



STAV 2020 - 2021 Annual Report

President's Report

Science Teachers' Association of Victoria Inc

ABN 59 004 145 329

STAV Annual Report

1 July 2020 – 30 June 2021

STAV's Vision

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

STAV's Mission

"To represent and advance the collective voice of science educators and to shape and influence policy in all aspects of science education. STAV is committed to offering a range of resources and services that will promote quality science teaching and learning. STAV provides opportunities for all students to become inspired, engaged and excel in activities that promote scientific literacy including: Science Talent Search, Science Drama and the BHP Foundation Science and Engineering Awards."

The Science Teachers' Association of Victoria Inc. (STAV) is an independent, not-for-profit organisation, governed by a council of elected voluntary members. The membership of STAV comprises of both primary and secondary teachers of science, tertiary science educators, laboratory technicians and any person with an interest in science and/or science education.

STAV provides leadership, support, services, programs and resources for all levels of science education. STAV represents the collective voice of all teachers of science in matters relating to the teaching of science in Victoria, and through ASTA (the Australian Science Teachers Association), it represents these teachers at a national level. Teacher membership spans state, catholic and independent school systems. The primary function of STAV is to provide useful and accessible services to members. STAV also has a wider interest in promoting the interests of science teachers and the teaching of science in the state of Victoria, and has done so since its foundation in 1943.

There are currently five areas of the organisation that enable and support the operations of the Science Teachers' Association of Victoria Inc. - STAV Council, the Board of Science Victoria, the Science Talent Search Committee (STS), STAV Publishing (SPub) and the STAV Business Centre (STAV House) staff. STAV has enjoyed a rich history with Science Talent Search launched in 1952, STAV Publishing in 1987 and Science Victoria in 2004. Science Victoria is a wholly owned subsidiary company supported by STAV, established for the purpose of promoting science and science education.



All appointments to the board of Science Victoria are nominees of the Association. The Board of Directors is accountable to the Members for the governance, management and control of the activities, business and affairs of the company. A number of STAV activities, including conferences, events and workshops are managed by Science Victoria. STAV Publishing and Science Talent Search are operational activities under the umbrella of STAV and Science Victoria. This report will deal with aspects of Science Victoria's activities as well as with those of STAV itself. All activities conducted throughout the financial year are aligned with the 2016 – 2020 STAV Strategic Plan.

STAV Council

STAV is governed by a voluntary council. This Council is an executive body responsible for policy making and managing the business of the Association. It receives, considers and acts on reports from officers and committees. STAV Council meets at least four times a year as well as via electronic communication. Given government restrictions due to COVID-19, Council and Executive meetings have been conducted online via videoconference and have well exceeded four in number.

At the end of the reported period, STAV Council membership was as follows: Alexandra Abela, President (Penleigh and Essendon Grammar School), Dale Carroll (The Geelong College), Georgia Lumb (Canterbury Girls' Secondary College), Leonie Lang (STS Management, retired teacher), Amanda Peters (Mooroolbark Secondary College, Deakin University), Dr. Robert Roe, Honorary Treasurer (STAV Honorary Life Member, retired teacher and retired academic), Dr. Emily Rochette (University of Melbourne), Michael Rosenbrock Vice President and Honorary Secretary (Wodonga Senior Secondary College), Dr. Fiona Trapani, Editor LabTalk (Penola Catholic College) and Dr. Peta White (Deakin University).

In 2020, we farewelled from STAV Council, Former Honorary Secretary Alyce Holland (Yarrowonga College P-12) and Jacinta Huntsman (Ruyton Girls' School). In April 2021, Adele Hudson (Aitken College) stepped down from STAV Council. In this report I wish to formally thank Alyce, Jacinta and Adele for their dedicated service to STAV as members of Council. They each remain active STAV members and continue to contribute to STAV's activities in very significant ways in a voluntary capacity.

A new STAV Patron

In October 2020, STAV announced the appointment of a new Patron, Associate Professor Misty Jenkins BSc (Hons), PhD, MAICD.

