



Department of  
Education

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# SCIENCE LABORATORY TECHNICIAN CONFERENCE 2018

HOSTED BY THE  
REGIONAL LABORATORY TECHNICIAN  
GROUP

## PROGRAM



AUDITORIUM THURSDAY DECEMBER 6, 2018	
8:00am – 8:30am	<ul style="list-style-type: none"><li>• <b>Registration.</b></li></ul>
8:30am – 8:50am	<ul style="list-style-type: none"><li>• <b>Introduction by:</b> Ms Julie Carey, Senior Regional Laboratory Technician, Statewide Services; and Ms Mary Margetts, Principal, North Lake Senior Campus.</li><li>• <b>Welcome to Country:</b> Ms Frances Ramsey, Aboriginal &amp; Islander Education Officer, Belmont City College.</li></ul>
8:50am – 9:40am	<ul style="list-style-type: none"><li>• <b>Guest speaker:</b> <a href="#">MINDZ</a> / brainplay demonstration.</li></ul>
9:40am – 10:00am	<ul style="list-style-type: none"><li>• <b>Presentation:</b> Regional Laboratory Technician Group (RLTG) annual awards.</li></ul>
10:00am – 10:30am	<ul style="list-style-type: none"><li>• <b>Morning tea.</b></li></ul>
WORKSHOPS THURSDAY DECEMBER 6, 2018	
<b>T1-4 Thursday 10:30am – 3:45pm (4 hour session)</b> <b>MICROSCALE CHEMISTRY AND GAS</b>	<ul style="list-style-type: none"><li>• <b>Presented by:</b> RLTG, Statewide Services; and Mr Robert (Bob) Worley, UK CLEAPSS chemistry advisor.</li></ul>
<b>T2-4 Thursday 10:30am – 3:45pm (4 hour session)</b> <b>GEL ELECTROPHORESIS</b>	<ul style="list-style-type: none"><li>• <b>Presented by:</b> Ms Sylvia Johnston Regional Laboratory Technician, Statewide Services.</li></ul>

<b>T3-4 Thursday 10:30am – 3:45pm (4 hour session)</b> <b>EXPLORING UPPER SCHOOL PHYSICS</b>	<ul style="list-style-type: none"> <li>• <b>Presented by:</b> Dr Tracey Fisher, Physics Teacher, North Lake Senior Campus; Ms Belinda Schmolke, Science Teacher, North Lake Senior Campus; and Ms Jennifer Rolfe, Laboratory Technician, North Lake Senior Campus.</li> </ul>
<b>T4-2 Thursday 10:30am – 12:45pm (2 hour session)</b> <b>USING SOIL AND WATER TESTING EQUIPMENT</b>	<ul style="list-style-type: none"> <li>• <b>Presented by:</b> Ms Mandy Sergeant, Regional Laboratory Technician, Statewide Services; and Ms Jill Stack, Regional Laboratory Technician, Statewide Services.</li> </ul>
<b>T5-2 Thursday 10:30am – 12:45pm (2 hour session)</b> <b>THERMAL IMAGING CAMERAS AND INFRA-RED THERMOMETERS</b>	<ul style="list-style-type: none"> <li>• <b>Presented by:</b> Ms Jane Morrow, Laboratory Technician, Dalrymple College.</li> </ul>
<b>T8-2 Thursday 10:30am – 12:45pm (2 hour session)</b> <b>INTEGRATING TECHNOLOGY TO ENGAGE LEARNERS IN SCIENCE</b>	<ul style="list-style-type: none"> <li>• <b>Presented by:</b> Mr Paul Moro, Chief Executive Officer, Foundation for Educational Digital Development (FEDD).</li> </ul>
<b>LUNCH</b> <b>12:45pm – 1:30pm</b>	
<b>T6-2 Thursday 1:30pm – 3:45pm (2 hour session)</b> <b>DATA LOGGING FOR SENIOR SCHOOL SCIENCE</b>	<ul style="list-style-type: none"> <li>• <b>Presented by:</b> Mr Allan Morrison, Education Officer, Scientrific.</li> </ul>
<b>T7-2 Thursday 1:30pm – 3:45pm (2 hour session)</b> <b>ASTRONOMY IN WA AND TELESCOPES</b>	<ul style="list-style-type: none"> <li>• <b>Presented by:</b> Mr Richard Tonello, Manager, Astronomy Education Services.</li> </ul>
<b>T8-2 Thursday 1:30pm – 3:45pm (2 hour session)</b> <b>USING 3D MODELLING</b>	<ul style="list-style-type: none"> <li>• <b>Presented by:</b> Mr Paul Moro, Chief Executive Office Foundation for Educational Digital Development (FEDD).</li> </ul>
<b>AUDITORIUM</b> <b>FRIDAY DECEMBER 7, 2018</b>	
<b>8:00am – 8:30am</b>	<ul style="list-style-type: none"> <li>• <b>Registration.</b></li> </ul>
<b>8:30am – 8:35am</b>	<ul style="list-style-type: none"> <li>• <b>Introduction by:</b> Ms Julie Carey, Senior Regional Laboratory Technician, Statewide Services.</li> </ul>

