

ConQUEST 2018

REGISTRATION HANDBOOK



JULY 2ND – 3RD

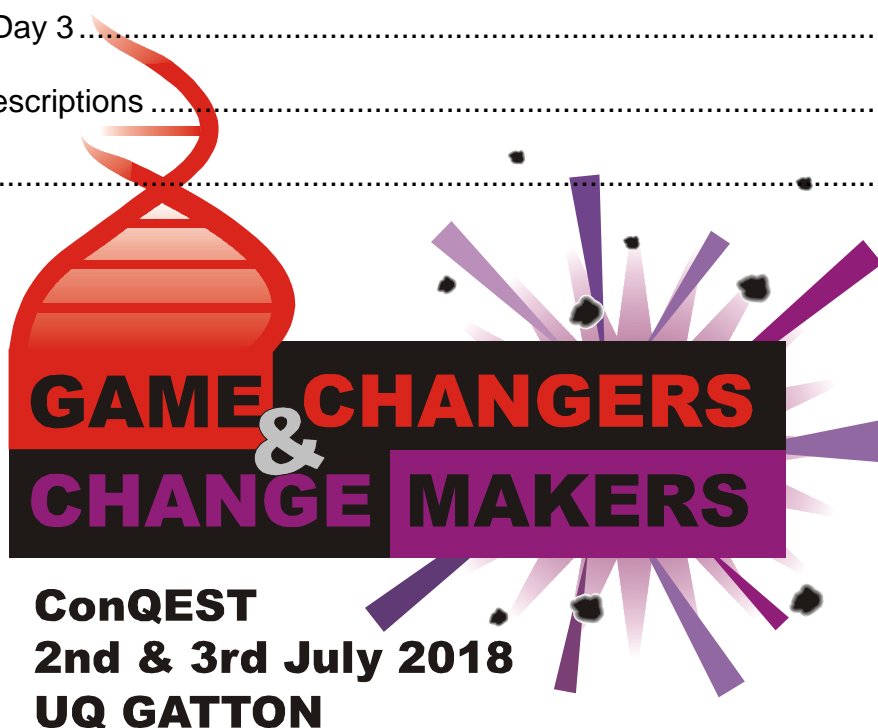
UNIVERSITY OF QUEENSLAND

GATTON CAMPUS

WARREGO HIGHWAY, GATTON. QLD

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Theme adapted from National Science Week 2018

About This Document



This document is designed to assist you in the registration process for ConQEST 2018, and to provide information on the sessions and additional activities undertaken during this annual event.

Our inspiration for ConQEST 2018 is drawn from the Australian Science Week theme “Game changers and change makers”. This year, of key interest are practical experiences in line with the Australian curriculum and new senior science syllabus.

A detailed summary of each workshop including abstracts and presenters follows the main program guide. Please take the time to read the abstracts and elective session descriptions carefully to make your ConQEST 2018 experience as valuable as possible. (There is no need to print this program to bring with you - another program with detailed information will be issued at the conference).

We look forward to providing you, our members and community, with practical skills and inspiration to build on your laboratory knowledge and achievements.

Thank you for your interest, and see you soon

The ConQEST 2018 Organising Committee

How Do I Register For ConQEST 2018?

- Registration opens from Monday 14th May and close Friday 15th June 2018
- Both Registration (including choosing workshops) and payment are taken online through Eventbrite
- **Members will be emailed the Early bird registration link, week beginning 7th May**
- From Friday 18th May, the Eventbrite link will be posted on the QEST website under [ConQEST2018](#) and will be available for general (non-member) registrations.

STEP 1: READ REGISTRATION HANDBOOK

READ PAGES WORKSHOP TIMES

READ PAGES ELECTIVE DESCRIPTIONS

FREQUENTLY ASKED QUESTIONS INCLUDES CONFERENCE COST

STEP 2: CHOOSE YOUR ELECTIVES

SEE THE WORKSHOP OPTIONS FROM PAGE 12

WE'VE ADDED A SUMMARY OF EACH SESSION ON THE PAGES FOLLOWING

YOU CAN ALSO USE THE PAGE TITLED "NOTES" TO HELP PLAN WHICH WORKSHOPS YOU WANT TO GO TO

STEP 3: GO TO ONLINE REGISTRATION

SEE TROUBLESHOOTING GUIDE FOLLOWING PAGES

STEP 4: BOOK ACCOMMODATION

SEE THE ACCOMMODATION SECTION FROM PAGE 8 FOR ALL THE OPTIONS

Registrations Instructions for Delegates

We invite you to [register for ConQUEST 2018](#).

If you wish to stay on campus, you will need to [book accommodation](#) via the link in the confirmation email.

Due to the number of different tickets available, to simplify your options, please use the appropriate “**Promotional Code**” to reveal the relevant tickets:

- **2018member** (if you have joined / renewed your QEST membership, or plan to do so shortly)
- **non-member** (if you are not a member of QEST)
- or you may have been emailed a special code

Can I register everyone from my school at the same time?

Yes, you can. Select the appropriate number of tickets and you will be prompted to enter details for each person.

If you are entering details for someone else, you will need to know:

- Email address
- Mobile phone #
- Workshop choices
- Dietary requirements
- Are they coming to dinner?
- Flight details (if applicable)

An email to ‘claim order’ will be sent to everyone you have registered, tell them to check their spam / junk folder.

What Payment options are there?

You may pay by either Credit card, Invoice (& bank transfer) or Cheque.

You will be prompted to choose a payment method as part of the registration process

Print your invoice from the confirmation email (sent to ‘the buyer’). Check your spam / junk folder.

How do I print and Invoice / receipt?

Your invoice can be accessed by one of several ways:

1. The email that was sent to ‘the buyer’ listed in registration process. Contains invoice as an attachment. Please check your spam / junk folder.
2. Log on to your EventBrite account (buyer or delegate) & print invoice.

Your TICKET IS YOUR RECEIPT, and can be access the same as above (for invoice)

How do I change my workshop choices or update my registration?

- Log on to your EventBrite account (using email address / link in confirmation email)
- edit (top RHS of each ticket)

Conference General Information and FAQs

Who is QEST?

