE

**Maysen Frear**

**Tegan Hunter**

*Re-enacting Rena*

Pukekohe High School



# Presentation of Special Awards

## **DairyNZ Awards**

Sponsored by DairyNZ

Presented by Bill Barwood, Industry Education Facilitator

### FIRST PLACE

#### **Ishani Mathur**

*Type 1 or 2 ... The Control is With You*

Macleans College

### SECOND EQUAL

#### **Thomas Williams**

*Aqua Applicator*

Pukekohe High School

#### **Samantha Oh**

*Infant Immunity*

Manurewa High School



## **Best Project by a Maori Student**

Sponsored by Manukau Institute of Technology

Presented by Chris Lautau, Schools and Pasifika Liaison

#### **Eleanor Cato**

*Is Juice Always The Healthier Option?*

Pukekohe High School

## **Best Project by a Pasifika Student**

Sponsored by Manukau Institute of Technology

Presented by Chris Lautau, Schools and Pasifika Liaison

#### **Katrina Mohammed**

#### **Ciara Moodley**

*BEEP vs. Flash*

Mission Heights Junior College



# Presentation of Special Awards

## MIT Engineering Award

Sponsored by Manukau Institute of Technology,  
School of Engineering

Presented by Charles Tsui, Acting Head of School

### Mikaela Peszynski

*Raizy Boy*

Pukekohe Intermediate School



## The IET Innovation Awards

Sponsored by the Institution of Engineering and Technology

Presented by Jamie Chow, IET Member

Junior Award

### Fiona Cao

*Homemade vs. Petroleum Plastics*

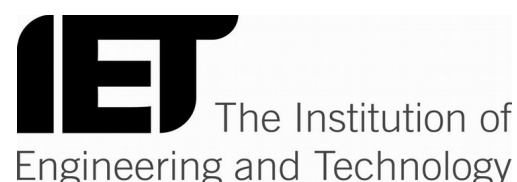
Mission Heights Junior College

Senior Award

### Noelle Tangonan

*Trash to Cash*

Manurewa High School



## Best Use of Statistics Award

Sponsored by the New Zealand Statistical Association

Presented by Catherine Hunter, on behalf of the Association

### Cuan Pillay

*Are you being served?*

Sancta Maria College



## Best Use of Flour Award

Sponsored by the Baking Industry Research Trust

Presented by Catherine Hunter, on behalf of the Trust

### Emma Stevens

*Herman the German Friendship Cake*

Pukekohe Intermediate School



# Presentation of Special Awards

## Best Soil Science Related Project Award

Sponsored by NZ Society for Soil Science

Presented by Catherine Hunter, on behalf of the Society

**Smrita Chand**

**Amrik Singh**

*Potato*

Pukekohe High School



## The School Encouragement Award

Sponsored by St John, Manukau Area Committee

Presented by Hamish Bell, Divisional Manager, Otahuhu Youth

**Zayed College for Girls**

Accepted by Ghazala Mohammed, Teacher



**St John**

## The Environment Award

Sponsored by NIWA

Presented by Ken Becker, Regional Manager (Auckland)

**Savanah Konia**

*Got Sun Go Solar*

Howick Intermediate School



## Award for Best Application of Electronics

Sponsored by NIWA

Presented by Ken Becker, Regional Manager (Auckland)

**Savanah Konia**

*Got Sun Go Solar*

Howick Intermediate School



# *Presentation of Special Awards*

## **Prize for Best Year 7 Innovation, Invention, or Investigation**

Sponsored by NIWA

Presented by Ken Becker, Regional Manager (Auckland)

## **Prize for Best Year 8 Innovation, Invention, or Investigation**

Sponsored by NIWA

Presented by Ken Becker, Regional Manager (Auckland)

## **Prize for Best Year 9 Innovation, Invention, or Investigation**

Sponsored by NIWA

Presented by Ken Becker, Regional Manager (Auckland)