8:35am – 9:05am	<ul style="list-style-type: none"> <li>• <b>Guest speaker:</b> Mr Peter Wilmot, Specialist-Commercial &amp; Industrial Services, Water Corporation WA.</li> </ul> <p><b>SCHOOL PERMITS TO DISCHARGE WASTE REQUIREMENTS.</b></p>
9:05am – 10:00am	<ul style="list-style-type: none"> <li>• <b>Guest speaker:</b> Mr Paul Moro, Chief Executive Officer, Foundation for Educational Digital Development (FEDD).</li> </ul>
10:00am – 10:30am	<ul style="list-style-type: none"> <li>• <b>Morning tea.</b></li> </ul>
<b>WORKSHOPS FRIDAY DECEMBER 7, 2018</b>	
<b>F1-4 Friday 10:30am – 3:45pm (4 hour session)</b>  <b>MICROSCALE CHEMISTRY AND GAS</b>  This is a repeat of the Thursday 6 December session 10.30am – 3.45pm.	<ul style="list-style-type: none"> <li>• <b>Presented by:</b> RLTG Statewide Services; and Mr Robert (Bob) Worley, UK CLEAPSS chemistry advisor.</li> </ul>
<b>F2-4 Friday 10:30am – 3:45pm (4 hour session)</b>  <b>INTRODUCTION TO LABORATORY TECHNIQUES</b>	<ul style="list-style-type: none"> <li>• <b>Presented by:</b> Ms Jan Howman former Regional Laboratory Technician; and Julie Carey, Senior Regional Laboratory Technician, Statewide Services.</li> </ul>
<b>F4-4 Friday 10:30am – 3:45pm (4 hour session)</b>  <b>UPPER SCHOOL CHEMISTRY</b>	<ul style="list-style-type: none"> <li>• <b>Presented by:</b>  Mr Bradley Hearn, Teacher of Science, Belmont City College.</li> </ul>
<b>F3-2 Friday 10:30am – 12:45pm (2 hour session)</b>  <b>DATA LOGGING FOR MIDDLE SCHOOL SCIENCE</b>  This is a repeat of the Thursday 6 December session 1.30pm – 3.45pm.	<ul style="list-style-type: none"> <li>• <b>Presented by:</b> Mr Allan Morrison, Education Officer, Scientrific.</li> </ul>
<b>F4-2 Friday 10:30am – 12:45pm (2 hour session)</b>  <b>ENABLING LABORATORY TECHNICIANS TO SUPPORT EARTH SCIENCE</b>	<ul style="list-style-type: none"> <li>• <b>Presented by:</b> Ms Cecily Arkell, Education Officer, Earth Science Western Australia (ESWA).</li> </ul>
<b>F5-2 Friday 1:30pm – 3:45pm (2 hour session)</b>  <b>ASTRONOMY IN WA AND TELESCOPES</b>  This a repeat of Thursday 6 December session 1.30pm – 3.45pm.	<ul style="list-style-type: none"> <li>• <b>Presented by:</b> Mr Richard Tonello, Manager, Astronomy Education Services.</li> </ul>