QEST is the association of Queensland Education Science Technicians: a non-profit professional association for laboratory staff in Queensland educational facilities.

How do I become a member?

QEST membership is exclusive to employees in the education sector. *To find out if you are eligible to be a member of QEST, please visit our [website](#) and download a membership form from the [Join QEST](#) tab. Membership is accepted at bimonthly Management Committee meetings, which will not occur until June.*

About ConQEST

What is ConQEST?

ConQEST is the annual conference of QEST focusing on Professional Development workshops and information sessions. ConQEST is traditionally held on the first Monday and Tuesday of the Queensland June school holidays.

When is ConQEST?

ConQEST runs over two days, Monday 2nd – Tuesday 3rd July, 2018; with options for pre-conference and post-conference activities

Where will ConQEST 2018 be held?

University of Queensland Gatton Campus,
Warrego Highway, Gatton, Queensland.

There is University style Hall of Residence accommodation available at reasonable prices.



Where can I park at the venue?

General Session: P6 Hamon Building (8255 WP Hamon Memorial).

Accommodation: P5 for Thynne/P3/P4 for Shelton

There are accessible carpark for anyone with mobility issues.

Getting around the University

Download the [UQnav app](#). It will direct you around Gatton through key words. You can also save favourite locations before you arrive.

Or Use the online map to plan your trip: <https://maps.uq.edu.au/gatton>

Suggested locations (and parking) to save as favourites beforehand include

- Elton Burns Recreation Building (8206) & P7
- WP Hamon Centre (8255) & P6
- Foundation Building (8118)
- Dining Hall (8125)
- Thynne Hall of Residence (8120) & P5

Where Can I Stay While I Am Attending?

Accommodation for ConQEST 2018

There is accommodation available on campus, or there are several motels in Gatton (5-10minute drive approx.)

Renew that University feeling: stay with like-minded Lab Tech's at the UQ Gatton Halls of Residence. Your single, private room will have all the comforts of home, with the bathroom just down the hall. Stay up after our Monday night ConQEST dinner and chat the night away with friends. Halls of Residence provides unlimited hot water in the Common Room (fridge also available).

Join in all the fun of ConQEST and stay with your friends. Accommodation options also include breakfast or dinner as required.

Information about the accommodation options can be found in the Registration Handbook. Email [QEST](#) if you have further questions about accommodation or if you have needs that are not met by the options listed below.

Accommodation packages are as follows:

Three nights (D,BnB) - staying for Chemical Safety in Schools PD \$225.00

Arrive Sunday for Dinner, Sunday Accommodation, Monday Breakfast, (Monday dinner with ConQUEST) Monday Accommodation, Tuesday Breakfast, Tuesday Dinner, Tuesday Accommodation, Wednesday Breakfast

Two nights (D,BnB) - staying for Chemical Safety in Schools PD \$150.00

Monday Accommodation, (Monday dinner with ConQUEST), Tuesday Breakfast, Tuesday Dinner, Tuesday Accommodation, Wednesday Breakfast

Two nights (D,BnB) \$150.00

Arrive Sunday for Dinner, Sunday Accommodation, Monday Breakfast, (Monday dinner with ConQUEST), Monday Accommodation, Tuesday Breakfast.

One night (BnB) \$80.00

Monday night Accommodation (Monday dinner with ConQUEST), Tuesday Breakfast.

		Sunday		Monday		Tuesday	
		Dinner	B&B	Conference Dinner	B&B	Dinner	B&B
Three nights (staying for CSiS)	\$235	✓	✓	<i>Complimentary</i>	✓	✓	✓
Two nights (staying for CSiS)	\$150			<i>Complimentary</i>	✓	✓	✓
Two nights	\$150	✓	✓	<i>Complimentary</i>	✓		
One night	\$80			<i>Complimentary</i>	✓		

Check In

Depending on what time you arrive, look at the timetable in the Registration Handbook to see where we will be

Check out / return keys:

- Tuesday Morning Tea (in Trade Hall)
- 8:30 am Wednesday (at Chemical Safety in Schools)

What Do I Need to Bring to ConQEST?

Your safety is important to us. Please bring a Laboratory Coat, safety goggles, closed in shoes and appropriate clothing for laboratory workshops with practical components.

Upon registration at the conference venue, you will be provided with a bag of goodies containing a pen, notepad and conference program details. You will also be provided with morning tea and lunch during conference.

If you are attending a session that uses technology, it is recommended that you bring your own device to further your experience during the workshop.

How Much Does ConQEST Cost?

Registration type	Price
2 days conference ticket, QEST member	\$205.00
2 days conference ticket, non-QEST member	\$235.00
1 day conference ticket (Monday OR Tuesday), QEST member	\$115.00
1 day conference ticket (Monday OR Tuesday), non-QEST member	\$135.00
Wednesday post-conference Chemical Safety In Schools (CSIS) with the purchase of any other conference ticket above.	\$35.00
Wednesday post-conference Chemical Safety In Schools (CSIS) purchased separate to any other conference ticket above.	\$45.00
ConQEST dinner, guest ticket For more information see 'Conference Dinner' section	\$50.00

Please note that QEST is a not-for-profit organisation and does not charge GST

Getting To Conference

Driving to ConQEST?

Carpool with other delegates from your network and have some roadtrip fun!

Gatton is 1 hour from Brisbane CBD, 2 hours from the Sunshine Coast, and 1.5 hours from the Gold Coast.

Flying to ConQEST?

Sunday flights arrive 3pm-6:45pm (from Rockhampton, Townsville, Cairns)

Tuesday flight departure 5:45-8pm

QEST is providing a complimentary bus for delegates who are flying in.

Join the Airport Bus to ConQEST?

Brisbane delegates are welcome to join airport bus, Northside residents may board the bus at Brisbane Airport. If you are a Southside resident wanting to utilise this service, information regarding this will then be sent out to you closer to the date.

You will be asked to indicate your intention to catch the bus when you register.

The QEST bus will depart Brisbane Domestic Airport at 4:30pm on Sunday, 1st July, returning on Tuesday 3rd July in time for 5:30pm flights (Depart Gatton at 3pm). If staying for the CSiS on Wednesday, transport will be arranged to transfer delegates to the airport also.