Associate Professor Jenkins is a NHMRC fellow and laboratory head in the Immunology Division at Walter and Eliza Hall Institute for Medical Research, where she researches cellular immunology and cancer immunotherapy. She studied her PhD in Immunology at The University of Melbourne, followed by postdoctoral positions at The Universities of Cambridge and Oxford, and The Peter MacCallum Cancer Centre in Melbourne. She has a long-standing interest in how a specialized group of white blood cells, CD8⁺ T cells, kill cancer. Her current research program currently researches the use of T cell immunotherapy for brain cancer. Misty was awarded the L'Oreal for Women in Science Fellowship (2013), was Tall Poppy of the year (2015), was awarded the Westpac/Australian Financial Review Top 100 Women of Influence award (2016) in recognition for her significant contribution to science and gender equity.



We are delighted to have welcomed Misty into the STAV family and are very much enjoying working with her in the advancement of science education for all. With the same voice, we thank and acknowledge Dr Barry Jones AO, FAA, FAHA, FTSE, FASSA, FRSA, FRSN, FRSV, FACE for his many years of distinguished service to STAV as its patron from 2013-2020.

Inaugural STAV STEM Ambassador

In September 2020, STAV announced the appointment of Felicity Furey to the role of inaugural STAV STEM Ambassador. This role was created by STAV Council in support of Science and STEM educators in Victoria.

Felicity is an award-winning engineer, business entrepreneur and an advocate for change. She has a relentless drive to create a better world inspires students, emerging leaders and their communities to re-engineer what's possible in the future of education and STEM. Felicity's achievements range from Engineer Australia's 'Innovative Engineer of The Year' award to the Vice Chancellor's Award for Excellence. In 2019 she was named as an Engineers Australia Centenary Hero and selected as a Superstar of STEM.

In the role as STEM Ambassador for STAV, Felicity is working with STAV Council, working parties and the membership to increase advocacy and inspiration for STEM careers and build visibility and drive needed for cultural and social change for gender equity in STEM. Felicity is contributing to STAV's high quality professional learning for teachers, connecting industry and the real world with the classroom.

STAV Life Membership: Josie Crisara OAM

At the STAV Annual General Meeting conducted on 19 November 2020, Honorary Life Membership of STAV was awarded to Josie Crisara OAM. The award of Honorary Life Membership of STAV is one bestowed by the Association's membership in recognition of outstanding contributions to STAV and Science education over an extended period of time.

We congratulate Josie and thank her for outstanding service to STAV. She is in good company in joining a distinguished group of STAV Life Members in David Cohen Rod Fawns, Richard Gunstone, Mark Learmonth, Robert Roe and David Trotter.

STAV's working parties and focus groups

A subject association with active, engaged members is a healthy and vibrant one. In January 2020, a number of focus areas were identified by STAV Council as being core to STAV's vision and mission. Working parties or 'focus groups' were established and populated to commence work in these priority areas. Whilst STAV Council oversees the core business and operations of the Association, STAV's working parties are seen as enabling much greater engagement from and with the STAV community, not only in support of STAV Council, but more broadly in the advancement of science education across the state of Victoria.

Understanding the value placed on flexibility, STAV Council recognized a unique opportunity to broaden STAV's reach across Victoria in times of remote learning. The STAV website commenced reconstruction to cater for the proposed shift to online professional learning and the Science Talent Search, as the decision was made to accelerate STAV's online strategy. STAV's working parties were instrumental in prioritising the development of STAV's online presence to better support its members in connecting with each other in challenging times.



Work continued at a pace in the STAV Publications area, as we reimagined what student-learning could look like and we explored examples of best practice in times of remote learning. The *STAV Journals Editorial Committee* was given rise to in January 2021 out of this structure.

STAV's working parties continue to thrive in their support of science educators and science education, all the while boldly challenging the status quo. Chaired by STAV Councillors and STAV Life Members, the focus areas include: *Regional and Rural Engagement; Beginning Science Teachers; STAV History; Laboratory Technicians; Professional Learning & Innovation; Website and Online Presence; and Science Education Research*. Membership of STAV's working parties is open to all STAV Individual and Honorary Members and I encourage you to consider taking up this unique, enriching opportunity.

STAV Staff

As a result of the Victorian state government's COVID-19 restrictions, the STAV Business Centre staff worked both on site at STAV House and remotely (from home) in 2020 and 2021. I extend my thanks to all STAV employees for making the transition between remote and onsite work so seamlessly, on multiple occasions.