<p><b>F6-2 Friday 1:30pm – 3:45pm (2 hour session)</b></p> <p><b>ENABLING LABORATORY TECHNICIANS TO SUPPORT EARTH SCIENCE</b></p> <p>This a repeat of the Friday morning session 10.30am – 12.45pm.</p>	<ul style="list-style-type: none"> <li>• <b>Presented by:</b> Ms Cecily Arkell, Education Officer, Earth Science Western Australia (ESWA).</li> </ul>
<p><b>F7-2 Friday 1:30pm – 3:45pm (2 hour session)</b></p> <p><b>USING SOIL AND WATER TESTING EQUIPMENT</b></p> <p>This is a repeat of the Thursday 6 December session 10.30am – 12.45pm.</p>	<ul style="list-style-type: none"> <li>• <b>Presented by:</b> Ms Mandy Sergeant, Regional Laboratory Technician, Statewide Services; and Ms Jill Stack, Regional Laboratory Technician, Statewide Services.</li> </ul>
<p><b>F8-2 Friday 1:30pm – 3:45pm (2 hour session)</b></p> <p><b>BIOSECURITY BLITZ</b> <b>THIS WORKSHOP IS YET TO BE CONFIRMED (TBC)</b></p>	<ul style="list-style-type: none"> <li>• <b>Presented by:</b> Department of Primary Industries and Regional Development</li> </ul> <p>TBC</p>
WORKSHOP DESCRIPTIONS	PRESENTERS
<p><b>MICROSCALE CHEMISTRY AND GAS</b></p> <p>This workshop will enable participants to <b>conduct quick, small-scale chemistry in the classroom using various practical procedures</b> such as electrolysis, precipitation, indicators, microscale gas in a syringe amongst others.</p> <p>Bob Worley will be co-presenting this exciting workshop with members of the RLTG.</p> <p>This workshop is offered on both days with large class numbers allocated so all participants have an opportunity to attend. <b><u>This is a workshop not to be missed</u></b>, so please make sure you register for one of the days.</p>	<ul style="list-style-type: none"> <li>• <b>Presented by:</b> RLTG, Statewide Services; and Mr Robert (Bob) Worley, UK CLEAPSS chemistry advisor.</li> </ul> <p><a href="#">Bob Worley, FRSC,MSc</a></p> <p><a href="https://youtu.be/jo4Kz8-FqVo">https://youtu.be/jo4Kz8-FqVo</a></p> <p>Bob is passionate about chemistry and even though he's retired he still loves to travel the world spreading his enthusiasm for microscale chemistry and it's many benefits for school science.</p>
<p><b>GEL ELECTROPHORESIS</b></p> <p>Gel electrophoresis is a specific separation technique used in forensics, medicine and molecular biology and is part of the Year 12 ATAR Human Biology course.</p> <p>This workshop will explain the basic theory behind how it all works and provide hands on training with the electrophoresis equipment.</p>	<ul style="list-style-type: none"> <li>• <b>Presented by:</b> Ms Sylvia Johnston Regional Laboratory Technician, Statewide Services</li> </ul>

## EXPLORING UPPER SCHOOL PHYSICS

This will be a practical workshop exploring and setting-up a range of experiments and demonstrations used to teach upper school physics. Experiments are from key topics within the Year 11 and 12 course and include a variety of electricity and magnetism experiments, line spectra, spectroscopy, light emitting diodes and Planck's constant, mechanical wave motion and resonant effects, forces and motion, heating and cooling. In addition, the use of pHet simulations for nuclear physics and the photoelectric effect will be explored.

Participants will gain skills in the setting up and use of physics equipment to assist them in the preparation of physics practicals and have a greater understanding of the physics behind these experiments.

- **Presented by:**

Dr Tracey Fisher, Physics Teacher, North Lake Senior Campus;  
Ms Belinda Schmolke, Science Teacher, North Lake Senior Campus; and  
Ms Jennifer Rolfe, Laboratory Technician, North Lake Senior Campus.

