

LABLINES

OFFICIAL PUBLICATION OF THE LABORATORY TECHNICIANS' ASSOCIATION OF VICTORIA
TIPS, TRICKS & MORE. YOUR GO TO GUIDE FROM LAB TECHS, FOR LAB TECHS | VOLUME 45 | 2025 | ISSUE 2



DON'T WORRY, WE'VE SEEN WORSE!

Cover image by Visual Stories



DGL Envirostore is your specialist laboratory chemical disposer.

When you book a disposal with Envirostore, our team will arrive onsite to pack and transport your chemical wastes back to our disposal facility, with no equipment or participation necessary on your behalf.



- We provide:
- Full disposal services, with EPA approved collection and transport included
 - Transport of laboratory chemicals and equipment between campuses
 - Compliant containers for liquid chemical consolidation (**FREE** for our customers)
 - Qualified chemical advice on storage, compliance and best lab practices (**FREE** for our customers)
 - Effective spill kits and absorbents

Please visit us at www.envirostore.com.au, where you can find advice and downloadable materials under the “**For Schools**” tab, as well as our chemical manifest. Once completed, email a copy of your manifest to envirostore@dglgroup.com.

Contact us for a disposal quote or any other queries below:

(03) 9308 6636

**envirostore@dglgroup.com
43B Nathan Drive
Campbellfield VIC 3061
www.envirostore.com.au**



CONTENTS

Presidents Report	3
From the Editor	3
Moon Phases	5
DIY Lung	7
Behind the Scenes	9
North & Northwest Metro Regional PD	11
Generative AI for Laboratory Operations	15
Creating an Engaging Learning Environment	18

SUBMISSION DEADLINES

ISSUE 3: 30 AUGUST 2025

DISCLAIMER

The views expressed in LabLines are those of the authors and do not necessarily reflect the opinions of the LTAV Committee. The LTAV accepts no responsibility for the outcomes of experiments published in LabLines or for any issues that arise if those experiments are later carried out by others. Appropriate risk assessments and Safe Work Procedures must always be followed.

COPYRIGHT REMINDER

Articles submitted for publication must be original and not previously published elsewhere. If you are submitting an article that has been published before, or if your article includes any previously published material, you must include a signed release from the copyright holder.

The LTAV holds the copyright for all articles published in LabLines. Requests for permission to reuse material for non-commercial purposes should be made in writing and directed to the Editor at: lablines@ltav.org.au.