In the reported period, STAV has experienced some staffing changes due to retirements, resignations and resultant recruitment processes. Suzanne O'Shannessy (Senior Finance Officer, Science Victoria) retired on the 26 November 2020. In January 2021, Natalija Borizovski (Administration Officer, STAV) took up employment outside of the sector, and Violeta Zarce (Bookkeeper, STAV) retired. Annie Stevens, (Profits and Beyond Pty. Ltd.) was engaged to supply accounting services to STAV and Science Victoria, which commenced on 27 November 2020. Both Collette Whittaker (Administration Officer, STAV) and Lynn Liu (Bookkeeper, STAV) were appointed in January 2021.

In September 2021, STAV experienced two resignations in Lynn Liu and Vince Conserva (former Events Coordinator, Science Victoria). Erandi De Silva (Bookkeeper, STAV) and Leanne Waller (Events Coordinator, Science Victoria) were subsequently appointed after an extensive recruitment process.

On behalf of STAV Council and the board of Science Victoria, I am grateful to all the staff for their significant contributions to the organisation, be it spanning a short or extended period of time.

STAV Member Survey

In July 2020, STAV Council conducted a member survey for individual members of STAV, in order to: better understand what members value about their membership; improve member services; and understand how STAV can better support science teachers throughout Victoria.

In snapshot, the results highlighted that existing members joined STAV and retain membership for the following reasons:

- Networking opportunities
- Access to quality professional development
- To support their professional association

50% of respondents identified STAV's publications as having the greatest member benefit to them. 21% of respondents highlighted STAV's conferences as holding the greatest value, and 10% identified event discounts and email updates as being of most import.



Over 80% of those surveyed expressed a strong view that STAV offer more professional development, with 42% of respondents requesting more online events and 20% of respondents raising the need for more networking opportunities.

When surveyed on the impact of the pandemic on their lives in schools, practical work was identified as one of the biggest challenges during remote learning. Other challenges attributed to working remotely included:

- engaging students
- staying connected
- rapid changes in technology
- developing new teaching strategies
- finding suitable online resources
- creating authentic assessment tasks

Over 50% of respondents suggested that online resources such as webinars, simulations, videos on practical activities and at home practical activities could address some of these challenges. Other suggestions included advocating for more resources for science in schools, and the sharing of resources throughout STAV's online platforms.

The feedback from the survey has provided invaluable insights into members' expectations and values, and the data gathered has directly informed STAV's strategic planning and processes. I extend my thanks to STAV Council for supporting this process, and in particular to STAV Councillors Adele Hudson and Georgia Lumb for their initiative and leadership in this space.

STAV Website redevelopment

In January 2020 the STAV online presence working party was formed. The terms of reference for this working party included an update of the STAV website to include more exclusive content for members. The website completion was projected as January 2021, with testing and migration of the old site and content to happen during Term 4 of 2020. As the COVID-19 pandemic unfolded and as with many other enterprises, STAV Council identified the need to take STAV's conferences online. As the existing STAV website did not have the capacity to have the level of security, accessibility and functionality needed to host conferences and other online projects, the timeline for redevelopment needed to be compressed.

Due to the dedication of STAV Council and working party members, STAV was able to re-develop the website in a much shorter time frame, drawing largely on volunteer expertise and time, and launching in August 2020. This power of work was supported by STAV Council, and led by STAV Councillors Fiona Trapani and Michael Rosenbrock. STAV is indebted to Fiona and Michael for their work in this space.

2021 has seen the continued development of the STAV website to provide access to members across a range of other STAV offerings, including online publications, member forums and asynchronous professional development resources.

STAV Journals Editorial Committee

In January 2021, STAV Council ratified the formation of *the STAV Journals Editorial Committee*. The committee draws on the expertise of educators across the early childhood, primary, secondary and tertiary education sectors, and its role has been to build on advances in STAV's



publications by sourcing, generating and reviewing high quality and diverse content for both *LabTalk* and *Let's Find Out*. The focus of the editorial committee is firmly on building on past successes by increasing the quality and diversity of STAV's journal content. In doing so they will further support STAV individual and school members by increasing the quality of exclusive articles and content, including a move to peer reviewed articles.