## **Prize for Best Year 10 Innovation, Invention, or Investigation**

Sponsored by NIWA

Presented by Ken Becker, Regional Manager (Auckland)

## **Prize for Best Year 12 Innovation, Invention, or Investigation**

Sponsored by NIWA

Presented by Ken Becker, Regional Manager (Auckland)

## **Prize for Best Year 13 Innovation, Invention, or Investigation**

Sponsored by NIWA

Presented by Ken Becker, Regional Manager (Auckland)



# Presentation of Special Awards

## **New Zealand Heritage Award**

Sponsored by NIWA

Presented by Ken Becker, Regional Manager (Auckland)



## **Best Application of the Scientific Method**

Sponsored by the University of Otago

Presented by Xenia Bilton

UNIVERSITY  
of  
OTAGO



*Te Whare Wānanga o Ōtāgo*

## **The Eric Clague Kiwanis Award**

Sponsored by Kiwanis Clubs of Counties Manukau

Presented by Bette Eavestaff, Lt Governor Elect  
on behalf of the Kiwanis Clubs of Counties Manukau



## **Premier Award for Best Exhibit of the Fair**

Sponsored by NIWA

Presented by Ken Becker, Regional Manager (Auckland)



## **The John Bell Award**

Presented by Liz Palmer, Committee

## **Chris Milham**

Registration co-ordinator

**\*\*Note: Please pick up a list of the Special Award winners on your way out.\*\***



# *Special Thanks to our Judges and Committee*

Our team of judges are recognised as specialists in their fields. Judges are a mixture of professionals from local schools, universities, technology institutes and the science and technology industries.

## **Chief Judge**

Catherine Hunter

## **Assistant Chief Judges**

Carol Duffield  
Lynn Dunbar  
Chris Milham

## **Judges**

Josh Andrews  
Sophia Ataya  
Sally Barclay  
Jess Baker  
Xenia Bilton  
Alastair Caine  
Andrew Chalmers  
Jamie Chow  
John Cook  
Dion Cowley  
Ben Doughney  
Karla Dunn  
Rowan Ewens  
Chris Glassey

Kamrul Jalil  
Peijing Li  
Sherna Matta  
Vicky-Lee Mueller  
Shazia Nisha  
Stuart Palmer  
Nicolette Rattenbury  
Chris Ryan  
Susan Middleton-Stokes  
Stephen Tredwell  
Sandy Wild  
Alice Zhuang  
Isabel Zhuang

## **Science Fair Committee**

**Convenor**  
**Secretary**  
**Treasurer**  
**Sponsorship**  
**Judging convenor**  
**Registration co-ordinator**  
**Prize giving co-ordinator**  
**Webmaster**

Catherine Hunter  
Liz Palmer  
Beryl McKinnell  
Christine Howard  
Catherine Hunter  
Chris Milham  
Beryl McKinnell  
Ben Doughney

A special thanks to Mission Heights Junior College for hosting the NIWA Manukau Region Science and Technology Fair, to the support of Manurewa High School and to the Kiwanis.

We would also like to thank teachers for their ongoing commitment in supporting students entering the Fair.

**Website: [www.sciencefairmanukau.org.nz](http://www.sciencefairmanukau.org.nz)**



## 2014 Participating Schools

*Alfriston College*  
*Alfriston School*  
*Aorere College*  
*Beachlands School*  
*Drury School*  
*Elim Christian College*  
*Farm Cove Intermediate School*  
*Howick College*  
*Howick Intermediate School*  
*Macleans College*  
*Manurewa High School*  
*Mission Heights Junior College*  
*Pukekohe High School*  
*Pukekohe Intermediate School*  
*Pukeoware School*  
*Rosehill Intermediate School*  
*Saint Kentigern College*  
*Sancta Maria College*  
*Somerville Intermediate School*  
*Southern Cross Campus College*  
*St Joseph's Catholic School Pukekohe*  
*Tuakau College*  
*Tyndale Park Christian School*  
*Waiuku College*  
*Zayed College for Girls*