Physics teacher, Dr. Tracey Fisher was published in 2017 as contributor to both the Year 11 and Year 12 *Pearson Western Australia Physics Book*.

Tracey is an expert in her field she has a comfortable presentation style that makes learning fun.

## USING SOIL AND WATER TESTING EQUIPMENT

During this session, participants will learn how to use various equipment available in the science loan pool such as Palintest soil and water kits, dissolved oxygen kits and multi parameter meters. Techniques will be discussed and practiced to become familiar with the equipment students can use.

Participants can gain a greater understanding of the practical use of the water testing equipment available for loan from the Regional Laboratory Technician loan pool of specialised equipment (used for Integrated Science – ATAR Year 11 and Year 12 course). Participants will gain an insight into water and soil testing results.

- **Presented by:**

Ms Mandy Sergeant, Regional Laboratory Technician, Statewide Services; and  
Ms Jill Stack, Regional Laboratory Technician, Statewide Services.

As co-ordinator of the loan pool equipment for the RLTG, Mandy has recently purchased some new water and soil testing kits. This will be the first time these kits will have been used, so this is an ideal opportunity to get exposure to these updated kits.

## THERMAL IMAGING CAMERAS AND INFRA-RED THERMOMETERS

A Sixth Sense - Making the Invisible Visible  
Using the thermal cameras.

In this playful session participants will explore the infra-red end of the spectrum using their senses, conventional laboratory equipment and the thermal cameras.

Learn how to use them with school's electronic devices and explore their application throughout the science curriculum from physics, chemistry and biology to forensic science and building inspection.

- **Presented by:**

Ms Jane Morrow, Laboratory Technician, Dalzellup College.

Jane (the presenter) and Ms Carolyn Hayes laboratory technicians from Dalzellup College were kind enough to trial this new loan pool equipment for the RLTG.

Jane and Carolyn have come up with interesting experiments and ideas for the use of the thermal imaging cameras and infra-red thermometers

## INTEGRATING TECHNOLOGY TO ENGAGE LEARNERS IN SCIENCE

This workshop is all about exploring how technology can be used to deliver student centric, project-based learning so that students stay engaged in the learning of discipline specific content.

Participants will learn about and try practical solutions and applications such VR/AR, Data Collection, 3D Virtual Environments, Gamification and Programming. The focus is on leading learners to be creative and innovative by using technology and how this can be used to build a deeper understanding of the content.

There will also be opportunity to learn and discuss how schools have implemented technology in their school and explore alternative resources/technologies to us in the learning spaces. Examples such as 3D Modelling, Artificial Intelligence(Ai), Internet of Things (IoT) and Cloud Technologies will be discussed.

- **Presented by:**  
Mr Paul Moro, Chief Executive Officer,  
Foundation for Educational Digital  
Development (FEDD).

[www.fedd.org.au](http://www.fedd.org.au)

## Using 3D Modelling and Printing Technology to Create Teaching Resources

In this workshop participants will be shown a range of technology solutions that can be used to build content, resources and practical solutions to use in classrooms and laboratories. This will allow schools to expose students to learning environments that they are immersed in outside of school, virtual and/or 3D spaces but focused on science. Participants will also be shown how to use modelling software to build this content and handy/technical solutions to use in labs and experiments. This opens up a new world where you can 3D Print “bits and bobs” and one-off fixes to unusual lab tools. Come and explore and have some fun!

- **Presented by:**  
Mr Paul Moro, Chief Executive Officer,  
Foundation for Educational Digital  
Development (FEDD).

[www.fedd.org.au](http://www.fedd.org.au)

## DATA LOGGING FOR SENIOR SCHOOL SCIENCE

### Abstract

Real time data analysis is possible using Bluetooth sensors connected directly to mobile devices. In this workshop participants will have an opportunity to connect a sensor device directly to an iPad or mobile phone, as well as use traditional data loggers with plug in sensors. Data sharing will also be explored using Bluetooth and wifi devices. Participants will have opportunities to explore hands-on experiments that may include: collisions and motion; projectile motion; simulated rocket launch; chemical reaction kinetics and equilibrium; water testing protocols; rates of photosynthesis.