In the reported period, the editorial committee was jointly chaired by Dr Fiona Trapani, Senior Editor of *LabTalk*, and Mahaelia Thavarajah, Senior Editor of *Let's Find Out*. In October 2021, Amanda Peters assumed the role of Senior Editor of *Let's Find Out (LFO)*. I take this opportunity to acknowledge Mahaelia for her instrumental role in the reinvigoration of LFO in her time as senior editor, and to recognise Fiona for her work in drafting the terms of reference of this group.

And for their commitment, dedication and drive, I express my thanks to all members of this ground-breaking committee: Fiona Trapani (Penola Catholic College) Senior Editor *LabTalk* and co-chair STAV Editorial Committee, Mahaelia Thavarajah (Quantum Victoria) Senior Editor *Let's Find Out* and co-chair STAV Editorial Committee, Dale Carroll (The Geelong College), Cristina Guarella (The University of Melbourne), Leonie Lang (STAV Councillor), Amanda Peters (Mooroolbark College, Deakin University), Gary Simpson (Woodleigh School), Duncan Symons (The University of Melbourne), Janice Teng (Science Talent Search Coordinator), and Peta White (Deakin University).

STAV Publications and Publishing

STAV's Quarterly publications, *Lab Talk* and *Let's Find Out (LFO)* continued in earnest and undiminished throughout the reported period. Plans for the transition of *LabTalk* and *LFO* online are well advanced; however survey results of members inform us that members are split in roughly equal numbers in terms of their preferences for online access versus hard copy access. Hence *LabTalk* and *LFO* will continue to be made available to members in both formats for the foreseeable future.

STAV's monthly newsletter, CONTACT continued as an online publication, informing STAV members of professional learning opportunities and providing updates on conferences, workshops, events and resources. In addition, STAV's activities were published in the monthly newsletter of the Australian Science Teachers' Association (ASTA).

Teaching Science, the quarterly peer-reviewed Journal of ASTA, is available to STAV members through the STAV Member area of STAV's website in an online format. As an important side note, I wish to acknowledge Dr Fiona Trapani who sits on the Editorial Committee of *Teaching Science* as STAV's representative.

STAV Publishing 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, subject to COVID-19 related disruptions. In continued response to the convenience of remote access to resources, trial exams were available in electronic form and had pleasing uptake by schools.



STAV Member Community Facebook Group and Social Media

In the reported period and in response to Member feedback, STAV Council and its working parties continued to develop STAV's online presence to better support its members in connecting with each other. The members only Facebook group is a supportive professional learning community for Primary, Secondary, Tertiary educator and Laboratory Technician members. My thanks extend to STAV Councillor Fiona Trapani and STAV Individual Members Jacqueline Lupton and Michelle Lupton, for their commitment to growing and moderating this collegiate and dynamic group.

Professional Learning, Conferences and Workshops

During the period addressed by this report, COVID-19 and the associated state government restrictions and lockdowns adversely impacted STAV's operations. This included the inability to hold a significant number of face-to-face events, reduced corporate or individual donations and reduced volunteer activities, all of which impacted heavily on STAV's conferences and workshops. Despite the challenges, and in times of rapid change, when threat and opportunity came together, STAV, the organisation, was able to advance its core purpose, with digital technology playing and continuing to play a critical role in helping us survive and rebuild out of the COVID-19 experience.

Although planning was well advanced, the following activities were postponed to 2021: the VCE Psychology Workshop (planned for Friday 22 May 2020) was postponed to Friday 10 December 2022; and Science Leaders Conference (planned for Friday 12 June 2020) was postponed to Friday 9 September 2021. The STAV Regional STEM & Lab Tech Conference (planned for 8 October 2021) was postponed to 2022, given the preference of the Conference Organising Group for an in-person conference. The theme of the latter remains "STEM Innovation: Food for Thought" and the keynote speaker, Felicity Furey. When restrictions lift, it is planned that the conference will take place at Charles Sturt University, Wangaratta Regional Study Centre.