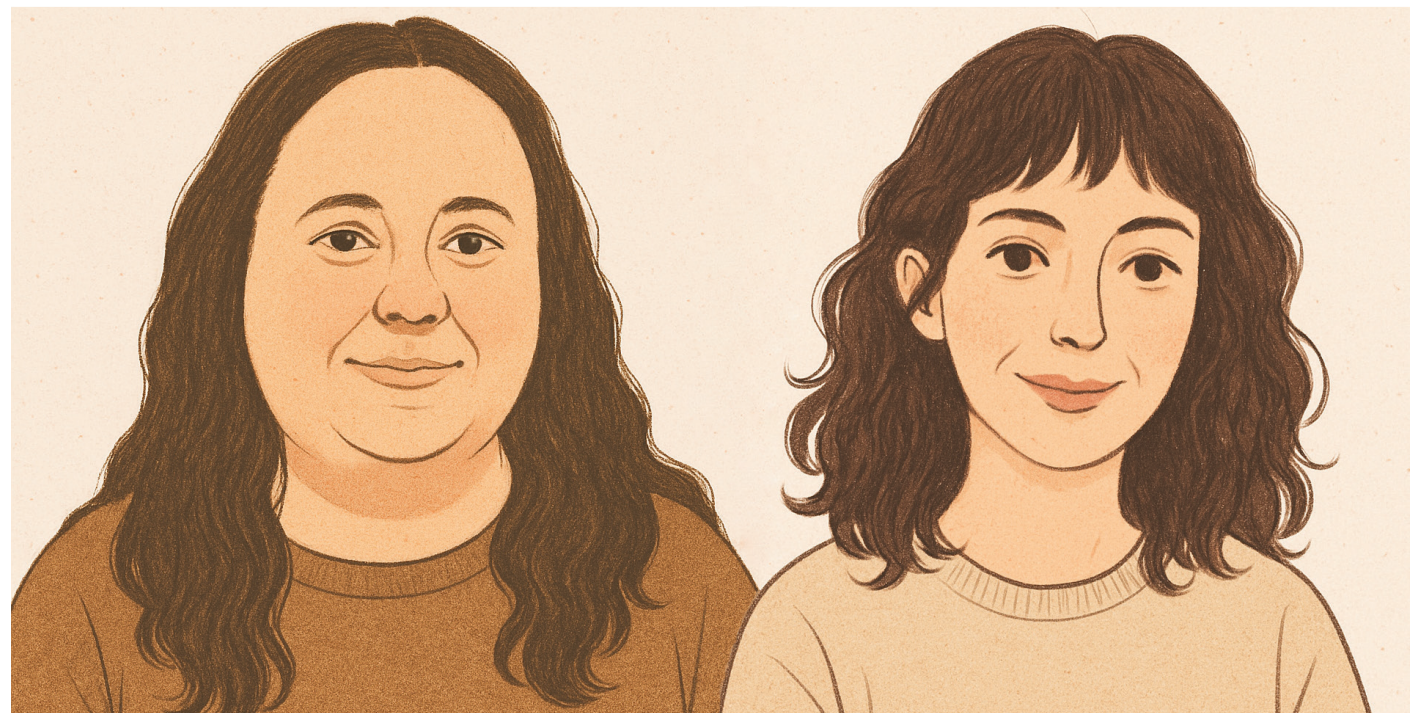


Image by Chat GPT

PRESIDENT'S REPORT

By Mary Jones

Hello everyone,

We're now halfway through the year. After a long Term 2, I hope you enjoyed a well-deserved break and are returning refreshed and ready for the new term.

LTAV hosted several regional PD events last term. If you're in the Kew, Otway or Ballarat areas, please consider becoming a regional representative. Our regional liaison officers and committee are very supportive, and it would be great to see every region represented.

LABCON preparations are going well, and we look forward to seeing you there. We've reviewed your feedback and are working to make this year's conference even better.

Science Week runs from 12–20 August, with the theme 'Decoding the Universe – Exploring the unknown with nature's hidden language.' Check out the teacher resource book and event listings at scienceweek.net.au.

Finally, a big thank you to everyone contributing to the list and to Lablines. Your input helps make our association great.

FROM THE EDITOR

By Sally Duplex

Dear readers,

Thank you for your ongoing support and patience. I hope this issue finds you happy, well, and perhaps even a little inspired.

In this edition, you'll find a collection of simple yet engaging practical activities that are sure to be a hit with junior science students. We've also gathered some fresh and creative ideas for classroom décor that blend science with style. A big shout-out to Effie Hallak and Paul Braithwaite for their wonderful contributions!

First-time contributor Kate Martin shares her top four cost-effective storage hacks to help streamline your lab, and LTAV President Mary Jones brings us highlights from the recent North and North West Metro Regional PD Day. Last but not least, Dr. Aneela Yasmin continues her thought-provoking series on generative AI in laboratory operations, with a particular focus on learning, professional development & well-being.

As always, if you have an idea, tip, or article you'd like to contribute to a future issue, please send it through to me at lablines@ltav.org.au - I'd love to hear from you!

Servicing School Science for over 50 years



Industrial Equipment & Control Pty. Ltd.
Design and Manufacture of Scientific Educational Apparatus



Purchase from your preferred dealer



PRINCIPLES and PRACTICE

Sorry, often my calendar appears fairly full and it's had to get a timely booking for me to visit to do your repairs, BUT...

A couple of other options are:

Send or drop off the items for workshop repair

OR

I may be able to send instructions on how to fix it yourself!

Email me or give me a call -

Email: harvey@principlespractice.com.au, Phone: 0459 768 392



MOON PHASES

FUN, EASY TO RUN EXERCISES

Submitted by Sally Duplex
Warrnambool College



Image by Anakin Fox

The Moon doesn't produce its own light, we see it because sunlight reflects off its surface. As the Moon orbits Earth, the side facing the Sun remains lit, but the portion visible from Earth changes. This changing view creates the different phases of the Moon.

Light & Shadow Moon Phases

Using a lamp to represent the Sun and a ball as the Moon, students can observe how the Moon's appearance changes depending on its position relative to Earth and the Sun.

