



# Primary Science Hui Alexandra Programme 2 October 2019





- Wednesday 2 October
- Coffee from 8:15
- 9am start
- 5pm finish
- Dunstan High School  
12 Enterprise St  
Alexandra 9320

8:15	Coffee from 8:15					
9:00	Welcome/Introductions					
9:30	<a href="#">Brigitte Glasson</a>	<a href="#">Robyn Zink</a>	<a href="#">Kate Rice</a>	<a href="#">Chris Duggan</a>	<a href="#">Jenn Corbitt</a>	<a href="#">Sandy Robbins and Cathie Johnson</a>
	Victoria University	Enviroschools Otago Regional Coordinator - Otago Regional Council	University of Otago College of Education	House of Science	Science Teaching Leadership Programme	New Zealand Council of Educational Research
	<a href="#">Citizen scientists in the classroom: developing capabilities through online opportunities</a>	<a href="#">Hands-on activities to increase awareness of energy in its myriad of forms</a>	<a href="#">(Really) Integrating science with Reading, Writing and Maths</a>	<a href="#">Hands on Science – an inspired pathway to developing integrated studies in the classroom</a>	<a href="#">How to improve science teaching at your school</a>	<a href="#">Exploring the language of science</a>
10:45	Morning Tea					
11:15	<a href="#">Dr Caroline Orchiston</a>	<a href="#">Damian Foster</a>	<a href="#">Benjamin Moorhouse</a>	<a href="#">Andrea Soanes</a>	<a href="#">Gustavo Olivares</a>	<a href="#">Fiona Mackley and Debbie Steel</a>
	AF8, University of Otago	Enviroschools	Department of Conservation	Science Learning Hub	Participatory Science Platform	Alexandra Primary School
	<a href="#">Alpine Fault science, impacts and consequences</a>	<a href="#">Sustainability stories and the Enviroscape</a>	<a href="#">Teaching science through nature</a>	<a href="#">Developing science pedagogy to encourage critical and creative thinking</a>	<a href="#">Value Add: the benefits of co-design and curriculum integration in a collaborative STEM teaching model</a>	<a href="#">What's In Your Air, Alex?</a>
12:25	Show and Tell/PopUps/		Show and Tell/PopUps/		Show and Tell/PopUps/	
1:45	Lunch					
2:00	<a href="#">Brigitte Glasson</a>	<a href="#">Damian Foster</a>	<a href="#">Kate Rice</a>	<a href="#">Chris Duggan</a>	<a href="#">Jenn Corbitt</a>	<a href="#">Fiona Mackley and Debbie Steel</a>
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3:15	<a href="#">Dr Caroline Orchiston</a>	<a href="#">Robyn Zink</a>	<a href="#">Benjamin Moorhouse</a>	<a href="#">Andrea Soanes</a>	<a href="#">Gustavo Olivares</a>	<a href="#">Sandy Robbins and Cathie Johnson</a>
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4:30	Round Up/ Farwell					

## Jenn Corbitt

### *How to improve science teaching at your school*

*This workshop explores the Science Teaching Leadership Programme and how it has improved students' science engagement and achievement in schools. Participant teachers will share their stories of success.*

Jenn Corbitt is one of the coordinators of the Science Teaching Leadership Programme. She has a wide range of experience in education from the classroom to policy development.

## Chris Duggan

### *Hands on Science –an inspired pathway to developing integrated studies in the classroom*

*Having kids use hands on science activities where they can learn through trial and error inspires curiosity and creativity; it encourages critical thinking, collaboration and problem solving. It also poses questions that students want to know more about and thus presents opportunities to integrate a wide range of different subjects. This session will use hands on science activities as starters to follow the natural progression through to other curriculum areas such as maths, literacy, art, and social sciences.*

Chris Duggan: Founder and CEO of the House of Science, a not-for-profit set up in 2014 to empower primary teachers with hands-on science resources which are used in over 250 schools in 11 regions. Chris has a background in secondary science teaching (Biology and Chemistry) and is passionate about making science accessible for all.

