

## **Science Teachers' Association of Victoria Inc**

### **STAV Annual Report**

1st July 2016 – 30th June 2017

#### **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 (Joanna Alexander), Vice President (Alexandra Abela) Treasurer (Joanna Alexander) and Secretary (Michael Rosenbrock). Council meets at least 4 times throughout the year as well as conducting electronic communication.

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 Victorian Curriculum, Unit3/4 Science Study Designs and the new VCE Psychology Study Design were implemented in 2017.

VCAA updates were provided throughout the year via our conferences and workshops.

The 2017 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 (Quantum Victoria)

Joanna Alexander (Blackburn High School), Alexandra Abela (Penleigh and Essendon Grammar School), Michael Rosenbrock (Wodonga Senior Secondary College) Yuvadee Patchon (Lab Tech Quantum Victoria), Jacinta Greer (Ryton Girl's School).

I would like to acknowledge the work and effort undertaken by STAV Council throughout the reported period along with the STAV Secretariat led by Annette McKenna. Also, thank you to Suzanne O'Shannessy, Science Victoria.

STAV is a not for profit member association and is governed by a Council and is supported by the paid STAV staff.

### **STAV Publications**

Quarterly publication of the STAV journals **Lab Talk and Let's Find Out** occurred during the reported period.

**Contact** was published each month informing STAV members of professional learning opportunities and updates on conferences, workshops, events and resources.

The **Trial Exams** continue to be a valuable resource for VCE Science students. Trial Exams were issued on time to all schools purchasing the resource. We have continued to offer both a mid-year and end of year exam.

The **Science Coordinator's and Beginning Teacher's Handbooks** have been published.

### **Conferences & 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:

**STAV Science Leaders' Conference** Friday 22<sup>nd</sup> July 2016, Quantum Victoria, Keynote Dr Alan Duffy, Research Fellow Swinburne University of Technology, **'Gravitational Waves Down Under'**, 51 registered delegates. Overwhelmingly positive feedback. This conference runs biennially.

**STAVCON** Friday 25<sup>th</sup> November La Trobe University, Keynote Prof Roger Lumley, Head, Department of Engineering La Trobe University – **'Materials Engineering: At the Intersection of Art, Science and Industry'**, 235 delegates. Feedback was positive. We will be reviewing the existing format of STAVCON with the aim of providing a more contemporary program.

The **VCE Conferences** were held on consecutive days at La Trobe University. This was welcomed by the exhibitors with many booking a space across all three days. A change in the parking arrangements delayed delegates arriving to the Union Hall. The parking concerns have been addressed to ensure the same issues do not arise.

**VCE Chemistry** Tuesday 14<sup>th</sup> February, **Keynote Speaker 1: Professor Tina Overton**, Associate Head (Education), Chair, Executive Council, Monash Education Academy, School of Chemistry, **'Problem Solving - Is it all the same? Keynote Speaker 2 Professor Sandra Kentish**, Head of the Department of Chemical and Biomolecular Engineering, The University of Melbourne, **'Careers for Students in Chemical Engineering'**. 440 delegates attended the conference.

**VCE Biology** Wednesday 15<sup>th</sup> February, **Keynote: Professor Andy Hill**, Biochemistry and Genetics, La Trobe Institute of Molecular Science (LIMS), La Trobe University **'Diseases of the ageing brain – when proteins go wrong!'** 260 delegates attended the conference.

**VCE Physics** 16<sup>th</sup> February **Keynote 1:** Brian McKittrick *'The WHY and HOW of student practical investigation'* was ill and was replaced by Dan O'Keefe. **Keynote 2: Dr Russell Anderson**, Quantum Physicist, Physics and Astronomy, Monash University *'Uncertain principles: Is the Heisenberg Principle really about uncertainty?'* Over 300 delegates attended the conference.

**VCE Psychology Workshop** April 26<sup>th</sup> Quantum Victoria, Keynote Chief Examiner, Dr Meredith McKague, Maria James VCAA delivered a presentation on Sample Exam Questions followed by a Q&A session. 36 delegates attended the workshop. The feedback was overwhelmingly positive and we will look at running a similar workshop in 2018.

The **Lab Tech Conference** Friday 9<sup>th</sup> June Quantum Victoria, Keynote 2016 Tall Poppy Award Recipient and Assoc Professor & ARC Future Fellow Brian Abbey, La Trobe University, *'Exploding molecules! – How 'diffraction before destruction' is helping us to create molecular movies'*, 94 registered delegates. This conference continues to receive positive feedback from our Lab Tech colleagues and has also attracted science teachers.