STAV STEM & LabTech Online 2020: 'Advancing STEM Education for All'

As reported last year, STAV Council took the bold decision in June 2020 to accelerate its online professional learning strategy. To that end, the decision was made to merge the LabTech, STAV STEM Metro (Friday 28 August 2020) and STAV STEM Regional (Friday 11 September 2020) conferences and to offer this combined conference online over an extended period of time in Term Three of 2020.

The conference was envisioned to provide both asynchronous and synchronous presentations, across a six-week period. With a soft launch on 28 August 2020, and two synchronous (live) days on 11 September and 9 October 2020, delegates were provided with six weeks of access to online video presentations, live Zoom keynotes, networking opportunities and live discussions with presenters. The feedback reflects that delegates were grateful for the flexibility afforded to them to access materials at a time which suited them, considering the need to access professional development and the difficulties of working remotely.

Keynote speakers: Dr Amanda Caples. BSc Hons. PhD GAICD, '*STEM Opens many doors*'; Krystal De Napoli, '*From Wangaratta to the Universe*'; included Dr Amanda Caples and STAV STEM Ambassador Felicity Furey '*STEM For All: Making it Happen*'.



STAVCON 2020 Online: 'A Vision for the Future'

On Friday 27 November 2020, STAVCON 2020 was conducted online with concurrent asynchronous and synchronous streams. Conference prices were greatly reduced for STAV Individual Members and STAV School Members, with all pre-recorded and recorded synchronous sessions being available to delegates until Friday 29 January 2021. Keynote Speakers included: Professor Lisa Harvey-Smith, Australia's WiSTEM Ambassador; Professor Mary-Louise McLaws, Professor of Epidemiology, Hospital Infection and Infectious Diseases Control, UNSW; and STAV's Patron, Associate Professor Misty Jenkins BSc(Hons), PhD, MAICD.

Some of the many successful workshop sessions included: VCAA Updates, Maria James (7-10) and Erin Wilson (F-6); *"Girls' Future – Our Future Review of the outcomes of the 2020 Invergowrie Foundation STEM Report"*, Victoria Millar and Linda Hobbs; *"Careers Education and Job Skilling: Is Primary School Too Early to Start?"*, Maria James; *"Understanding and improving evidence-informed practice in Australian schools during and after COVID-19"*, Q Project - Connie Circony and Mark Rickinson; *"Basic theory of electricity and electric circuits for teachers with little or no background in basic electricity or physics"*, Michael Foster; *"Benefits of in-house prepared videos and how to make them"*, Dale Carroll; *"OneNote for remote and face-to-face learning"*, Christy Herron; *"Seeing the Light and Fun with Imaging"*, Barbara McKinnon; *"Situating green chemistry and sustainable development in the science classroom with systems thinking"*, Seamus Delaney; *"Teaching Science through the Big Ideas... with Digital Technologies?"*, Emily Rochette; *"A Commitment to Our World"*, Meg Upton & Gen Blades & Bronwyn Sutton, & Peta White, Climate Change Education Network; *"Interdisciplinary Mathematics and Science Learning in the primary years"*, Russell Tytler and Peta White; *"But where is the hypothesis?"*, Kieran Lim.

VCE Conference Series 2021 Online

In February 2021, all three of STAV's VCE Conferences were conducted online; a fortuitous decision given the snap lockdown under which Victorian found themselves on the weekend prior to launch. Building on the success of STAV STEM Online 2020 and STAVCON 2020, the VCE conferences were conducted via multiple simultaneous virtual rooms, and all sessions were moderated by STAV volunteers. Highlights included the exceptional keynote addresses, VCAA updates and Chief Assessors' respective Examination Reports. To the Biology and Chemistry programs, we added afternoon Discussion Panels which were chaired by Dr Peta White and Professor Deb Corrigan respectively. These were conducted as after school sessions to encourage teachers who could not join the conference during the day to participate in a conversation on some of the big issues in Biology and Chemistry education. All sessions were recorded and available to delegates for an extended period of time via the STAV Website.

VCE Biology Conference, Monday 15 February 2021. Keynote address: Dr Simon Corrie, Monash University *"De-mystifying the COVID myths"*. VCAA Update: Erin Wilson. Afternoon Discussion Panel: Chair Dr Peta White, *"The Big Issues in Biology Education"*.

