

## Science Teachers' Association of Victoria Inc

### STAV Annual Report

1st July 2018 – 30th June 2019

#### President's Overview

##### Vision

Our vision for professional learning in science for all Victorian schools:

*"Is to develop a science community growing together through collaboration, professional learning supported by conferences, workshops and events, partnerships with industry and the wider community through STEM and other innovations."*

##### Mission

Our Mission is:

*"To represent and advance the collective voice of science educators that will shape and influence policy in all aspects relating to science education. We are committed to offering a range of resources and services that will promote quality science teaching and learning. We provide opportunities for all students to become inspired, engaged and excel in activities that promote scientific literacy including: Science Talent Search, Science drama and BHP Billiton National Science and Engineering Awards."*

STAV is a non-profit organisation with its core business being membership and supporting Science Victoria, an entity established for the purpose of promoting science and science education. Science Victoria manages the following STAV activities: Conferences/Professional Learning, Science Talent Search and Science Drama, publications and other resources from STAV Publishing.

STAV is governed by a voluntary council which includes the following office bearers; President (Soula Bennett), Vice President and Treasurer (Joanna Alexander), Vice President (Alexandra Abela) and Secretary (Michael Rosenbrock). Council meets at least 4 times throughout the year as well as conducting electronic communication and is supported by a paid Secretariat

STAV is a member of the Australian Science Teachers Association (ASTA), a federation of national science teacher associations. All activities conducted throughout the financial year are aligned with the 2016 – 2020 STAV Strategic Plan.

STAV draws its membership from educators across the Primary and Secondary sectors, Pre-Service teachers, researchers, retired teachers and individuals with an interest in science education.

The 2019 STAV Councillors have worked as a cohesive team representing the collective voice of science educators across the state and nationally at ASTA Council, round table discussions, steering committees, council meetings and conferences. STAV Council membership is as follows: Soula Bennett, President (Quantum Victoria), Joanna Alexander, Vice President and Treasurer (Blackburn High School), Alexandra Abela, Vice President & President Elect (Penleigh and Essendon Grammar School), Michael Rosenbrock, Regional Network Leader (Wodonga Senior Secondary College) Yuvadee Patchon, Lab Tech (Quantum Victoria), Georgia Lumb (Canterbury Girls' Secondary College) and Fiona Trapani, Lab Talk Editor (Mercy College).

## **STAV Publications**

Quarterly publications of the STAV journals Lab talk and Let's Find Out (LFO) occurred during the reported period. I would like to acknowledge the Editing team for each journal Fiona Trapani (Lab talk) and Peter Hope (LFO).

Contact was published monthly and informed STAV members of professional learning opportunities and updates on conferences, workshops, events and resources.

Semester 1 and 2 Trial Exams were purchased by schools to be used by teachers in preparation of their students for the VCE Science Exams. Trial Exams were issued on time to all schools purchasing the resource.

## **Conferences and Workshops**

STAV members continue to have access to the largest number of professional learning opportunities offered by any Science Teachers' Association in the country. The following conferences were hosted during the reported period:

**Science Leaders' Conference** at Quantum Victoria, Friday 27<sup>th</sup> July 2018 attracting 45 delegates, presenters and exhibitors. The conference focus was on Challenging STEM Stereotypes and conscious and unconscious biases. Keynotes were presented by Prof Jan Van Driel (University of Melbourne) and Prof John Loughran (Monash University).

**STEM conference – Transitioning into the 4<sup>th</sup> Industrial Revolution** at Quantum Victoria, Friday 31<sup>st</sup> August 2018 attracting 75 delegates, presenters and exhibitors. The keynote was delivered by Prof Bronwyn Fox (Swinburne University).

**STAVCON 2018 – Game Changes and Change Makers** Friday 30<sup>th</sup> November at La Trobe University, attracting over 400 delegates, presenters and exhibitors. The keynote was delivered by Prof Julian Savulescu (Oxford University).

**VCE Biology** Conference Tuesday 12<sup>th</sup> February 2019, La Trobe University attracting over 350 delegates, presenters and exhibitors to the conference. The keynote was delivered by Dr Mark Hullet and Marc Kvensakul.

**VCE Chemistry** Conference Wednesday 13<sup>th</sup> February 2019 La Trobe University attracting over 460 delegates, presenters and exhibitors.

**VCE Physics** Conference Friday 15<sup>th</sup> February 2019 La Trobe University, attracting over 340 delegates, presenters and exhibitors to the conference.

**VCE Psychology** did not run in 2019 and planning has commenced for the 2019 workshop.

**Lab Tech – Supporting STEM in the Science Classroom** Friday 7<sup>th</sup> June 2019 Quantum Victoria, attracted over 120 delegates, presenters and exhibitors.

**CONASTA 67** was hosted in Sydney July 8-11 2018 at the University of Sydney and attracted delegates from across Australia. The program provided a diverse group of workshops and keynote speakers around the theme – 'Spotlight on Our Future'.

### **Physics Workshops**

The two Physics Masterclasses delivered by Victor Sam, Leading Teacher and Science Coordinator Maribyrnong College, in semester 2 2019 and will be reported in the next Annual Report.

### **Primary Workshops**

Primary workshops will be delivered by Cressida Byrne, Learning Specialist Mt Ridley College in semester 2 2019 and will be reported in the next Annual Report.