As part of registration, you will be asked to indicate where you would like to join the bus.

Conference Dinner

How do I pay for dinner?

Dinner is included with any purchase of conference ticket – excluding post conference CSiS

See the accommodation section for what else is included.

Please indicate your intention to attend dinner when you register.


You are welcome to bring a guest with you to the conference dinner, at the cost of \$50 per guest. When you register on Eventbrite, Next to "Company/Organisation" write "Guest" and fill out the remaining Work Information with your organisation's information

I have dietary requirements. How do I let you know?

You may indicate your dietary requirements through your registration. If you need to supply further details, please email gest@gest.org.au

ConQEST Timetable

Sunday 1st July 2018

	<p>**Use UQnav & the building numbers on your name tag to guide you around UQ Gatton allow 10min walking to get to and from workshops</p> <p><i>(it is possible to drive, but will take about same time)</i> </p>	Building (number)
2:00pm	Committee to Gatton <ul style="list-style-type: none"> • Setting up trade hall • Conference bags • EventBrite training • Set up navigation aides (A-frames, flags) 	Elton Burns Recreation Building (8206)
2:30 – 4:00pm	Suppliers set up in Trade hall	Elton Burns Recreation Building (8206)
4:00 – 6:00pm	Campus Orientation (including UQnav) FREE TIME	Dining Hall (8125)
6:00pm	ConQEST bus arrives from airport → accommodation	Thynne (8120) / Motel (8152)
6:00 – 9:00pm	BBQ dinner (included as part of accommodation)	Thynne BBQ (8120A)

What to expect when you arrive:

- Depending what time you arrive, find us at one of the locations above
- Join in the activities
- Get you keys (assuming you are staying overnight)
- Settle yourself into accommodation











Join us for a

- Twilight tour of Gatton Campus (aka orientation)
- BBQ dinner for committee and guests.







ConQEST delegates are welcome to come early and assist with setting up for conference.

If you have booked Sunday night accommodation, BBQ is included in this package.

DAY 1 – Monday 2nd July 2018

	**Use UQnav & the building numbers on your name tag to guide you around UQ Gatton  allow 10min walking to get to and from workshops <i>(it is possible to drive, but will take about same time)</i> 						Building (number)
7:00-8:00am	Breakfast for those staying in Residential halls						Dining Hall (8125)
7:30 - 8:30am	Registration Trade hall (with tea, coffee & pastry on arrival)						Elton Burns Building (8206)
8:30am – 9:00am	Conference opening Day 1						WP Hamon Centre (8255)
9:00am - 10:00am	Keynote address: STEM at UQ						WP Hamon Centre (8255)
10:00am – 10:40am	Morning tea and Trade Displays  <i>(10 min has been allowed to walk to & from workshops)</i>						Elton Burns Building (8206)
10:50am – 12:20pm	 Workshops A (90 min). 						Classrooms **
A1	A2	A3	A4	A5	A6	A7	
Agarose Gel Electrophoresis: from shoestring to modern technology <i>Steve Garrett</i>	Hiddenvale tour (bus leaves at 10am, morning tea will be provided on the bus) <i>Dalene Adams</i>	Introduction to Chemical Safety and Risk Assessment (Risk Assess) <i>Phillip Crisp</i>	Kronosaurus Korner Fish Mash Challenge (Citizen Science Project) NEW <i>Michelle Johnston</i>	Sustainable Housing <i>Pennie Stoyles</i>	Introduction to PCR NEW <i>Katrina Billington</i>	Tools for Data Collection in Senior Science Syllabus NEW <i>Dr Gurion Ang</i>	
12:30pm – 1:30pm	 Lunch and Trade Displays.  Trade hall closes 1:40pm						Elton Burns Building (8206)
1:40pm – 2:40pm	 Workshops B (60 min). 						Classrooms **
B1	B2	B3	B4	B5	B6	B7	B8
Implementing Mandated Practical for New Senior Courses <i>Doug Bail</i>	In de Pendant Genes <i>Steve Garrett</i>	Gympie Bone Museum Virtual Tour NEW <i>Deb & Jaimie Cook</i>	Treating Microscopes with Care <i>Rod Aggett</i>	If it Doesn't Work, Its Physics <i>Phil Jones</i>	Techniques in Microbiology NEW <i>Peter Ball</i>	Gatton Uni Research (bus) tour NEW <i>UQ</i>	Drones in Agriculture & Education NEW <i>UQ</i>
2:50pm – 3:30pm	 Mini-note: Identifying and Managing Hazards in the Laboratory						WP Hamon Centre (8255)
3:30pm - 4:30pm	QEST Annual General Meeting <i>ALL MEMBERS ARE WELCOME TO ATTEND. Non-members are also welcome to attend as observers. Presentation of auditor's report and nominations to committee positions. Nominations are welcome on the day, so don't be shy - step up and help run your association (distance from Brisbane is not an issue with modern technologies). Full agenda will be issued two weeks prior to the meeting to members via email.</i>						WP Hamon Centre (8255)
6:00pm	Pre-dinner canapé & drinks						Foundation building (8118)
6:30pm – 10:00pm	Conference evening & keynote address (Nimrod Klayman - UQ Idea Hub) <i>Dietary requirements should be indicated when you register</i>						Dining Hall (8125)