VCE Chemistry Conference, Wednesday 17 February 2021. Keynote address: Professor Craig Hutton, The University of Melbourne *"Wonderful world of Peptides and Proteins"*. VCAA Update: Maria James. Afternoon Discussion Panel: Chair Prof Deb Corrigan, *"The Big Issues in Chemistry Education"*.



VCE Physics Conference, Friday 17 February 2021. Keynote address: Professor Todd Lane, The University of Melbourne “*Telling the future: the latest advances in climate modelling*”. VCAA Update: Maria James.

STAV looks forward to hosting all three VCE conference online via the STAV website in February 2022.

Challenging Stereotypes in STEM Project, STAV/DET

The Department of Education and Training (DET) and STAV entered into a Victorian Common Funding Agreement (VCFA) for the delivery of project entitled Challenging Stereotypes in STEM Project. The project commenced on signing of the VCFA in 2018, and is scheduled to cease in December 2021 after a deadline extension was agreed to. In this reported period, STAV continued the planning and implementation of activities attached to the DET grant, with significant disruption due to COVID-19, but nonetheless encouraging progress was made toward meeting deliverables, with a continued focus on challenging stereotypes and uncovering conscious and unconscious biases in Science and STEM.

Excellence in STEM Teaching Communities of Practice: A STAV project funded by the Toyota Community Trust

In February 2021, STAV was successful in obtaining funding from the Toyota Community Foundation Australia Pty Ltd to assist with an exciting new project. In brief, the program aims to support STEM educators to strengthen their STEM teaching skills through engagement in a community of practice. As such, the program has been designed by STAV and consultant Dr. Robert Sbaglia to maximise participant collaboration through a blended model of professional development, involving both face-to-face and online learning.

School leaders and classroom teachers of students in upper primary and the middle years were eligible to apply, with successful applicants in Toyota’s target municipalities (Brimbank, Hobsons Bay, Maribyrnong, Melton, Moonee Valley and Wyndham) receiving funding support from the grant. Applications exceeded available places, with 27 schools (53 teachers) winning selection.

The core objectives of this STAV Project are to ensure that changes necessary to support effective STEM teaching are strategically implemented and resourced. Excitingly, this project is developing and trialling an innovative, blended and targeted professional learning model designed to promote deep and sustained understandings of STEM pedagogies.

The face-to-face component of the program was intended to roll out in August 2021; however, given disruptions and delays due to the pandemic, the in-person workshops are now planned to take place out of STAV House in Term One 2022.

STAV is grateful to the Toyota Community Trust for its funding to deliver this project. We look forward to reporting on the outcomes of this initiative in the future.



The Science Talent Search (STS)

The Science Talent Search (STS) celebrated its 70th birthday this year and has continued to attract wide interest across Victoria. Driven by volunteers, Janice Teng, STS Coordinator, delivers very capable oversight of the STS.

The 2020 STS Exhibition and Presentation Day took place via Virtual Online Presentation Ceremonies on Monday 16 November. The 69th Science Talent Search adopted the theme, 'Deep Blue: innovations for the future of our oceans'. In 2020, STS attracted over \$36,000 in bursaries and more than 1,900 student participants. On presentation day, it was inspiring to experience how this cohort of students had connected with science beyond the classroom. The quality of the projects was outstanding. In 2020, 210 Major Bursary Awards, 324 Minor Bursary Awards were presented to students. Some entrants in the 2020 STS competition were nominated to proceed to the national BHP Foundation Science and Engineering Awards (BHPFSEA).

The Awards Day Ceremony was a most joyous occasion during which student creativity, imagination and innovation were celebrated. In attendance online were students from across the state, their dedicated teachers, school leaders, sponsors, proud family members and STS committee members and volunteers. In my welcome speech, I had the great privilege of announcing the recipients of the Peter Craig School Awards and Hugh McKnight Encouragement Awards for 2020. Both sets of awards are sponsored by the BHP Foundation Science and Engineering Awards. We are very grateful for the Foundation's sponsorship.