## Damian Foster

### *Sustainability stories and the Enviroscope*

*Exploring children's views on sustainability with a focus on place*

Damian has a primary teaching background with experience in ECE and Curriculum development

## Brigitte Glasson

### *Citizen scientists in the classroom: developing capabilities through online opportunities*

*Online Citizen Science is a type of participatory science where interested people use the internet in some way to contribute to a science investigation. It can be a wonderful way for primary students to assist scientists with a real science project and at the same time develop their science capabilities and understanding of what science is like. In this workshop you will hear insights from teachers involved in our study who used Online Citizen Science projects such as Planet Hunters and The Plastic Tide with their primary classes. We will introduce you to a resource on the Science Learning Hub about using Online Citizen Science. You will have time to explore and use the resource, look for an online citizen science project(s) relevant to your programme, and consider some ways to use it productively for science learning with your primary students. You will need to bring your own device with internet capability. This workshop aims to share the stories and learning from a TLRI research project. After*

*briefly defining what Online Citizen Science is, we will look at the teacher case studies and their stories. Following that you will explore your choice of projects online in a hands-on way through one of our project outputs, the online teacher support material.*

Brigitte Glasson is a science education consultant. From a secondary teaching background, Brigitte has held a variety of roles in science education. She has been a lecturer in science education and professional studies, School of Primary Teacher Education, Christchurch College of Education. More recently she has taught in the Primary sector valuing this opportunity to understand first-hand the reality of primary teaching and at the same time integrate science through her work. As a consultant, much of Brigitte's work involves designing and leading professional learning and development that includes a strong focus on the Science Capabilities for Citizenship for teachers of Years 1 - 10.

## Fiona Mackley and Debbie Steel

### *What's In Your Air, Alex?*

*Our school was approached by Dr Ian Longley (NIWA) about a project they had secured funding for through Curious Minds. The project was based on measuring the amount of PM10 and PM2.5 in our town's air and more specifically, the air in our students' homes. Surveys submitted by the students also showed if there was a link between smoke and health symptoms, such as respiratory problems. The Year 5/6 students collected the data, learnt about ways to lessen the effects of smoke on health, and designed ways to share this learning with the wider community - locally, nationally and globally.*

Fiona Mackley and Debbie Steel teach at Alexandra Primary School. Fiona teaches Y7/8 (Y 5/6 in 2018) and Debbie teaches Y 7/8 (Y5/6 in 2018)

## Benjamin Moorhouse

### *Teaching science through nature*

*Nature provides an authentic context for learning and provides schools with the context to connect with their local community in a meaningful way. By providing opportunities to connect with nature, develop conservation knowledge, values and skills, teachers and students become empowered to take-action for their environment. This workshop aims to build an understanding of why a conservation education journey is worthwhile and how it fits with the New Zealand Curriculum. An interactive session will explore the tools and resources available from the Department of Conservation to support you on a conservation education journey. This will include examples of DOC curriculum linked resources, based on our integrated inquiry learning cycle that supports incorporating conservation education into your school curriculum and help build teachers and students capability to drive change in their community by taking-action for their environment.*

The Department of Conservation outreach and education team is made up of education specialist based across the country. Benjamin Moorhouse based in Wellington, Maria Deutsch in Nelson and Annabelle Studholme in Christchurch will be running the sessions for DOC across the country.