Materials

- A bright lamp with no shade
- A polystyrene ball

Method

1. Place the lamp (Sun) on a table at eye level and switch it on.
2. Stand about 1.5 metres away from the lamp. You represent Earth.
3. Hold the ball (Moon) at arm's length and raise it to eye level.
4. With the room lights dimmed or off, slowly rotate on the spot, keeping the ball extended in front of you.
5. As you turn, observe how the light on the ball changes.

New Moon: The ball is between you and the lamp (you see the dark side).

First Quarter: The ball is to your right, half lit.

Full Moon: The lamp is behind you and the entire face of the ball is lit.

Last Quarter: The ball is to your left, half lit again.

Oreo Moon Phases

In this simple, hands-on activity, students will model the eight main phases of the Moon using Oreo cookies.

Materials

- 8 Oreo cookies
- Knife or spoon
- Paper plate
- Texters & pencils

Method

1. Carefully twist each Oreo to separate the top and bottom halves. Try to keep the cream on one side only.
2. Use a plastic knife or spoon to shape the cream to represent the following Moon phases:
 - New Moon:** no cream (use the plain cookie side)
 - Waxing Crescent:** a small sliver of cream on the right
 - First Quarter:** cream on the right half
 - Waxing Gibbous:** mostly covered, with a small dark edge on the left
 - Full Moon:** full cream surface
 - Waning Gibbous:** mostly covered, with a small dark edge on the right
 - Last Quarter:** cream on the left half
 - Waning Crescent:** a small sliver of cream on the left
3. Arrange the cookies in a circle to show the correct order of the Moon phases.
4. Complete your diagram by labelling each phase and drawing Earth in the centre.



DIY LUNG

INHALATION & EXHALATION

Submitted by Sally Dupleix
Warrnambool College

Background

Breathing is driven by changes in air pressure inside the chest cavity. The lungs don't move on their own, they rely on the diaphragm, a dome-shaped muscle beneath them. When the diaphragm contracts and moves down, chest volume increases and pressure drops, drawing air in (inhalation). When it relaxes and moves up, volume decreases and pressure rises, pushing air out (exhalation). This follows Boyle's Law, where pressure and volume are inversely related.

Aim

To create a model of a human lung and diaphragm which demonstrates the process of inhalation and exhalation through pressure changes in the thoracic cavity.

Materials

- 1 soft drink bottle with a whole through the lid
- 2 balloons
- 1 straw
- Plasticine
- 1 scissors

Method

1. Carefully cut the bottom off the soft drink bottle to create the chest cavity.
2. Insert a balloon into the neck of the bottle. Pull the balloons open end over the neck, so the balloon hangs inside like a deflated lung.
3. Screw on the bottle lid and insert your straw through the hole so that it extends into the bottle without touching or blocking the balloon. Use plasticine around the straw to create an airtight seal at the neck of the bottle.
4. Stretch the second balloon over the cut base of the bottle. This balloon represents the diaphragm. Make sure it's tight but flexible enough to be pulled and pushed.
5. Gently pull down on the 'diaphragm'. This increases the volume inside the bottle and lowers the internal air pressure, causing the 'lung' to inflate.
6. Push the 'diaphragm' back up to decrease the volume in the 'chest cavity' and raise the pressure, forcing air out of the 'lung' and simulating exhalation.

BEHIND THE SCENES

INNOVATIVE STORAGE SOLTIONS

Submitted by Kate Martin
Warrnambool College

High school science labs house a huge variety of materials, from chemicals and glassware to craft supplies and electronics. As lab techs, we’re tasked with keeping it all organised, accessible, and safe. With so much to manage, even small storage issues can quickly turn into daily frustrations. Over the years, I’ve found a few simple, low-cost hacks that make a big difference. These quick fixes help reduce mess, prevent tangles, and cut down on waste. Sometimes it’s the little things that make the biggest difference.

Dye-saster Averted

Sticky benches and wasted droppers? Tape a micro test tube to each food dye bottle to create a simple, mess-free dropper holder. It keeps everything tidy, prevents drips, and saves you from reaching for a new dropper every time.