The four recipients of the Peter Craig School Awards, each received a plaque and a bursary prize of \$250. The schools awarded in 2020 were:

- Serpell Primary School
- Holy Rosary School
- McKinnon Secondary College
- Presbyterian Ladies College - Senior School

The four recipients of the Hugh McKnight Encouragement Awards each received a plaque and bursary prize of \$150. The schools recognised in 2020 were:

- Syndal South Primary School
- Camberwell Girls Grammar School - Ormiston House
- Viewbank College
- Camberwell Girls Grammar School - Senior School

Special thanks must go to the hundreds of volunteers who supported this competition in 2020. To the members of the STS Management Committee - Josie Crisara OAM, Leonie Lang, David Trotter, Mary Donaghy, Matt Story and Janice Teng) – our sincere thanks. And to all members of the STS Committee, judges, sponsors and parents, STAV's gratitude. Above all, I would like to congratulate all competing students and their dedicated teachers in adapting to the new mode of delivery in 2020.

As already referenced, STS is one potential pathway to the BHP Foundation Science and Engineering Awards (BHPFSEA). STAV's congratulations extend to all student and teacher entrants across Australia in 2020; in particular, Hazel Glen College's Kylee Townsend for winning Victoria's nomination as its Teacher Finalist. Kylee has a solid history of exceptional service to the Science Talent Search and also to Science teaching more broadly.



In 2021, the STS Management and Committee and the STS Coordinator Janice Teng have been very successful in moving all aspects of STS submission, judging, and presentation and exhibition day online; the 2021 theme was **'Food: Different by Design'**.

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

Overall numbers	2020
Total number of schools entering the competition	127
Total number of <u>students</u> in entire competition	1940
Total number of <u>entries</u> in entire competition	1606

Below is the student participation in the two categories that provide entry into the BHP Foundation Science and Engineering National Awards:

Experimental Research	Entries received: 221
	Total Student Participation 281 (172 Female, 109 Male & 0 Indeterminate/intersex)
Inventions/Engineering	Entries received: 34
	Total Student Participation 46 (16 Female and 30 Male)

As with so much of STAV's core business in this reporting period, COVID-19 changed the way that STS was to be conducted. With the majority of students in Victoria studying online throughout the competition period, the STS Management Committee showed great vision in completing the transition of STS online, thus future proofing STS for many more generations of eager students to come.

The Australian Science Teachers' Association (ASTA)

STAV is a founding member of the Australian Science Teachers' Association (ASTA) and, as well as being represented on that body's governing Board, it conducts ASTA activities within this state on behalf of the national organisation. STAV's representative on the ASTA Board is Alexandra Abela; STAV's Delegate to ASTA Council (Congress) is Dale Carroll; and STAV's representative on the ASTA Communication and Collaboration Committee is Dr Robert Roe. STAV Membership contributes to the ASTA's viability via the quarterly Capitation fee.

Victorian science educators and laboratory technicians are able to access ASTA's national science teachers' conference (CONASTA) at discounted rates if they are STAV Individual members. Due to the COVID-19 pandemic, CONASTA 69 (Canberra) was postponed on two occasions. The conference is currently scheduled to take place in July 2022 and will be hosted 'in person' by The Science Educators' Association of the ACT (SEAACT). In 2023, The Science Teachers Association of South Australia (SASTA) will host CONASTA 70 in Adelaide.

Access to the quarterly peer-reviewed journal, *Teaching Science*, is another benefit that STAV is able to pass on to its members. This online journal is made available to Individual STAV members through the STAV Member Resource area of the STAV Website.



On 12 June 2020, the Education Ministers agreed to terms of reference for the review of the Foundation to Year 10 Australian Curriculum, the reported focus of the review being on content refinement within the existing structure and dimensions of the Australian Curriculum. ACARA curriculum officers leading the review process engaged subject matter experts and practitioners to assist in the content refinement. This included consultation with ASTA. The Science Curriculum Reference Group comprised individuals nominated by their states and territories through subject associations. STAV provided representation in both the primary and secondary areas in Alyce Holland and Alexandra Abela respectively.