## Gustavo Olivares

### *Value Add: the benefits of co-design and curriculum integration in a collaborative STEM teaching model*

*Running collaborative inquiry projects with researchers, business and industry from your community can have fantastic benefits for you and your students: role-modelling, topic expertise, career pathway awareness and the potential for resourcing support.*

*Proposing collaborative teaching with community, research, business or industry partners requires an ability to recognise value-add on both sides of the equation. You know what you stand to gain from having a local biologist work directly with your students, but what are they gaining from the project? Being able to articulate this tangible benefit will allow you to pitch project ideas within your community with greater success.*

*In this workshop we'll work with small groups to co-design an inquiry project focusing on a STEM problem or opportunity in your community, identify local academics or industry professionals who can assist you in an external expert role, and brainstorm value-add on both sides to better pitch and run the project when you go back to your classroom.*

*In addition, these kind of projects offer ways in which to integrate material across the curriculum. We'll explore how to achieve this, giving you the confidence to explore this within your school.*

*This workshop is underpinned by knowledge and experience gained through 4 years of project trials in south Auckland, Taranaki and Otago via the Participatory Science Platform initiative under Curious Minds.*

Gustavo grew up in Santiago (Chile) knowing that the view of the Andes on a winter morning is one of the most beautiful sights to see. But in reality the air pollution was so bad that the mountains weren't visible for most of the season. This made air pollution a personal issue for Gustavo. Gustavo started his journey into science by nearly burning his room at least twice, thanks to flammable wooden floors, and blowing his house circuits a few times when trying to build a laser out of a strobe light and some gallium (his tip: don't!). When someone told him that the atmosphere is just a giant reactor and that we don't quite know all the details of yet, Gustavo decided that chemical engineering was the way to go.

Over the years Gustavo has worked in Chile, Sweden and New Zealand. His work has involved simulating the fate of emissions from copper smelters, measuring tiny particles in the streets, estimating the size of the particles emitted by cars and wood stoves, and designing and developing instruments and measurement platforms to capture more information about our air and making them more accessible to everyone - even for people who are not researchers. Gustavo believes that by making his science more available to everyone, people much smarter than him can see links that he can't, and people much more powerful than he can act so that everyone can see their mountains all the time.

## Caroline Orchiston

### *Alpine Fault science, impacts and consequences*

*This workshop will introduce the participants to why earthquakes happen, and why we need to be concerned about the Alpine Fault. It will talk about the impacts and consequences of a future magnitude 8 earthquake, and how the South Island might become better prepared to respond and recovery. The overarching themes of this workshop are geoscience, community resilience and emergency response planning for improving societal outcomes from major earthquake disasters in NZ.*

Dr. Orchiston is Deputy Director of the Centre for Sustainability, University of Otago, and Science Lead for Project AF8. Her recent work has involved close collaboration with Civil Defence Emergency



Management for Project AF8 (Alpine Fault magnitude 8), which aims to improve our collective response capability for a future South Island earthquake, and to outreach the science to improve risk awareness and preparedness. She is funded by Resilience to Nature's Challenges (National Science Challenge) and QuakeCoRE, for various projects investigating aspects of societal resilience to disasters, including heritage precincts in Oamaru, Wellington CBD cordoning and rural and cultural resilience in multi-hazard environments. Caroline is on the Leadership Team for QuakeCoRE and is Deputy Leader of Flagship 5 (Pathways to Societal Resilience).

In her spare time Caroline has three children and a busy family life, and occasionally does the garden and plays her guitar.

## Kate Rice

### *(Really) Integrating science with reading, writing and maths*

*Participants will be introduced to science activities used a variety of schools to engage young students. They will find out how integrating the science activities into reading, writing and maths encouraged children who were reluctant learners to record their observations and explanations and effectively use appropriate scientific language.*

Dr Kate Rice is an experienced Science facilitator who has been working with teachers in Primary schools for more than 12 years.

## Sandy Robbins and Cathie Johnson

### *Exploring the language of science*

*When learning is integrated there is a risk that the specific practices of different subjects will not be as evident as we would like them to be. In this workshop the NZCER science team will work with teachers to explore how describing and explaining in science are both similar and different to describing and explaining in other curriculum areas. We will draw on our recent work in developing different assessment tools: Junior StwE; ARB resources; and national monitoring (NMSSA) in science. Come along and explore how students responded to selected questions that illustrate the science practices we were looking for—and that many students seemed to be unaware of. You will leave with some tips for explicit teaching of how to describe and explain 'like a scientist'.*

Sandy Robbins is a researcher and resource developer, and has also held a position at NZCER as a Support and Data analyst. Her areas of interest are in Science education and resource design. Before NZCER Sandy was a Secondary school science teacher and health promotion coordinator.

