



Science Teachers Association of Victoria Inc.

ABN 59 004 145 329

Patron: Associate Professor Misty Jenkins BSc (Hons), PhD, MAICD

VCE Science Teachers Conference Series 2022

Biology and Environmental Science

14th February 2022

All sessions will be recorded and available to view until late 2022

Perspectives on Practice: Turning over a new leaf

President's Welcome

Welcome to the VCE Biology and Environmental Science Online Conference 2022. We have an exciting, diverse and engaging program with a mix of live and pre-recorded presentations and workshops. We have two outstanding keynotes this year, Dr Nicholas Chandler, will open the conference with a timely keynote on "My biochemistry PhD: Turning over a new leaf while the book's being re-written". Professor Lesley Hughes will close with the topic 'Climate change and where to from here'

There will be three live sessions with eighteen choices of workshops covering curriculum, pedagogy, assessment, technology as well as extension topics. There will be the Biology and Environmental Science VCAA Updates A review of the 2021 VCE examination led by Chief Assessor Hugh Latimer.

In addition, there will be the opportunity to network with colleagues and to access multiple pre-recorded presentations on-demand. All sessions will be recorded and available for viewing after the conference, providing you with a great ongoing resource.

Finally, thank you for participating in this conference, thus ensuring you stay fully informed of the key issues in the VCE sciences. We trust you will enjoy and find the sessions interesting and rewarding.

Alexandra Abela, President, Science Teachers Association of Victoria Inc.

Science Teachers Association of Victoria Inc. acknowledges the support of the Department of Education and Training through the Strategic Partnerships Program.



Synchronous Sessions

Live on 14th February 2022

8.45am - 8.50am Welcome

Welcome, Acknowledgement of Country & Housekeeping: Alexandra Abela, STAV President

Introduction of Keynote Speaker

8.50am - 9.35am Keynote Address 1



Dr Nicholas Chandler

Structural Biology Division, The Walter and Eliza Hall Institute of Medical Research

My biochemistry PhD: Turning over a new leaf while the book's being re-written

Doing a scientific research PhD always promised to be eventful, sprinkle in a global pandemic and it grew into a unique learning experience. In sharing the story of my scientific career thus-far, I will offer my reflections on the key issues and dramatic changes taking place within the scientific world today; from the perspective of a bright-eyed, double-vaxed, early-career researcher.

9.35am - 10.20am VCAA Biology Update

Erin Wilson, Curriculum Manager, STEM

Victorian Curriculum and Assessment Authority (VCAA)

A new VCE Biology Study Design, a new set of opportunities and possibilities. This VCAA update will explore key aspects of the new Study Design and highlight key considerations for teachers in 2022. Opportunities to support students pathways into VCE Biology through the Victorian Curriculum F-10 will also be discussed.

10.20am - 10.45am Morning Tea

Session A 10.45am - 11.30am

A1 Georgia Lumb, Canterbury Girls Secondary College

How do we prepare them for Unit 3/4? - Writing Assessment in Unit 1/2 Biology

To help reveal the science behind the therapeutic promise of stem cell and regenerative medicine, Stem Cells Australia have produced an innovative set of teaching resources which bring real world and engaging stories of scientific endeavour into your classroom. In this session the authors will showcase the new website and freely available teaching resources.

The resources have been designed around stories from the lab, an engaging and insightful series of freely available videos showcasing scientists from 23 prominent stem cell research laboratories across Australia. Drawing on the videos and other media resources, the Teacher Resource offers extensive examples of how you can teach science as a human endeavour through the context of stem cells. Included in the resources are companion modules which explore the ethics of stem cell research and offer insight about the life of a researcher.

VCE Biology

A2 Alicia Hewes, Zoos Victoria and Claire Priestley, Zoos Victoria

Zoos Victoria: Conservation and Bioethics

Zoos Victoria care for over 300 different species of animals and are committed to saving endangered species endemic to Victoria from extinction

In this session we will discuss opportunities to explore contemporary bioethical issues with your students, using conservation examples, particularly for Unit 2 AOS 3. We will also consider how case studies of endangered native species could be used to explore aspects of key knowledge related to adaptations and species interdependencies. We will share how Zoos Victoria can support you through our resources and programs. These provide an authentic context to support students' knowledge and understanding, scientific thinking and practical investigation skills. We want to support your students, as citizen scientists, to create a future rich in wildlife.