- **Presented by:**  
Mr Allan Morrison, Education Officer, Scientrific

This year Allan is showcasing up to date Bluetooth technology. Allan is an experienced and knowledgeable presenter who has a background in education.

## DATA LOGGING FOR MIDDLE SCHOOL SCIENCE

Real time data analysis is possible using Bluetooth sensors connected directly to mobile devices. In this workshop participants will have an opportunity to connect a sensor device directly to an iPad or mobile phone, as well as use traditional data loggers with plug in sensors. Data sharing will also be explored using Bluetooth and Wi-Fi devices.

Participants will have opportunities to explore hands-on experiments that may include: Greenhouse Effect; frictional and gravitational forces; collisions and motion; performance of solar panels and generators and rates of chemical reactions.

- **Presented by:**

Mr Allan Morrison, Education Officer, Scientrific

This year Allan is showcasing up to date Bluetooth technology. Allan is an experienced and knowledgeable presenter who has a background in education.

## ASTRONOMY IN WA AND TELESCOPES

This two-hour session will provide an overview of what the Gravity Discovery Centre and Astronomy Education Services can offer to school groups, as well as a practical session on setting up and using a telescope.

Participants will gain knowledge of optimal set up of telescopes and use this to assist their school to set up any telescopes for students.

\* Science week for 2019 is the 50<sup>th</sup> anniversary of the moon landing.

- **Presented by:**

Mr Richard Tonello, Manager,  
Astronomy Education Services.

Richard is Manager and Senior Astronomer at the Gravity Discovery Centre Observatory, Gingin, and his goal is to make it the best public Astronomical Observatory in the country.

<http://www.astro-ed-services.com/>

## UPPER SCHOOL CHEMISTRY

Participants will learn the correct techniques involved in the preparation of a standard solution and use this solution to perform a titration including calculations.

At the conclusion of this workshop, participants will be proficient in the techniques of titrations, enabling them to be effective in their role supporting Year 12 ATAR Chemistry tasks involving titrations:

- **Presented by:**

Mr Bradley Hearn, Chemistry Teacher,  
Belmont City College.

Brad has been involved with the titration competition and has had some excellent results.



## INTRODUCTION TO LABORATORY TECHNIQUES

This hands on workshop and will be paced to ensure that participants are confident at the completion of the workshop to:

- identify glass wear and its correct use
- get the right chemical and know when to ask for help
- make a molar solution using basic techniques and equipment
- dilute an acid from a stock solution and understanding the maths behind it
- make a standard solution for use with titrations
- use safety equipment in science

Participants will gain the skills to prepare solutions for use in the classroom and be able to confidently identify the equipment needed to perform basic laboratory techniques.

### • Presented by:

Ms Jan Howman former Regional Laboratory Technician; and  
Julie Carey, Senior Regional Laboratory Technician, Statewide Services.

Both Jan and Julie have worked as laboratory technicians in school science laboratories and between them have over 50 years' experience.

## ENABLING LABORATORY TECHNICIANS TO SUPPORT EARTH SCIENCE

The Woodside Australian Science Project (WASP) resources support the teaching of earth science from Years 4 to 10. A major feature of these Australian Curriculum teaching packages are the numerous hands-on activities and practicals.

This session will provide participants with background on the Year 7-10 packages, an overview of the practicals within them, advice on equipment and materials needed.

### • Presented by:

Cecily Arkell, Education Officer, Earth Science Western Australia (ESWA).

Cecily Arkell is passionate about earth science and loves sharing that passion with others. She joined Earth Science Western Australia (ESWA) in 2018 as a classroom primary and high school teacher in both rural and city locations. Cecily started in laboratories in the mining industry and she also gained some experience teaching English in Japan.

[www.wasp.com.au](http://www.wasp.com.au)

## BIOSECURITY BLITZ

This course has not been confirmed.

Information will be available once this has been locked in.