Cathie Johnson is an ex-principal with a breadth of knowledge of NZCER's assessment tools. She is available to support schools with their choice and use of any NZCER's assessments or surveys, and with assessment advice more broadly. She can also help you with analysis of achievement information and next steps. Cathie runs personalised professional development sessions based on the specific needs of a school or cluster.

## Andrea Soanes

### *Developing science pedagogy to encourage critical and creative thinking*

*The goal of science education is to enable students to participate as critical, informed and curious citizens. The Science Learning Hub offers NZ-based quality resources and effective pedagogy to deepen understanding and encourage scientific literacy. This hands-on workshop will explore science and education, how to develop science concepts and capabilities, and encourage critical and creative thinking.*

Andrea Soanes is an experienced science teacher, and Kudos award winner 2018 for science education. She is passionate about contextual integrated teaching and learning. Andrea is the project manager for the Science Learning Hub, and alongside a dedicated team, work to support teachers to engage, inspire and build students curiosity about the world around them.

## Robyn Zink

### *Hands-on activities to increase awareness of energy in its myriad of forms*

*Come and experience hands-on activities to increase awareness of energy in its myriad forms, develop understanding of universal principles of energy and learn skills to assess efficiency and impacts of energy use. We will also explore attitudes and values of our current energy practices and ideas for taking action related to energy.*

Robyn has over 30 years' experience in experiential and environmental education in a wide range of contexts, including schools, university and with community organisations. She now coordinates the Enviroschools programme in Otago, supporting the Enviroschools facilitators and schools to integrate education for sustainability into all aspects of school life, including the school's wider community.



## Connecting you....

Department of Conservation	<a href="https://www.doc.govt.nz/">https://www.doc.govt.nz/</a>
Enviro Schools: Otago	<a href="http://www.enviroschools.org.nz/in_your_region/otago">http://www.enviroschools.org.nz/in_your_region/otago</a>
EnviroSchools	<a href="http://www.enviroschools.org.nz/about-enviroschools">http://www.enviroschools.org.nz/about-enviroschools</a>
House of Science	<a href="https://houseofscience.nz/">https://houseofscience.nz/</a>
New Zealand Council of Education Research (NZCER)	<a href="https://www.nzcer.org.nz/">https://www.nzcer.org.nz/</a>
Participatory Science Platform	<a href="https://www.curiousminds.nz/funding/participatory-science-platform/">https://www.curiousminds.nz/funding/participatory-science-platform/</a>
Project AF8	<a href="https://projectaf8.co.nz/">https://projectaf8.co.nz/</a>
Royal Society Te Apārangi	<a href="https://royalsociety.org.nz/">https://royalsociety.org.nz/</a>
Science Learning Hub	<a href="https://www.sciencelearn.org.nz/">https://www.sciencelearn.org.nz/</a>
Science Teacher Leadership Programme	<a href="https://royalsociety.org.nz/what-we-do/funds-and-opportunities/science-teaching-leadership-programme/">https://royalsociety.org.nz/what-we-do/funds-and-opportunities/science-teaching-leadership-programme/</a>
TRCC	<a href="https://trcc.org.nz/">https://trcc.org.nz/</a>
University of Otago	<a href="https://www.otago.ac.nz/">https://www.otago.ac.nz/</a>
Victoria University	<a href="https://www.victoria.ac.nz/">https://www.victoria.ac.nz/</a>

*Front Cover Photo:* 2018 Prime Minister's Science Teacher prize winner.

<https://www.pmscienceprizes.org.nz/previous-winners/2018-prime-ministers-science-teacher-winner/>