VCE Biology

A3 Jorja McKinnon, Deakin University and Dr Peta White, Deakin University

Food security and secondary data: getting kids to gobble up the numbers

2022 is an exciting year for the Environmental Science study design as we see a number of new areas for exploration - one of which is food security. With a growing global population and the threats of anthropocentric changes, the most confronting being climate change, environmental managers are faced with the delicate challenge of maintaining Earth's capacity to feed all life sustained here.

Understanding how food is produced and the pressure of agriculture on natural systems required the use of large data sets. Using the Food and Agriculture Organisation secondary data set, the session will explore a classroom ready activity that will have your students gobbling up the numbers!

VCE Environmental Science

A4 Emma Stevenson, University of Melbourne, Jennifer Mansfield, Monash University and Peta White, Deakin University

Perspectives on practice: inquiry based practical work

Practical work is a hallmark of science classrooms, yet has been criticised for being ill conceived, confused and ineffective.

'Recipe style' practical tasks may lead to students doing things with objects as the teacher intends. However, these tasks do not always lead to development of student knowledge about abstract concepts nor do they model how science is done in the real world. Inquiry based learning practices position learners as integral to the learning process and model aspects of scientific inquiry. This does, however, challenge traditional models about the role of the teacher and learner during practical work in VCE classrooms.

This session will explore how practical tasks commonly utilised in the lower secondary years can be adapted using guided and structured inquiry approaches to position the learner as the key inquirer in VCE classrooms. We will explore the role of the teacher and learner during inquiry learning and consider strategies for managing tensions which arise when the traditional teacher/student roles are challenged.

VCE Biology

A5 Kate Chamberlain, Wantirna College

Battle for survival: use of threatened species as a classroom case study in the VCE Environmental Science Study Design

Humans are often quick to demonise Grey-headed Flying Foxes, however they are an important endemic keystone species. With case studies having a renewed focus in the VCE Environmental Science Study Design, this session will explore the use of this threatened species as a robust case study in the classroom. Issues of perspectives and value-systems that influence decision-making processes will be framed within a classroom context, including discussion around animal ethics, population changes, the ecosystem services provided, conservation of the species, and whether sustainability principles are met with current management practices. The concept of Grey-headed Flying Foxes being the canary for climate change will also be discussed.

VCE Environmental Science

A6 Sue Graham, Education and Interpretation Ranger Phillip Island Nature Parks

Climate Action

The rise of global temperatures caused by human activity has resulted in increasing sea levels and bushfire risks, and a decline of habitats for our Australian native species.

This case study will focus on how Nature Parks is working towards climate neutrality and increased biodiversity through protecting native habitats including marine areas and fish species. Learn about climate change impacts on Millowl's (Phillip Island's) iconic Little Penguin and discover how Nature Parks world-renowned scientists and researchers are gathering critical data to inform conservation decisions.

VCE Environmental Science

A7 Marika Wong, Environmental Education Victoria

A new Study Design, a new perspective

This session will explore Units 1&2 of the new Environmental Science Study Design. It will include suggestions for planning the course, designing assessment and accessing resources. Opportunities to share ideas and ask questions will be facilitated.

11.30am - 11.35am Short Break

Session B 11.35am - 12.20pm

B1 Rebecca Russell-Saunders, Wesley College and Dr Jennifer Mansfield, Monash University

Building a Case: Perspectives on creating a SAC using a media article

Of the four new SAC formats for Units 3/4 Biology in the new study design, two formats, the Case and Issue, offer an opportunity to connect students with real world science contexts. We offer the perspective that SAC tasks are an opportunity to create engaging, authentic and relevant ways of assessing student understanding of ideas, key science skills, capabilities and to showcase the human endeavour of science.

Freely available media articles offer rich and relevant contexts for creating a Case or highlighting an issue. In this session, we demonstrate strategies to support teachers when writing an assessment task, using a recent media article. Participants will have the opportunity to use and share their expertise as we collaboratively create a SAC task. Although we are pitching this session at Units 3/4, the strategies are relevant for creating assessment tasks for any year level.