**CONASTA 65 'Superheroes of science - unmask your potential'** was hosted in Brisbane at Somerville House, attracting delegates from across Australia. The robust program provide a diverse group of workshops and keynote speakers.

### Physics Workshops

Dr Christina Hart delivered three **Physics workshops**; 'Newton's Laws of Motion' and 'Modelling Electricity' (with one repeated) for Primary and Secondary teachers at STAV House and has continued to receive positive feedback.

### Primary Workshops

Helen Silvester delivered four **Primary Science/STEM Workshops** including 'Teaching Inquiry in a primary classroom', 'Incorporating STEM into a primary classroom' and 'Misconceptions in Science'. Workshops were delivered at STAV House which were fully subscribed with very positive feedback.

### STAV STEM Study Tour

Planning for the inaugural STAV STEM Study Tour in partnership with WorldStrides commenced in February 2017 and has resulted with 22 confirmed participants. The purpose of the professional learning experience (29<sup>th</sup> December 2017 – 19<sup>th</sup> January 2018) is three-fold: to celebrate the human endeavour of STEM throughout the ages, to establish a collegiate network and to celebrate the establishment of the Science Teachers' Association of Victoria 75 years ago.

#### Itinerary includes:

- **London:** Royal Society, Science Gallery, Royal Observatory & Museums - Faraday, Natural History, National, King's College, Guy's Medieval Operating Theatre
- **Cambridge:** University Departments - Earth Sciences, Materials Science, Engineering, Applied & Theoretical Physics, History & Philosophy of Science, The Eagle Bar
- **Bletchley Park:** Tour of facility including the German Enigma Machine
- **Paris:** European Space Agency, Pasteur Museum, Science & Industry Museum
- **Geneva:** Tour of CERN, Exhibition & Passport to the Big Bang

- **Prague: Mendel University & Museum & Medieval Astronomical Clock**

## **Curriculum**

### **VCAA**

Updates on the new VCE Study Designs along with the new Victorian Curriculum were provided to all delegates attending STAVCON and the VCE Conferences and workshops. Teachers had access to information via online sessions, face-to-face sessions and at the STAV Conferences.

### **Pre-Service Teachers**

We continue to engage with Pre-Service teachers and 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**

STAV has representation on ASTA Council with the representatives being the President and one of the Vice Presidents. The STAV representatives have raised the importance of ASTA having a prominent national presence to ensure representation in important initiatives such as the Australian Curriculum, STEM in schools and other projects funded by the Federal Government in which Victorian teachers can access. STAV representatives participated in two face-to-face Council Meetings (November and July) and 4 teleconferences throughout the year.

### **Social Media**

STAV Facebook and Twitter accounts have continued to promote events and share information to STAV Members and the wider community. We thank the continued diligence of our Social Media Liaison Officer, Carlie Alexander who has facilitated this communication with members.

### **DET**

STAV continues its dialogue with the DET representatives in seeking support for Professional Learning of Science teachers across the state along with the student extension initiative Science Talent Search.

### **Science Talent Search**

The STS Management and Committee along with Janice Teng have continued to support the STAV Science Talent Search (STS), attracting interest in all categories. In 2016 we had 3,089 student participants from 153 schools. The students, their teachers and families celebrated their achievements during Exhibition Day on 24<sup>th</sup> October at La Trobe University. Victorian students entering the Investigations and Inventions categories had access to the National BHP Billiton Science and Engineering Awards. We had two entrants in the National BHP Billiton Engineering Awards with Justin Mitchell from St Kevin's coming 1<sup>st</sup> with his project Synth-etic: the world's first 'hood-wind' instrument and Dylan Sanusi- Goh coming 3<sup>rd</sup> with his project, 'ThermaQuad'. The STAV teacher finalist for the BHP Billiton Teacher Awards was Dylan Thomas from Clifton Hill Primary School.

### **Science Drama**

The STAV Science Drama Awards did not run in 2017.

**National Science Week**

Schools continued to receive financial support to run programs during National Science Week in August. The theme was *'Drones, Droids and Robots'*.

**Financial Management**

STAV has registered a modest deficit of \$7,738.00 during the last financial year.

**Partnerships and Collaborations**

STAV continues to maintain a presence both at the state and national arenas and continues its work with the following partners:

Australian Science Teachers' Association (ASTA)

Australian Academy of Science

Australia's Chief Scientist

Australian Institute for Teaching and School Leadership (AITSL)

CSIRO/BHP Billiton (Student and Teacher Awards)

Engineering Australia

LifeJourney (STEM Pathways)

La Trobe University (Cyber Security Initiatives)

Victorian Curriculum Assessment Authority (VCAA)

Victorian Universities, Deans of Science, Engineering, Education

**Soula Bennett**

**STAV President**