DAY 2 – Tuesday 3rd July 2018

	**Use UQnav & the building numbers on your name tag to guide you around UQ Gatton  allow 10min walking to get to and from workshops <i>(it is possible to drive, but will take about same time)</i> 		Building (number)						
7:00-8:00am	Breakfast for those staying in Residential halls		Dining Hall (8125)						
7:45 am	Trade Hall opens		Tradehall (8206)						
8:00am	Registration Trade hall (with tea, coffee & pastry on arrival)		Elton Burns Recreation Building (8206)						
8:30am – 8:45am	Conference opening Day 2		WP Hamon Centre (8255)						
8:45am - 9:30am	Keynote address: STEM in Industry		WP Hamon Centre (8255)						
9:30am - 10:10am	Morning tea and Trade Displays  <i>(10 min has been allowed to walk to workshops)</i> <i>Please return your accommodation keys to Concierge</i>		Elton Burns Building (8206)						
10:20 - 12:20am	 Workshops CC (2hr) ... <u>OR</u> C1 (60min) + C2 (60min) 		Classrooms **						
CC1 DNA & Protein Electrophoresis <i>Steve Garrett</i>		CC2 Titration – preparation and practice NEW <i>Elaine Bergmann</i>	CC3 Renewable Energy <i>Pennie Stoyles</i>						
10:20 - 11:20am					11:25 - 12:25am				
C1.1 Risk Assess: Tips & Tricks for Experienced Users <i>Phillip Crisp</i>	C1.2 Key experiments: inquiry approaches using data loggers in Chemistry <i>Stuart Lewis</i>	C1.3 Implementing mandated Practical for New Senior Courses <i>Doug Bail</i>	C1.4 Techniques in Microbiology NEW <i>Peter Ball</i>	C1.5 Tissue Culture Techniques NEW <i>Met Schneemilch</i>	C2.1 Treating Microscopes with Care <i>Rod Aggett</i>	C2.2 Exploring Solar Energy with Solar Cars NEW <i>Stuart Lewis</i>	C2.3 Make it Real! Technology for the Biology Classroom <i>Phil Jones</i>	C2.4 Enzyme Action - Catalase <i>Theresa Holt</i>	C2.5 Entomology: capture, breeding & preparation of Insects for study NEW <i>Lochlan Fowler</i>
12:30pm - 1:15pm	 Lunch, Trade Displays		Elton Burns Building (8206)						
1:15pm - 2:00pm	Mini note: Industrial Landscape		WP Hamon Centre (8255)						
2:00pm - 2:45pm	Conference closing address (including farewells, prize draws, acknowledgements and afternoon tea) <i>Don't forget to pick up your certificate from the registration desk on your way home</i>		WP Hamon Centre (8255)						
3:00pm - 3:30pm	Bus to Airport <i>(Afternoon tea will be provided on the bus)</i>		Outside Elton Burns Building (8206)						

DAY 3 – Wednesday 4th July 2018 – Chemical Safety in Schools

**Use UQnav & the building numbers on your name tag to guide you around UQ Gatton allow 10min walking to get to and from workshops (it is possible to drive, but will take about same time)		Building (number)
7:00-9am	Breakfast for those staying in Residential hall	Dining Hall (8125)
8:30am	Registrations (tea/coffee & pastry on arrival) <i>Please return your accommodation keys</i>	WP Hamon Centre (8255)
9am - 11:00am	Session 1: Chemical Safety in Schools <ul style="list-style-type: none"> • Logic of the Risk Assessment Process • GHS and Legal Requirements of Chemical Labels • Dangerous Chemicals • RiskAssess: Question and Answer 	WP Hamon Centre (8255)
11:00 – 11:30am	Morning tea	WP Hamon Centre (8255)
11:30am - 1:00pm	Session 2: Chemical Safety in Schools <ul style="list-style-type: none"> • Safe Storage of Chemicals • Disposal of Chemicals • Anything: Question and Answer 	WP Hamon Centre (8255)

To keep organisation and costs to a minimum, we ask that you make your own arrangements for lunch.

There are multiple cafes in Gatton, 10min west, or MacDonald's is 2min down the road, on the way to the Brisbane.

CSiS Half Day PD Day 3

Chemical Safety in Schools



This year you have the option to add a half day training in Chemical Safety to your ConQEST ticket. You can also choose to attend Chemical Safety in Schools without attending ConQEST. Chemical Safety is an excellent short course run by EcoSolve, the developers of Risk Assess for Australian Schools.

Dr Phillip Crisp from Risk Assess will present the workshop.

Dr Crisp has over 40 years of experience working in University chemical laboratories, including acting as the OHS coordinator for the Faculty of Engineering at the University of NSW for many years. He wrote the majority of the appendices for the Chemical Safety in Schools package for the NSW DSE including Appendix D. Dr Crisp has trained more than 3000 teachers at schools and universities during the last 15 years and his popular courses have provided many teachers

with sound practical advice on laboratory safety. The workshop should include topics such as how to avoid an accident, risk assessment, GHS, dangerous chemicals, safe use of equipment, safe storage, and disposal.

Registration for this workshop will be available as an add-on to the ConQEST2018 tickets and workshop selections process.

CSiS session will be held at 8:30 am - 1pm

Morning Tea will be included however, to keep organisation and costs to a minimum, we ask that you make your own arrangements for lunch.

There are multiple cafes in Gatton, 10min heading west, or MacDonald's is 2min heading east, on the way to Brisbane

For QEST Members, this session will cost \$35, and \$45 for non-members, alternatively, purchase an accommodation package which includes this session.

Don't forget to organise accommodation to attend this session.

Elective Session Descriptions

Please read and register with your preferred workshops for each of the 4 sessions. We ask that you choose carefully as due to popular demand for spots in some workshops, we cannot guarantee that changes can be made after the registration process is complete. A guide to the Level of experience for the workshop is noted. **Workshops are listed in order of appearance in the program.**