VCE Biology

B2 Mary Vamvakas, Deakin University and Peta White, Deakin University

Contemporary Biology Practice: Engaging students with current science and scientific practice in context

Contemporary research in science can provide a compelling and local context for teaching science. Deakin University pre-service teachers, worked with teachers and scientists to translate current research into contemporary VCE Biology and lower secondary science teaching and learning resources. The resources and their activities represent contemporary science practices in key areas relevant to the biology curriculum and support the development of key science skills. Come along and find out about these free, classroom ready online resources and how they can be adapted or used to explore key areas in the new Biology Study Design and in lower secondary science.

VCE Biology

B3 Amrita Kamath, Deakin University and Peta White, Deakin University

Innovate, involve, inspire : Pedagogies that promote learning

It is often thought that teaching VCE students is time sensitive where every second counts and direct instruction is the only appropriate strategy. Pedagogies that promote student learning and engagement include guided inquiry based learning (GIBL). In this session we debunk the misconception that GIBL is oppositional to direct instruction, and we model various pedagogies that enhance students learning through engagement in real-life science and promote deeper learning through guided inquiry, acknowledging the appropriate use of direct instruction.

We share a lesson sequence for Biology Unit 2 Area of Study 3, focusing on contemporary ethical issues on Stem Cell research. This lesson sequence is founded on resources designed by academics at Deakin University, Monash University and the University of Melbourne, which are available for teachers to adapt and implement.

VCE Biology

B4 Xenia Pappas, Korowa Anglican Grammar School and Eleanor Gregory, Cengage Learning

New year, new Study Design, ready – set – go!

The VICscience Biology ecosystem is your students' key to success in VCE Biology. This session will unpack our carefully integrated ecosystem to ensure you and your students fully optimise this exciting suite of resources. Written by our expert author team, the content meets all the requirements of the VCE Biology Study Design 2022–2026.

We will share ideas for addressing all key knowledge and key science skill requirements of the VCE Biology Study Design using the range of student and teacher resources that comprise the ecosystem. We will show you how to cater for mixed ability classrooms as well as a first-hand look at the wide variety of assessment practice.

Practical work is an important component of the VCE Biology Study Design. Nelson has partnered with Southern Biological to bring you investigations that work every time. We will demonstrate how these investigations from Southern Biological provide an authentic and engaging practical experience for your students.

We will also walk you through our brand-new assessment platform, exemplar to show you how simple and quick it is to provide your students with thousands of unseen exam-style and VCAA questions, which you can use during the year to build student confidence for success in their VCE Biology exam.

VCE Biology

B5 Jorja McKinnon, Deakin University and Sarah Moore, McKillop College Werribee

Assessment task Matrix - making sense of contemporary tasks described in the 2022 Environmental Science Study design

In recent years VCAA has taken a new direction with assessment tasks in the VCE Science study designs. Some of the tasks described are familiar and some are new to us all.

In this session Sarah and Jorja will provide definitions of assessment tasks that have been newly defined in the study design as well as provide possible tasks.

VCE Environmental Science

B6 Helen Silvester, Oxford University Press and Anna Hawthorne, Oxford University Press

Developing SACs for VCE Biology

How can we develop School Assessed Coursework (SACs) to meet the specifications of the new Study Design? And how we can help students to develop the right skills to tackle these SACs and practical work?

Join Helen Silvester and Anna Hawthorne as they consider SAC requirements and examination skills for the new VCE Biology Study Design, and share useful tips to get started on developing SACs for your school, including case study analysis and evaluation of a bioethical issue.

VCE Biology

B7 Petra Chambers, Salesian College Sunbury

Using case studies to deliver VCE Environmental Science curriculum

In a time when teaching professionals are returning from remote learning, a common focus in the classroom is supporting students to work collaboratively with others in their learning. The Socratic Seminar is one protocol that enables students to research and process case studies and make meaningful dialogue with their peers. The protocol also encourages them actively listen and respond, pose thoughtful questions, draw conclusions and provide and receive feedback. Case studies are frequently used in the 3/4 exam and regular practice at processing and discussing these can help your students to develop higher order thinking skills and apply their learning to new contexts with confidence. This session will provide you with ready-to-use student and teacher resources to deliver a socratic seminar in Unit 4 Environmental Science as well unpacking case studies applicable to units 1 - 4.

VCE Environmental Science

12.20pm - 1.00pm Lunch Session

Maria James, VCAA

VCAA Update Environmental Science

Join Maria James for an informal chat to discuss any questions you have.