Sort Out Your Slinkies

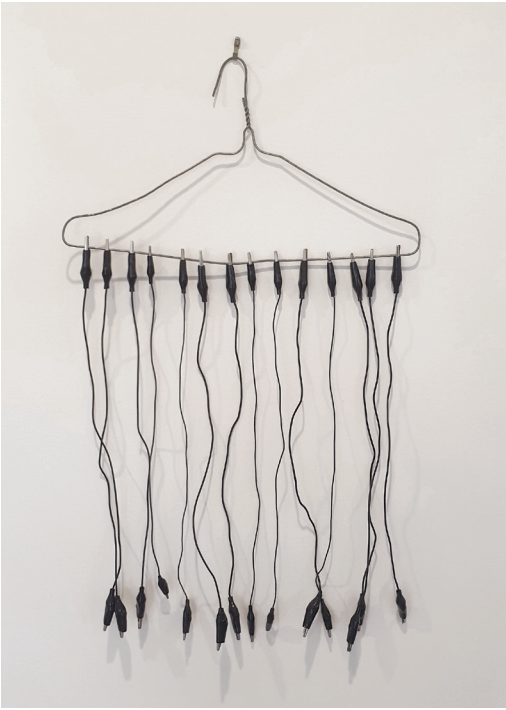
Tired of tangled coils? Ask your woodwork team to mount vertical dowel rods onto a wooden base. This easy fix keeps slinkies upright, organised, and always ready to roll.

Blu Tack Blues

Blu Tack can be a nightmare to clean up, especially from carpet. Pre-cutting small pieces for student use has drastically reduced waste, mess, and clean up time in our classrooms.

See You Later, Alligator

Tangled alligator leads slowing you down? Hang them on coat hangers for a tidy, space-efficient solution that’s easy to grab and perfect for trolley setups.



Images by Kate Martin

NORTH & NORTHWEST METRO REGIONAL PD

Submitted by Mary L. Jones
LTAV President
Keilor Downs College

Last term, we had the privilege of holding a full-day professional development event at Salesian College Sunbury on Friday, June 13. The college is situated on the grounds of the historic Rupertswood Mansion, which is owned by the Salesian Society.

The Society is an order of Catholic priests and brothers dedicated to the care and education of young people. There are around 17,000 members worldwide, and the Sunbury campus is home to 1,600 co-educational students from Years 7 to 12.

Although Alex, who was instrumental in securing the venue and shaping the day’s sessions, was unfortunately unable to attend due to the flu, we were warmly welcomed by Alison, who stepped in to ensure everything ran smoothly. We are incredibly grateful to Alison for her professionalism and support. She did a wonderful job!

Our day began with a tour of the college’s STEM Centre, which was both modern and inspiring. The facility is equipped with laser cutters, 3D printers, and a dedicated Cricut workstation, where

students create everything from mugs and stickers to tote bags, candles, and more. It was wonderful to see the students’ work firsthand and to witness the innovative ways they are using this technology in their learning.

We were then joined by Amanda Brick from Modern Teaching Aids, who led a hands-on 3D printing session tailored to use in school science labs. She shared ideas for saving money and fabricating custom equipment and teaching aids. This was followed by a tour of the wider campus and a delicious lunch.

The day concluded with a practical soap-making workshop and an introduction to the college’s STELLAR equipment, a fantastic resource that impressed all in attendance.

Andy and I are incredibly thankful for the enthusiasm and support of all our members. A heartfelt thank you to Alex and Alison for hosting us, to Lana for her contribution to morning tea, and to everyone who generously shared their photos from the event and contributed to this article.



The iconic Rupertswood Mansion.

Image by Nguyen-Milgate



Incredible work created by students using the 3D printing facilities.

Image by Helen De Losa



Soaps made by Alex's students.

Image by Alex Hernandez

GENERATIVE AI FOR LABORATORY OPERATIONS

ENHANCING LEARNING, PROFESSIONAL DEVELOPMENT & WELL-BEING

Submitted by Dr. Aneela Yasmin
Lab Manager & STEM Specialist
East Preston Islamic College

While our previous articles explored AI’s role in lab operations and classroom support, this instalment addresses a critical but underserved need: empowering science technicians themselves.

K-12 science technicians are the unsung heroes of STEM education, meticulously preparing experiments, enforcing safety protocols, and enabling hands-on learning. Yet these professionals frequently lack dedicated time for their own skill development, face isolating work conditions with limited peer support and manage escalating administrative burdens without commensurate resources.

With this in mind, generative AI (Gen AI) emerges as a transformative solution, offering enhanced continuous learning possibilities, sustainable well-being support and boosting professional development.