Partnerships and Collaborations

STAV continues to contribute to state and national initiatives and collaborates with the following organisations: Australian Science Teachers' Association (ASTA), The Australian Academy of Science, Australia's Chief Scientist, Australian Catholic University, The Australian Curriculum and Assessment Authority (ACARA), Australian Institute for Teaching and School Leadership (AITSL), Australian Technological Sciences and Engineering (ATSE), The Chemical Education Association (CEA), Council of Professional Teaching Associations of Victoria (CPTAV), CSIRO / BHP Foundation (Student and Teacher Awards), Charles Sturt University and the Wangaratta Regional Study Centre, Deakin University, Education Services Australia (ESA), Engineers Australia, DTAC (Digital Technology Advisory Committee Wangaratta), Federation University, La Trobe University, Monash University, The Royal Australian Chemical Institute (RACI), Rowe Scientific (BHP Billiton/CSIRO Student sponsorship), RMIT, Swinburne University, The Toyota Community Trust, The Office of Victoria's Lead Scientist, The Victorian Curriculum Assessment Authority (VCAA), Vicphysics Teachers' Network Inc., The Victorian Department of Education and Training (DET), The University of Melbourne.

Financial Management

In this financial year ending 30 June 2021, STAV reported a surplus of \$39,091. In 2020, STAV reported a deficit of \$35,669. In 2019, the deficit was \$26,459.

It is acknowledged that COVID-19 has impacted the operations, including the inability to hold some face-to-face events. I refer you to the STAV Treasurer's Report, the Financial Statements and Auditor's report for greater detail.

STAV Council resolved that STAV Executive engage the services of a consultant to conduct a review of STAV's operations and, in conjunction with Science Victoria (SV), report on the relationship between STAV and SV. The Business Process Review explored where there are opportunities for improvement in efficiencies, effectiveness and economy of processes and systems in the areas of finances and governance.

Business Process Review

In October 2020 Science Victoria and its sole member, The Science Teachers' Association of Victoria (STAV) Inc., jointly commissioned Profits & Beyond Pty Ltd to review the business process of both organisations and to provide recommendations on the possible areas of improvement. An interim report was issued by Profits & Beyond Pty Ltd on 15 March 2021.



The scope included conducting a review of processes and systems across Science Victoria and STAV operations and to report on opportunities for improvement in process efficiency, economy and effectiveness. This included four business activities:

- Science Teachers Association of Victoria Inc. (STAV)
- Science Victoria (Science Vic)
- STAV Publishing
- Science Talent Search (STS)

The report examines where STAV and Science Victoria are able to make improvements in process efficiency, economy and effectiveness across their businesses. Opportunities for improvements were identified in the areas of Organisational Structure, Organisational Performance and Organisational Resources. In addition, the relationship between STAV and Science Victoria had been typically detached for many years and is recognised as being central to the ongoing success of the businesses.

The interim report makes fourteen recommendations, with the most critical being the restructure of the operational entities bringing two of the Science Victoria businesses back under the STAV umbrella. STAV Council and the Board of Science Victoria each voted independently to unanimously accept all fourteen recommendations of the review. STAV Council regularly monitors the progress of the implementation of the recommendations of the review.

In summary and on reflection

I trust this report affirms with you, our valued membership, STAV's critical role as a not-for-profit organisation, in building the capacity and agency of laboratory technicians, teachers, science coordinators, principals and system leaders. Through its advocacy work, it should be evident that STAV contributes to the improvement of the quality of science teaching and learning through enhanced professional learning, resources and the promotion of professional best practice. In times of challenge and adversity, STAV has stood strong and has been unwavering in its support of the science education community to continue to work collaboratively and with agility.

It has been another remarkable period across the organization. I remain in awe and admiration of the work of STAV's volunteers, most of whom are practicing or retired teachers. This is all the more impressive, given the significant challenges we have faced as a society and profession in recent times due to the pandemic. Established in 1943, The Science Teachers Association of Victoria (STAV) stands strongly and proudly as the pre-eminent science teacher member association in the state, supporting, representing and advocating for all those involved in science education in Victoria. It is STAV's volunteers, friends and champions who provide sustenance and the impetus for change to ensure STAV's sustainability for many more decades to come.

To those who embody and enact STAV's Vision and Mission – its dedicated Councillors, working party members, many other volunteers, staff and above all, its members – I express my gratitude and best wishes. May we all continue to find in STAV and its people, a source of guidance, support and inspiration.

Alexandra Abela

STAV President