THE SESSION	THE WHO...	THE WHAT
<p>A1</p> <p>Agarose Gel Electrophoresis- from Shoestring to Modern Technology</p> <p><i>Steve Garrett, BioTek Services</i></p> <p>BEGINNERS</p>	<p>Steve Garrett is a Biotechnology Education Consultant who works nationally with schools, industry and the tertiary sector to design, develop and implement hands-on biotechnology learning experiences. Steve is the owner of Bio-Tek Services and was the consultant for the Queensland Government BioBus Project. He established and coordinated the Queensland Biotechnology Education Network for Education Queensland. Steve has designed a comprehensive evidence-based biotechnology education professional development model for educators as part of his Master of Education (Research).</p>	<p>This 'nuts and bolts' hands-on workshop will introduce the basic techniques of agarose gel electrophoresis- a cornerstone technique of biotechnology. Participants will explore a range of equipment, from homemade through to cutting edge and will learn the principles behind the technique show to prepare, set-up, and manage classroom activities, run samples and analyse results. Participants will run dye samples to learn the techniques and also run dye samples in a DNA 'fingerprinting' context in an attempt to determine 'whodunit'. Written resources will be provided which explain the principles and how to set up and run classroom learning experiences. There will be lots of opportunities for discussion and to explore options.</p> <p>Please BYO labcoat.</p>
<p>A2</p> <p>Hiddenvale Research Zoo Facility tour</p> <p><i>Neil Donnelly, UQ</i></p> <p>ALL</p>		<p>Hiddenvale is one of the latest research facilities of Gatton University. Located at the Hiddenvale Resort near Grandchester, Hiddenvale Wildlife Facility provides extensive teaching and research facilities for students as well as secure breeding facilities for native Australian fauna and is headed by Dr Andrew Tribe, guest speaker at ConQEST 2015.</p>
<p>A3</p> <p>Introduction to Chemical Safety & Risk Assessment</p> <p><i>Phillip & Eva RiskAssess EcoSolve</i></p> <p>BEGINNERS</p>	<p>Phillip Crisp</p> <p>Phillip co-founded RiskAssess 10 years ago. He has 40 years' experience in University laboratories, was OHS Coordinator for Engineering at University of NSW for 3 years, and has trained more than 3000 teachers, lab techs and students at safety courses over 25 years. He wrote many appendices for NSW DET "Chemical Safety in Schools", including "Appendix D" on chemical assessment advice.</p> <p>Eva Crisp</p> <p>Eva is a biochemist who has worked more than 10 years in scientific research laboratories. She has also worked in Technical College laboratories, hospitals, public service, accreditation and publishing organisations. She has been the editor and database manager for RiskAssess for 8 years.</p>	<p>See how easy it is to carry out mandatory risk assessments of science experiments using RiskAssess! The general logic and practice of risk assessment is explained. RiskAssess includes a prac ordering and lab scheduling system to help you. Create GHS labels in seconds! Database information is provided on more than 1200 chemicals and their solutions, equipment and biological items.</p>

THE SESSION	THE WHO...	THE WHAT
<p style="text-align: right;">A4</p> <p>Kronosaurus Korner Fish Mash Challenge, a citizen science project</p> <p><i>Michelle Johnston, Kronosaurus Korner (assisted by Deb & Jaimie Cook, Gympie Bone Museum)</i></p> <p>ALL</p>	<p>Michelle Johnston is an experienced Marine Reptile Palaeontologist with a strong focus on Kronosaurus. Awarded Churchill Fellowship in 2016 to investigate the international large marine reptile fossil record and remote palaeotourism. Michelle is the Museum Curator and Interpretive Manager at Kronosaurus Korner, a working museum with nearly 1,150 unique fossil specimens from Richmond and the surrounding areas of northwestern Queensland. From public fossil digs to distance education, Michelle is very focused on the growing educational opportunities being offered at Kronosaurus Korner.</p>	<p>The Kronosaurus Korner Fish Mash Challenge delivers citizen science into the classroom. Meet curator Michelle Johnston and learn all about how you can be a part of the scientific research of a working museum. You'll sort pre-prepared limestone and find 110MYA fossil shark teeth, fish jaws, scales and vertebrae to send back to the museum for future research. The Fish Mash Challenge is open to schools, clubs, community groups and anyone interested in being a part of the future of fossil research in Queensland.</p>
<p style="text-align: right;">A5</p> <p>STELR Sustainable Housing Program</p> <p><i>Pennie Stoyles, STELR</i></p> <p>ALL</p>	<p>Pennie Stoyles is a chemistry teacher, science communicator, author and administrator. She has a passion for STEM education and addressing science literacy at all stages of learning. She managed school and community programming at Scienceworks museum in Melbourne before joining ATSE in 2014 to manage the STELR Programs for schools throughout Australia.</p> <p>You can find out more about STELR at: www.stelr.org.au</p>	<p>Sustainable Housing is a STEM education program designed to engage students in learning about energy and sustainability. It uses the theme of sustainability to harness students' interest in and concern about global warming and climate change. The inquiry-based learning program engages and challenges both students and teachers. Career profiles show study pathways and also encourage students to understand the use and influence of science.</p> <p>The Sustainable Housing module includes lessons for a 4 to 6-week STEM program which maps to year 9 of the Australian Curriculum—Science. Participants will undertake investigations into house design that cover:</p> <ul style="list-style-type: none"> • The particle theory of matter • The states of matter • Heat transfer by convection, conduction and radiation • Conductors and insulators • Sustainability <p>Participants will also look at new career resources produced by STELR</p>
<p style="text-align: right;">A6</p> <p>Introduction to PCR</p> <p><i>Katrina Billington, Southern Biological</i></p> <p>EXPERIENCED</p>	<p>Katrina Billington has a Masters in Biological Science. She has 13 years of scientific research experience in the field of molecular biology, specialising in high throughput screening of mammalian cell cultures and DNA. Katrina contributed to the research at Eliminate Dengue at Monash University for 5 years, first leading the mosquito screening team using real-time PCR, then working as part of the mosquito release program in Townsville, releasing mosquitoes resistant to the Dengue and Zika viruses. She joined Southern Biological in June 2017.</p>	<p>Polymerase Chain Reaction (PCR) is a powerful molecular biology tool that has contributed to some of the most amazing medical and cultural advances of our time. From disease identification and therapies, to insect resistant crops, this technology benefits both humanity and the environment. Despite the complexity of the uses of PCR, the procedure itself is relatively simple – replicate short stretches of DNA of interest until you can measure/see it. Come and learn how this wonderful procedure can be achieved in your classroom with our user friendly MiniPCR and blueGel electrophoresis kit.</p>