Networking Room Open (STAV Alpha)

Session C 1.00pm - 1.45pm

C1 Paul Donaldson, Assistant Principal, Fairhills High School

Chief Assessor's Environmental Science Update

A focus on the 2021 Environmental Science Exam and the key elements that successful students were able to show in completing the exam. We will also consider some elements that were not so well done in the exam, and highlight some of the adjustments and developments that need to be considered for the new Study Design (and therefore exam) in 2022.

VCE Environmental Science

C2 Dr Jennifer Mansfield, Monash University and Professor Megan Munsie, Stem Cells Australia and University of Melbourne

Introducing a new and innovative way to introduce stem cell science into the classroom

To help reveal the science behind the therapeutic promise of stem cell and regenerative medicine, Stem Cells Australia have produced an innovative set of teaching resources which bring real world and engaging stories of scientific endeavour into your classroom. In this session the authors will showcase the new website and freely available teaching resources.

The resources have been designed around stories from the lab, an engaging and insightful series of freely available videos showcasing scientists from 23 prominent stem cell research laboratories across Australia. Drawing on the videos and other media resources, the Teacher Resource offers extensive examples of how you can teach science as a human endeavour through the context of stem cells. Included in the resources are companion modules which explore the ethics of stem cell research and offer insight about the life of a researcher.

VCE Biology

C3 Tania O'Brien, Bacchus Marsh Grammar

Practical applications of retrieval practice for Biology

One of the practices I have implemented into my classes is a focus on 'retrieval practice' and building students' strategies for revision. Something students struggle with so I am happy to share some of the scaffolds I am using with my 3/4 Biology students based on the work of Kate Jones' 'Retrieval Practice' book and templates which draws heavily on the 'science of learning'.

VCE Biology

C4 Sacha O'Connor-Price, Haileybury Berwick Campus

Hands on Teaching Strategies for the new Study Design

Modelling processes in biology aids in students understanding, providing a visual aid for abstract processes.

In this session, I will show you how I use hands of activities to model chemical processes to allow students to 'see' what happens within key processes, and then apply this understanding to examination style questions.

VCE Biology

C5 Dr Peta White, Climate Change Education Network and Jorja McKinnon, Climate Change Education Network

VCE Environmental Science teachers focussing on how to embed climate change into the study design and programs

Join us to explore how you can continue to lead and extend your VCE students to address the complexity and urgency of the climate crisis in the VCE Environmental Science programs without increasing your students anxiety.

This session will provide resources and ideas about how to support your students to unpack the complex, multifaceted climate challenges.

We will showcase the rich and extensive opportunities available for exploration with VCE students. These include: local Victorian resources and contemporary research with scientists data and representations.

VCE Environmental Science

C6 Caroline Cotton, BioBrain

Problem-based learning - a new way to teach the same things!!!

Looking for a new way to teach your students the same content? Come to this session to learn how to develop active learners who learn to solve real life problems while thinking!!! This will result in more engaged learners!! We will go through the nuts and bolts of problem-based learning. You will be provided with examples and takeaways that you will be able to use with your students.

VCE Biology

C7 Julie Mulholland and Bridget Murphy, ANSTO

How tiny bubbles revealed a huge problem: Using real ice core data to understand climate change

Zoom in to find out how ANSTO specialise in science at the atomic scale.

Our scientists use naturally occurring radioisotopes to monitor changes in the environment over long time scales. As one example of this research, Dr Andrew Smith uses ice cores from the Antarctic to determine changes in temperature and greenhouse gas concentrations.

In this workshop, teachers will learn about our data set and accompanying worksheet that helps students examine and graph 800,000 years of greenhouse gas concentrations.

This resource provides activities to address content in Earth and Environmental Science Unit 4, key science skills, as well as general capabilities including literacy, numeracy, ICT skills and critical and creative thinking.

VCE Biology

1.45pm - 1.50pm

Short Break

Session D 1.50pm - 2.50pm

Hugh Latimer, Chief Assessor, Independent Consultant

Meet the Chief Assessors

Hugh Latimer and his colleague will go through the 2020 Biology Examination Section B and the Assessment Report. Particular emphasis will be paid to the more challenging questions and advice for students will be given.