### **VCAA**

STAV has worked closely with Maria James and Erin Wilson informing STAV members of the VCAA Science Professional Learning sessions, F-10 Science Curriculum monitoring, Science Webinars for Primary teachers (designausarus), VCE Science Surveys and Secondary teachers (data analysis and graphing as important future sill sets). STAV has entered into the planning of the 2020 VCE Psychology workshops with Erin and continues to engage in dialogue with the VCAA to ensure that STAV members have access to the review of and updates on the review of the VCE Science Study Designs and the Victorian Curriculum through VCAA meetings and STAV activities - STAVCON and the VCE Conferences and workshops.

### **Pre-Service Teachers**

Presentations to Pre-Service teachers continue to inform them of the benefits of joining STAV as a graduate teacher, including having access to a community and a collective voice that supports and influences the teaching and learning of science education both at a state and national level.

### **ASTA**

ASTA has moved into a new governance model and will now have one representative as the Board Member from each state and territory Science Teachers' Association (STA). The new structure includes a delegate from each STA to attend the ASTA AGM on the second day of the Board Meeting. STAV's representatives on the ASTA Board and as a delegate are; Alex Abela and Soula Bennett respectively. Victorian science teachers can access ASTA's national science teachers' conference, CONASTA and also have access to the annual STEM X conference held in January each year. Victoria hosted the ASTA STEM X Regional Conference in Wangaratta in December 2018. The ASTA CEO had submitted his resignation in June 2019 and the ASTA Executive supported by the Board commenced the process for recruiting the new CEO. The STAV Membership contributes to the ASTA presence in Canberra via the quarterly Capitation fee, which constitutes approximately half of the STAV membership fee.

### **Social Media**

STAV Facebook and Twitter accounts have continued to promote events and share information to STAV Members and the wider community.

### **DET**

STAV commenced the implementation of the first of many activities funded by the DET grant addressing 'Challenging stereotypes in STEM – professional learning for Victorian science, STEM and careers teachers'. In addition to STAVCON, the VCE Conferences, the Lab Tech, Science Leaders and STEM Conferences, STAV has commenced planning to develop and deliver two Physics Masterclasses in semester 2 2019 and two Primary Workshops, complementing the suite of professional learning

activities aligned with current STAV activities to be delivered to teachers throughout Victoria. The conferences, workshops and masterclasses will also focus on challenging stereotypes, conscious and unconscious biases in Science and STEM.

### Science Talent Search (STS)

The STS Management and Committee and the STS Coordinator Janice Tseng have continued to support the STAV Science Talent Search (STS), attracting interest in all categories. The theme was **'Destination Moon: more missions, more science'**.

Below is a table summarising the overall number of student participation:

<b>Overall numbers</b>	
Total number of schools entering the competition	173
Total number of <u>students</u> in entire competition	3429
Total number of <u>entries</u> in entire competition	2347

Below is the student participation in the two categories that feed into the BHP Billiton Science and Engineering National Awards:

Experimental Research	Entries received 366 (An increase of 1 entry from the previous year)
	Total Student Participation 454 (297 Female, 155 Male & 2 Indeterminate/intersex) An increase of 9 students overall from the previous year
Inventions/Engineering	Entries received 69 (A decrease of 2 entries from the previous year)
	Total Student Participation 95 (24 Female and 71 Male) An increase of 4 students participating from the previous year

### CSIRO/STAV Workshops – Moving Toward Open Inquiry

STAV partnered with the CSIRO in the delivery of 3 workshops held in Melbourne (STAV House), Traralgon and Rainbow Victoria. The workshops aimed to develop teachers' awareness of the Awards pathway (including CREST Awards, the Science Teachers' Association of Victoria Science Talent Search, and the BHP Foundation Science and Engineering Awards) and improve their understandings, skills, and strategies for facilitating the scientific inquiries of their students. It is hoped that this will increase both the number and quality of projects submitted to the Science Talent Search, and hence the BHP Foundation Science and Engineering Awards.

Frameworks explored included the 5Es framework for structuring inquiry teaching and learning, a set of strategies for stimulating, refining, and selecting appropriate inquiry questions, the CER frame for scaffolding students' construction of scientific explanations, and the 5Rs framework for reflecting on teaching and learning experiences. In the Melbourne workshop, strategies for facilitating technology and engineering inquiries were also presented, including the Engineering and Design Process and the Appropriate Technologies framework.

### **National Science Week**

A total of 180 schools across Victoria applied for the National Science Week grants and 10 schools were successful in receiving grants to support their initiative. The theme was 'Game Changes and Change Makers'.

### **Financial Management**

STAV has registered a modest deficit of \$18,885.00 during the last financial year. STAV Council is looking at strategies that will increase our revenue, including publishing our journals online. Work has commenced with the purchase of software to make this happen in 2020.

### **Partnerships and Collaborations**

STAV continues to contribute to state and national initiatives and collaborates with the following partners:

Australian Science Teachers' Association (ASTA)

Australian Academy of Science

Australia's Chief Scientist

Australian Catholic University

Australian Institute for Teaching and School Leadership (AITSL)

Australian Technological Sciences and Engineering

Cisco

CSIRO/BHP Billiton (Student and Teacher Awards)

Deakin University

Engineering Australia

La Trobe University

Monash University

LifeJourney (STEM Pathways)

Optus

Quantum Victoria

Rowe Scientific (BHP Billiton/CSIRO Student sponsorship)

RMIT

Swinburne University

Victorian Curriculum Assessment Authority (VCAA)

Victorian Department of Education and Training

University of Melbourne

**Thank you**

I would like to sincerely thank all STAV members, my colleagues who served with me on STAV Council, the STAV staff and our partners and collaborators whose support I welcomed and valued in my role as STAV President over the past 12 years. It has been an honour and a privilege to represent the collective voice of science educators across Victoria both at a state, national and international level.

Soula Bennett

STAV President