THE SESSION	THE WHO...	THE WHAT
<p>A7</p> <p>Tools for Data Collection in Senior Syllabus <i>Gurion Ang, UQ</i> ALL</p>	<p>Dr Gurion Ang is an engagement-focussed academic from the Faculty of Science, UQ. He completed his PhD with UQ School of Biological Sciences. His research focused on understanding the intricate relationships between pest insects and crop plants. Presently, Gurion teaches into undergraduate and postgraduate ecology and zoology courses at UQ. He is also coordinating the development and delivery of teacher Continuing Professional Development to support the new suite of science, mathematics, and technologies curricula for senior years in QLD.</p>	<p>Across the new suite of science General Senior Syllabuses for implementation in 2019, there is greater emphasis for students to improve their scientific numeracy through proficiency in data collection, and basic data analysis and data interpretation. These skills are fundamental to enhancing creative and critical thinking in our next generation of STEM practitioners. In this session, we will show how free software and phone applications can facilitate more efficient data collection and data analysis. These methods will be applicable to data collected from practicals in physics, chemistry, mathematics, and marine science.</p> <p>You will benefit most from this session if you bring along your Smartphones (Android only), and personal laptops (Windows only).</p>
<p>B1 / C1.3</p> <p>Implementing the Mandated Practical in the new senior courses <i>Doug Bail, Ciderhouse</i> ALL</p>	<p>Doug Bail started teaching in the mid-eighties and worked for many years in schools as a Maths/Physics/Science teacher. He was a Head of Science, Director of Technology and directly involved in innovative curriculum development. In recent years he has run his own company specialising in quality science equipment including the PASCO scientific range of Physics and electronic measure. This has presented the opportunity to both learn and present professional development in schools around the world.</p> <p>He is also the co-ordinating author for the Pearson Physics Skills and Assessment books for the new Queensland senior science curriculum.</p>	<p>The syllabus is out, the last updates are through and now come the resources. This session will look at on the central role of the mandated and suggested practical activities and the resources being developed by PASCO and Pearson to assist in implementing them - equipment lists, written and electronic pracs, data tests, risk assessments and more. Not just a vague equipment list or a reference to an overseas prac but material specifically written for the Queensland courses. Whether you have PASCO gear or not, these resources can work for you with the material written to allow the use of a wide variety of options while being enhanced by PASCO gear where you have it.</p> <p>Samples will be available and we'll work through particular approaches looking at the renewed emphasis on uncertainties and data analysis and its importance to internal and external assessment tasks.</p>
<p>B2</p> <p>In De Pendant Genes <i>Steve Garrett, BioTek Services</i> ALL</p>	<p>Steve Garrett is a Biotechnology Education Consultant who works nationally with schools, industry and the tertiary sector to design, develop and implement hands-on biotechnology learning experiences. Steve is the owner of Bio-Tek Services and was the consultant for the Queensland Government BioBus Project. He established and coordinated the Queensland Biotechnology Education Network for Education Queensland. Steve has designed a comprehensive evidence-based biotechnology education professional development model for educators as part of his Master of Education (Research).</p>	<p>This hands-on workshop enables participants to prepare their own DNA which they will take away wearing in a glass pendant! This simple Education Queensland approved laboratory procedure was developed as a hands-on student activity for the Queensland Government BioBus (traveling biotechnology exhibition). Cells from the inside of the mouth are harvested, lysed, enzyme treated and the DNA extracted (specific SOP's). The DNA is then collected, sealed in a glass pendant and worn around the neck. This activity requires no specialized equipment yet enables students to appreciate a number of the properties of this important molecule. All aspects of legislation, standards and guidelines will be discussed.</p> <p>Please BYO labcoat.</p>

THE SESSION	THE WHO...	THE WHAT
<p style="text-align: right;">B3</p> <p>Interactive virtual tour of the Gympie Bone Museum <i>Deb & Jamie Cook, Gympie Bone Museum</i> ALL</p>	<p>Deb & Jaimie are two science tragics that can't help themselves. Not content with running the wildly busy and successful science supply businesses Dissection Connection and Rockhoundz they have now launched into the Gympie Bone Museum. Opened in December 2017, the Gympie Bone Museum is a project designed to let our little town shine as a regional hub for science, innovation and tourism. Gympie Bone Museum is Australia's first and only museum dedicated to modern bones and skeletons and specializes in hands-on experiences for visitors. The Gympie Bone Museum is a non-profit organization and registered charity. Don't clap – throw money! Gympiebonemuseum.org.au</p>	<p>Experience the Gympie Bone Museum from the comfort of your classroom as Deb gives you a live and interactive guided tour around the collection. Meet the flesh-eating beetles. Marvel at the camel that Jaimie built. Make her put up every single x-ray one at a time and explain it to you.</p> <p>Prepare yourself for the weirdness of the two-headed calf, Calfy McCalfface. Gympie Bone Museum – come and see what you'll look like later!</p>
<p style="text-align: right;">B4 / C2.1</p> <p>Treating microscopes with care <i>Rod Aggett, Edu Supplies</i> Beginner</p>	<p>EduSupplies was founded in 2008 by Rod Aggett who has over 25 years of experience in educational supply to Australian school and university market. EduSupplies has been a dedicated supplier of microscope and balance sales and servicing and other educational products in Australia.</p> <p>Our usage of innovative technology drives us to be efficient in servicing microscopes and balances and brings extra benefits to lab technicians. We are currently running Maintenance Organisation and Planning System (MOPS) and QR Code allowing clients to identify and report faulty microscopes and balances, book service, keep track of their performance, save time dealing with issues, and collect membership rewards.</p>	<p>We firmly believe that only when microscopes are treated well will molecule under microscopes become moleCOOL and students obtain the best study performance. Our presentation will demonstrate small and useful tips for basic microscope maintenance that lab technicians can perform by themselves. Tips/ 'easy fix' solutions will cover how to keep microscopes in class rooms, how to solve small microscope issues, and how to use microscopes more effectively. This will help you keep your microscopes in the classroom rather than sitting on a 'to be repaired' bench.</p> <p>We will also advise you with important factors to consider when purchasing new microscopes and balances.</p> <p>In addition, to deliver the best experience of Maintenance Operating Planning System (MOPS) and QR Code to clients, the participants are welcome to try our latest MOPS and QR Code during the workshop.</p>
<p style="text-align: right;">B5</p> <p>If it doesn't work, it's physics <i>Phil Jones, Logical Interface</i> ALL</p>	<p>Phil Jones has a BSc(HONS) (Sydney), MSc(HONS) (Macquarie), DipEd. He has taught science, physics and IT subjects in Australia and Europe and has been a lecturer in the DipEd program at Sydney Institution of Education, Sydney Uni. He has written a number of software programs and developed a range of interfaces and sensors for science. He regularly presents workshops for science teachers' associations, schools, TAFE colleges and universities. He is currently manager of The Logical Interface.</p>	<p>When I first started teaching physics the Magnus Pyke quote "If it squirms, it's biology. If it stinks, it's chemistry. If it doesn't work, it's physics. ..." was certainly true of physics. I struggled with the equipment I had available to me including ticker timers and ripple tanks. I frustrated both myself and my students trying to explain why our results were rarely accurate and I longed for equipment that would allow me to perform experiments with acceptable results. Today teachers have access to inexpensive equipment which allows them to perform sophisticated experiments which both enthuse and excite their students. In this workshop we will examine:</p> <ul style="list-style-type: none"> • Data Logging Technology is an extremely powerful data acquisition and analysis tool for physics. I will examine many rarely used physics experiments using data loggers. • PC Based Signal Generator and Oscilloscope (CRO). • Video Analysis of Motion. An accurate and exiting way to analyse motion. • Simulation software – Krucible, Interactive Physics and Yenka are revolutionary software for creating simulations and demonstrating experiments that are impractical in the secondary science lab.