AI-Powered Continuous Learning

Generative AI serves as an indispensable real-time assistant for science technicians, enabling:

Material Substitutions: When standard materials are unavailable, AI can recommend scientifically valid alternatives while maintaining educational outcomes. Example prompt “Our school lacks nichrome wire for a circuit demonstration. Suggest safe, locally available alternatives that can achieve similar resistivity and heating effects under 12V DC.”

Compliance Checks: AI provides instant compliance checks against jurisdictional regulations and risk assessments. Example prompt “Analyse the safety considerations for a cobalt chloride equilibrium demonstration for Year 11 chemistry, including Victorian DET chemical restrictions, PPE requirements, disposal protocols, cite relevant SDS references and education department guidelines.”

Detective Support: AI functions as a diagnostic partner for unexpected results through systematic failure analysis, equipment behaviour explanations and correction protocols. Example prompt “Diagnose potential failure points in our strawberry DNA extraction protocol where the precipitate failed to form. Consider: ethanol concentration (70% vs 95%) and buffer pH levels.”

AI Powered Professional Development

Generative AI can serve as a 24/7 career mentor, offering personalized guidance to bridge skill gaps, explore new specializations, and refine technical communication.

PD Plans: AI doesn’t just recommend generic courses, it creates fully customized professional development plans based on your specific role (whether you’re a K-12 or university lab technician), career aspirations (like transitioning into lab management or STEM curriculum development), and practical constraints (including budget, time availability, and institutional policies). For example, “I’m a high school lab technician in Victoria with 5 years of experience. Design a comprehensive 12-month upskilling plan



Image by Cyano66

to help me transition into STEM outreach coordination, including free VIT-recognized online courses, key networking events in Melbourne, and relevant volunteer opportunities to build experience—with estimated weekly time commitments for each component.”

Skill Gap Analysis: AI can perform targeted skill gap analysis when technicians provide their current certifications, daily responsibilities, and career aspirations. The system then compares this data against Victoria’s DET Laboratory Technician Competency Framework, identifying precise skill deficiencies and generating a customized development plan. For example: “Analyse my qualifications and daily tasks against the Victorian DET’s ‘Senior Science Technician’ standards. Recommend prioritized training modules, including VIT-approved courses and internal upskilling pathways, with estimated completion timelines.” This approach enables science technicians to strategically address competency gaps while aligning with state education requirements.

Context-Aware Certification Support: AI simplifies professional certification by breaking down complex requirements into clear, actionable steps tailored to your role and location. It tracks renewal deadlines, matches credentials to salary benchmarks, and provides school-specific guidance. For example: “Map all NATA certification requirements for our Victorian secondary school’s new biotech lab, including estimated timelines and costs, while highlighting which qualifications align with DET pay scale advancements.” This targeted support helps technicians make informed decisions about which certifications will deliver the greatest career impact within their education system.

Community of Practice Builder: AI helps combat professional isolation by identifying relevant communities (e.g., LABNET, ISTA) and facilitating meaningful engagement. It can draft outreach scripts, such as “Help me craft a LinkedIn post requesting case studies on fume hood maintenance and summarize key insights from global technician forums.”

AI powered Emotional Well-Being

The demanding nature of school laboratory work - with its constant multitasking between experiment preparation, safety oversight, and teacher coordination - makes technicians particularly vulnerable to stress and burnout.

Automating to Alleviate Burnout: Gen AI serves as a wellbeing support tool by automating routine tasks that consume mental energy as we discussed in our last articles. These small efficiencies collectively reduce cognitive overload, preserving emotional reserves for more meaningful interactions.

24/7 Wellbeing Coach: Beyond logistics, AI acts as an always-available wellbeing coach. It can deliver tailored stress-management tools like: “Generate a 5-minute grounding exercise using lab metaphors (e.g., ‘imagine centrifuging your worries’) for use after hectic periods”, or facilitate reflective practice through prompts such as “Help me analyse three recent stressful incidents to identify recurring triggers and coping strategies.”

Preserving Professional Relationships: It can also enhance professional relationships that buffer against workplace stress. When tensions arise – whether regarding equipment sharing or scheduling conflicts – AI helps craft diplomatic communications that maintain collegiality. A prompt like “Draft a constructive email reminding faculty about loan protocol that emphasizes our shared goal of student safety” can transform potential friction into opportunities for team alignment.