THE SESSION	THE WHO...	THE WHAT
<p>B6 / C1.4</p> <p>Techniques in Microbiology</p> <p><i>Peter Ball, Southern Biological</i></p> <p>ALL</p>	<p>Peter Ball started his career in scientific research then moved to industry where he spent nearly 20 years as an industrial chemist and business manager in the field of plastics, resins and colorants before becoming a director of Southern Biological in 2001. He now enjoys combining his interests in science and education.</p>	<p>The first part of this workshop will cover some basic aspects of working with micro-organisms – aseptic technique, subculturing, preparing a bacterial lawn, and safe waste disposal. From this base, we will introduce some practical activities that lend themselves to classroom activities and individual student projects. These will include culturing fungi, studying antibiotic resistance of bacteria and using Petrifilm in student experiments. If you have not used test discs, Maststrings or Petrifilm, nor cultured the intriguing fungus, <i>Phycomyces blakesleeanus</i>, then this workshop is for you.</p>
<p>B7</p> <p>Gatton University Research Tour</p> <p><i>Neil Donnelly, UQ</i></p> <p>ALL</p>	<p>This tour will be delivered by a UQ Gatton Student Ambassador</p>	<p>Gatton Campus of University of Queensland is the oldest tertiary campus in Queensland – starting as Queensland Agriculture College in 1897. Today it is a world class, 21st century research facility and university campus.</p> <p>Join the Gatton research tour to see some of the following</p> <ul style="list-style-type: none"> • Solar farm research • Research wind tunnel • Gatton Research dairy • Biosecurity facility • Equine precinct • Community Garden • Environmental Precinct featuring Lakes Galletly and Lenor
<p>B8</p> <p>Drones in Agriculture and Education</p> <p><i>G-Vec, UQ</i></p> <p>ALL</p>		<p>Drones in agriculture and education</p>
<p>C1.1</p> <p>RiskAssess: tips and tricks for experienced users!</p> <p><i>Phillip, Eva & James Crisp, RiskAssess EcoSolve</i></p> <p>EXPERIENCED</p>	<p>As per session A3</p>	<p>See the latest features of RiskAssess demonstrated. Learn the tricks for creating standard GHS labels for more than 1200 pure chemicals and their aqueous solutions, plus custom labels for everything else. Learn to customize year groups, download scheduling, stock-take and review usage, reschedule experiments, use electronic resources, archive risk assessments, create LabTech-only risk assessments, view student PINs, do annual review, use shortcuts, and more! Questions welcome!</p>
<p>C1.2</p> <p>Key experiments: inquiry approaches using data loggers in Chemistry</p> <p><i>Stuart Lewis, Scientrific</i></p> <p>ALL</p>	<p>Stuart is a Science Communicator who has developed and conducted outreach programs for QUESTACON, NRMA and the Australian Trucking Association. He is currently developing and presenting for Scientrific that focus on Science literacy outcomes through innovative and engaging activities that involve the integration of new technologies.</p>	<p>Are you looking for ways of collecting data from the Australian Curriculum: Science?</p> <p>A range of key experiments will be setup in a series of workstations with which participants can engage. The experiments will be selected from: Exothermic and Endothermic reactions; Testing with Beers law; Titrations with digital sensors; respiration of plants; and more. A range of sensors will be utilised to collect real time data for analysis and interpretation. Ideas for further investigations will also be explored.</p>

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<p>C1.5</p> <p>Tissue Culture Techniques</p> <p><i>Mel Schneemilch, UQ</i></p> <p>ALL</p>	<p>BSc Majors Biology and Environmental Studies, Honours, PhD in plant propagation and pollination biology. Academic and Professional experience at two Australian Universities over 18 years including research into tissue culture propagation of native plant species.</p>	<p>Attendees will examine methods by which to teach tissue culture techniques to large classes. Topics covered include making media, growth hormones, maintaining aseptic technique and sterilisation of explants.</p>
<p>C2.2</p> <p>Exploring Solar Energy for Middle School Science, with Solar Cars</p> <p><i>Stuart Lewis, Scientrific</i></p> <p>ALL</p>	<p>Stuart is a Science Communicator who has developed and conducted outreach programs for QUESTACON, NRMA and the Australian Trucking Association. He is currently developing and presenting for Scientrific that focus on Science literacy outcomes through innovative and engaging activities that involve the integration of new technologies.</p>	<p>A STEM approach to exploring solar energies will see participants designing, making and testing a solar car to race against each other! Who can design and build the fastest machine? The approach used involves students conducting a scientific investigation to gather data on relevant variables to improve performance of the car. The results are incorporated into the design, development and testing of the vehicle creating an integrated STEM approach to learning. Participants will have the opportunity to conduct some investigation then design and build a solar car. The content fits well with Year 8 forms of energy and Year 9 energy transfer topics.</p>
<p>C2.3</p> <p>Make it real! Stimulating Technology for the Biology classroom.</p> <p><i>Phil Jones, Logical Interface</i></p> <p>ALL</p>	<p>Phil Jones has a BSc(HONS) (Sydney), MSc(HONS) (Macquarie), DipEd. He has taught science, physics and IT subjects in Australia and Europe and has been a lecturer in the DipEd program at Sydney Institution of Education, Sydney Uni. He has written a number of software programs and developed a range of interfaces and sensors for science. He regularly presents workshops for science teachers' associations, schools, TAFE colleges and universities. He is currently manager of The Logical Interface.</p>	<p>Sophisticated technology, once only the domain of forensic and research laboratories, is now within the reach of every science educator. Such technologies excite students and bring a sense of relevance to learning science. In this workshop I examine a number of such technologies for teaching biology, including:</p> <ul style="list-style-type: none"> • Digital imaging and microscopy: Digital eyepieces and digital microscopes provide a cost effective way of stimulating students and introducing them to new experiences such as forensic science and technology based research. Examples include using time lapse photography to capture seeds germinating and insects going through metamorphosis. Sophisticated software allows students to do calibrated measurement and counting as well as capture video and time-lapse video. • New developments in data loggers: The new generation of educational data loggers makes data logging easier and more accessible. Combine this technology with Netbook PCs or Tablets and data loggers become a powerful and essential tool for science education. • Strategies for collecting data in the field - when to use data loggers and when to use alternative instruments. • Software to perform "modelling". Digital technology allows us to make predictions based on scientific knowledge. This technique is commonly used in scientific research and is now included in the new national curriculum.
<p>C2.4</p> <p>Enzyme Action – Catalase</p> <p><i>Theresa Holt, Southern Biological</i></p> <p>ALL</p>	<p>Theresa Holt returned to science after many years away. Her original plan to earn a diploma in laboratory techniques morphed into a degree with honours in chemistry and biochemistry, including a year's work experience in a research lab at Peter MacCallum Cancer Centre. After a short stint on the flu vaccine production line, she landed at Southern Biological where she enjoys the chance to share her training with teaching staff across the country.</p>	<p>Being able to obtain quantitative results when studying enzymes is now an important part of student projects. This workshop will focus on the degradation of hydrogen peroxide by catalase, an important reaction for the protection of cells from oxidative damage. Join us as we examine how enzyme concentration affects the rate of reaction of catalase. After an introduction explaining the way catalase works and why it is so widely encountered in living organisms, this workshop will switch to "hands on" mode and two methods for following this reaction will be presented, each capable to yielding meaningful numerical data on the rate of reaction.</p>

THE SESSION	THE WHO...	THE WHAT
<p>C2.5</p> <p>Entomology</p> <p><i>Lochaln Fowler, UQ</i></p> <p>ALL</p>		Capture, breeding and preparation of insects for study.
<p>CC1</p> <p>DNA and Protein Electrophoresis</p> <p><i>Steve Garrett, BioTek Services</i></p> <p>Intermediate</p>	<p>Steve Garrett is a Biotechnology Education Consultant who works nationally with schools, industry and the tertiary sector to design, develop and implement hands-on biotechnology learning experiences. Steve is the owner of Bio-Tek Services and was the consultant for the Queensland Government BioBus Project. He established and coordinated the Queensland Biotechnology Education Network for Education Queensland. Steve has designed a comprehensive evidence-based biotechnology education professional development model for educators as part of his Master of Education (Research).</p>	<p>This hands-on workshop introduces the basic techniques of agarose gel electrophoresis using 'ready to load' DNA samples. Participants will explore the electrophoresis of a range of prepared DNA samples and will learn the principles behind the techniques of several DNA staining options including visible and fluorescent staining. The session will also introduce the techniques relevant to protein electrophoresis. Written resources will be provided which explain the principles and how to set up and run classroom learning experiences. There will be lots of opportunities for discussion and to explore options.</p> <p>Please BYO labcoat.</p>
<p>CC2</p> <p>Titration – preparation and practice</p> <p><i>Elaine Bergmann, RACI</i></p> <p>ALL</p>	<p>Eline Bergmann BSc (UQ); Dip Ed; M Cont Sc (ANU); FRACI CChem</p> <p>Elaine taught Chemistry in Queensland schools until her retirement in 2012. She became involved with the Chemical Education Group of RACI (Qld Branch) in 1992 and remains an active member, currently serving as Treasurer. Throughout her teaching career, she trained many successful teams for the Titration Competition (which began in 1984). Since retiring from teaching, she has served as the RACI National Titration Coordinator.</p>	<p>With the inclusion of titration as a compulsory practical in the new Senior Chemistry course, it is vital that students are given the opportunity to learn this technique correctly and safely. In this hands-on workshop participants will learn correct protocols and techniques and develop an understanding of the rationale for these. Instruction and practice on basic techniques will be followed by a focus on the finer points that contribute to greater accuracy and precision.</p>
<p>CC3</p> <p>STELR Renewable Energy Program</p> <p><i>Pennie Stoyles, STELR</i></p> <p>ALL</p>	<p>As per session A5</p>	<p>Renewable Energy is a STEM education program designed to engage students in learning about energy and sustainability. It uses the theme of renewable energy to harness students' interest in and concern about global warming and climate change. The inquiry-based learning program engages and challenges both students and teachers. Career profiles encourage students to understand the use and influence of science.</p> <p>The Renewable Energy module includes lessons for a 4 to 6-week STEM program which maps to years 7-10 of the Australian Curriculum-Science.</p> <p>It uses investigations into solar and wind energy to cover:</p> <ul style="list-style-type: none"> • Energy transfer and transformation • Conservation of energy and energy efficiency • Electricity generation and use • Electrical power and electric circuits • Maths activities are embedded throughout. • http://www.stelr.org.au/renewable-energy/ <p>Participants will work on solar and wind energy challenges that are part of the curriculum materials supplied to schools. They will also look at new career resources produced by STELR</p>