Generative AI elevates K-12 lab operations beyond automation, it enhances learning, professional growth, and well-being. By adopting AI tools, science technicians can transition from task managers to empowered educators, fostering inspiring lab environments.

In our final instalment, we’ll examine the ethical and responsible implementation of AI in school laboratory settings, ensuring these powerful tools are used thoughtfully to benefit all members of the educational community.

CREATING AN ENGAGING
LEARNING ENVIRONMENT

READER SUBMISSIONS



Image by Effie Hallak

Glassware Planters

Bring a touch of greenery into the classroom and give old glassware a second life as quirky, creative planters. It’s a simple way to brighten the space and spark conversations about sustainability.



Image by Sally Duplex

Herbarium Specimens

Combine science and style with framed herbarium specimens. Beautiful, pressed plant samples that bring a touch of botanical charm into any learning space. These displays celebrate both nature and scientific observation, sparking curiosity in the classroom.

Spiny Leaf Insects

Spiny leaf insects make surprisingly soothing classroom companions. Some students enjoy letting them crawl gently on their arms while they work, their calming presence encouraging focus and a quiet connection with nature.



Image by Paul Braithwaite

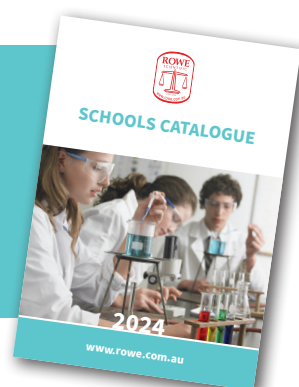
HELP YOUR STUDENTS SUCCEED IN THE LAB

Rowe Scientific - for all the school laboratory supply needs that you can envision.

Discover more at www.rowe.com.au/rowe/Brands.htm



Download our **NEW**
2024 Schools
Catalogue.



Online, by phone or face to face, we give you the choice.
INSTRUMENTS - CONSUMABLES - CHEMICALS - SERVICE & REPAIRS
A 100% Australian owned company, supplying scientific laboratories since 1987.



Discover more at: **www.rowe.com.au**

South Australia & NT
Ph: (08) 8186 0523
rowesa@rowe.com.au

Queensland
Ph: (07) 3376 9411
roweqld@rowe.com.au

Victoria & Tasmania
Ph: (03) 9701 7077
rowevic@rowe.com.au

New South Wales
Ph: (02) 9603 1205
rowensw@rowe.com.au

Western Australia
Ph: (08) 9302 1911
rowewa@rowe.com.au



YOUR LTAV REPRESENTATIVES

BALLARAT REGION

Vacant

DANDENONG REGION

Leonie Leishman

Cranbourne East Secondary College
50 Stately Drive, Cranbourne East, 3977
(03) 5990 0200
leonie.leishman@education.vic.gov.au

EASTERN/MAROONDAH REGION

Simone Martyn

Bayswater Secondary College
14 Orchard Road, Bayswater, 3153
(03) 8720 7555
simone.martyn@education.vic.gov.au

GEELONG REGION

Dale Carroll

The Geelong College
20 Talbot Street, Geelong, 3220
(03) 5278 9999
dale.carroll@geelongcollege.vic.edu.au

GIPPSLAND REGION

Debby Butler

Lavalla Catholic College (Kildare Campus)
33-39 Kosciuszko Street, Traralgon, 3844
(03) 5174 8111
butldeb1@lavalla.vic.edu.au

HUME REGION

Claire Stock

Myrtleford P-12 College
8-36 Mummery Rd, Myrtleford, 3737
(03) 5752 1174
claire.stock@education.vic.gov.au

KEW REGION

Vacant

LODDON/CAMPASPE/ MALLEE REGION

Jenny Cain

Moama Anglican Grammar School
2 Kirchofer Street, Moama, 2731
(03) 5480 5900
jcain@moamagrammar.nsw.edu.au

MORNINGTON REGION

Evan Salanoa

Padua College
62 Oakbank Rd Mornington, 3931
(03) 5976 0100
esalanoa@padua.vic.edu.au

NILLUMBIK/BANYULE REGION

Daniela Tosevska

Preston High School
2-16 Cooma St, Preston VIC 3072
(03) 9055 8400
daniela.tosevska@education.vic.gov.au

NORTH METRO REGION & NORTH/ WEST METRO REGION

Mary L. Jones

Keilor Downs College
100-110 Odessa Avenue, Keilor Downs, 3038
(03) 9365 8000
mary.jones@education.vic.gov.au

Andy Baful

Copperfield College
70 Goldsmith Avenue, Delahey, 3037
(03) 9307 5558
andy.baful@education.vic.gov.au

OTWAY REGION

Vacant

SOUTH YARRA/MOORABBIN

Vacant

SUNRAYSIA REGION

Samantha (Sam) Armstrong

Red Cliffs Secondary College
55 Fitzroy Ave, Red Cliffs, 3496
(03) 5024 1522
samantha.armstrong@education.vic.gov.au

WARRNAMBOOL REGION

Leanne Baxter

0437 746 986
austybaxta62@gmail.com

WIMMERA/HORSHAM

Jodie Pignataro

Horsham College
310 Baillie St, Horsham, 3400
(03) 5381 7148
jodie.pignataro@education.vic.gov.au

**LABORATORY TECHNICIANS'
ASSOCIATION OF VICTORIA
2025 COMMITTEE**

**PRESIDENT
MARY L JONES**

Keilor Downs College - Keilor Downs
☎ (03) 9365 8000
0412 950 330
✉ president@ltav.org.au
info@ltav.org.au

**VICE PRESIDENT & SETA REPRESENTATIVE
MARCIA ROGERSON**

Rivercrest Christian College - Clyde North
☎ (03) 9703 9777
✉ marcia.rogerson@rivercrest.vic.edu.au

**SECRETARY
ROSY MULLAPUDI**

Mazenod College - Mulgrave
☎ (03) 9560 0911
✉ secretary@ltav.org.au

**TREASURER
LYNETTE BAKER**

Assumption College - Kilmore
☎ (03) 5782 1422
✉ lynette.Baker@assumption.vic.edu.au

**NATIONAL NETWORKS COORDINATOR
DALE CARROLL**

☎ 0415 283 742
✉ dalecarroll3@gmail.com

**POLICY OFFICER
GEOFF GLEADALL**

☎ 0438 638 859
✉ geoffgleadall@msn.com.au

**MEMBERSHIP OFFICER
SIMONE MARTYN**

Bayswater Secondary College - Bayswater
☎ (03) 8720 7555
✉ membership@ltav.org.au

**SAFETY INFORMATION OFFICER
DR. RADHIKA IYER**

Mallauna College - Mitcham
☎ (03) 9874 3422
✉ safety@ltav.org.au

**LABLINES EDITOR
SALLY DUPEIX**

Warrnambool College - Warrnambool
☎ 0448 917 842
✉ lablines@ltav.org.au

**LABLINES DISTRIBUTION OFFICER
DANIELLE GRANT-MAY**

Mount Lilydale Mercy College - Lilydale
☎ (03) 9735 4022
✉ dgrant-may@mlmc.vic.edu.au

**WEBSITE ADMINISTRATOR & RELIEVERS LIST
MAEVE WILD**

Mount Lilydale Mercy College - Lilydale
☎ (03) 9735 4022
✉ relievers-list@ltav.org.au

**LISTSERV MODERATOR
KELLE BALLARD**

Emerald Secondary College - Emerald
☎ (03) 5968 5388
✉ kellee.ballard@education.vic.gov.au

**METRO LIAISON OFFICER
DEBORAH SUN**

Waverley Christian College - Narre Warren South
☎ (03) 8765 7762
✉ sun.d@wcc.vic.edu.au

**COUNTRY LIAISON OFFICER
JODIE PIGNATARO**

Horsham College - Horsham
☎ (03) 5381 7148
✉ jodie.pignataro@education.vic.gov.au

**PUBLICATIONS OFFICER
NAOMI PETERS**

Werribee Secondary College - Werribee
☎ (03) 9741 1822
✉ naomi.peters@education.vic.gov.au

**GENERAL COMMITTEE
GLENN CONDON**

Westbourne Grammar School - Truganina
☎ (03) 9731 9444
✉ condog@westbourne.vic.edu.au

**GENERAL COMMITTEE
JENNY EMERY**

Koo Wee Rup Secondary College - Koo Wee Rup
☎ (03) 5997 1444
✉ jennifer.emery@education.vic.gov.au