Delegates to bring a copy of the 2022 examination paper.

VCE Biology

Session E 2.50pm - 3.40pm

Keynote Address 2



Professor Lesley Hughes, Pro Vice-Chancellor (Research Integrity and Development) Distinguished Professor of Biology, Macquarie University
Climate change and where to from here

3.40pm - 3.45pm Closing Remarks

Alexandra Abela, STAV President

3.45 pm - 4.30 pm Post conference networking

(STAV Alpha Zoom)

Asynchronous Sessions

Available to view from 7 February 2022

AS1 Adam Di Blasi, Learning Innovation Associate, Edrolo

Sharing Year 7 strategies for end of school success

Edrolo is building an all-in-one comprehensive Year 7 Science resource focused on developing scientific conceptual understanding, building scientific literacy and inquiry skills. In this session, teachers will be guided through how they can set up their Year 7 students for end of school success, and learn about the consistent conceptual approach Edrolo takes to teaching Science. You will receive a free workbook to take from the conference to the classroom to experience the difference first-hand. All attendees will also have the opportunity to apply for a full access trial to Edrolo.

VCE Biology

AS2 Hollie Feller, Project Coordinator and Monica Ferrie, CEO, The Genetic Support Network of Victoria

Engage students with science: Translation of science to the “real world”

The Genetic Support Network of Victoria (GSNV) is passionate about education and has been continually educating the general community on genetic and genomic health. An understanding of genomics is much more than a grasp of the technology, clinical and service outlay. Awareness of the ethical, legal, and social issues are important elements of all education efforts with the community and health professionals. In increasing the awareness of the social implications of genomic technologies, we believe it is important to begin the education process from a young age. This year we have created a program of resources aligned with the VCE Biology study design, using the power of storytelling. Through case study examples, our resources for teachers and students are able to bring to life the connection between the concepts and personal experience, to give a greater perspective of the roles of the experts and the impacts of the practice on real people. The program is based on creativity and interaction as we believe it is important to deliver balanced education on genomics which will adequately address the pros and cons of using this technology to allow for informed decision making and healthy debate.

Engaging students with Science we have created a translation of Science to the “real world”, aiming to highlight possible career pathways, upskilling future users of this technology, providing increased genetic and genomic literacy levels in the community and initiating discussions on ethical and social challenges.

The program design is based on creativity, interaction, and consists of:

- * Teachers Guide & teacher education sessions
- * Creative program with guided activities worksheets and props
- * Case Studies with lived experience videos
- * Walk through genetic and genomic healthcare pathways.

VCE Biology

AS3 Jacki Stewart, Mount Clear College

Turning over your first leaf - tips and tricks for beginning Psychology teachers

Teaching VCE Psychology for the first time is daunting whether you are a grad or just new to the subject. This session will give you practical help getting started and answer some of the big questions about the delivery of the subject. You will leave with greater confidence in your ability to teach the content, deliver the SACs and attack the practical aspects of Psychology.

VCE Psychology

AS4 Maria James, VCAA

Have you thought about teaching VCE Environmental Science?

VCE Environmental Science is a subject that is growing in popularity across Victoria, and more schools are introducing it into their curriculum offerings. Students even like the VCE examinations in this study! The course at Units 1 and 2 is very open and flexible, allowing teachers to develop programs that are customised for their students and their school situation and resources. Units 1 and 2 cover ecosystems and responses to natural and human-caused changes in Earth's surface, pollution, and food and water security. Units 3 and 4 are much more structured and cover climate change and energy choices for society. This session will provide an overview of the course, possible teaching approaches, and examples of assessment across Units 1 to 4.

VCE Environmental Science

AS5 Caroline Cotton, BioBrain

BioBrain - an innovative way to teach VCE Biology

Looking for a new way to engage your students? Come to this session to learn about the new BioBrain platform!! With both a teacher and student interface work can easily be assigned to students and results are available immediately to both teachers and students with automatically marked quizzes. Interesting and contemporary case studies provide great examples of key concepts. Use BioBrain for flipped learning, teaching your class or as a revision tool to test understanding of key concepts.

VCE Biology

AS6 Richard Allan, Biozone

BIOZONE's NEW 2022 Editions for VCE Biology

Addressing the new 2022 Study Design and in FULL COLOUR. Fabulous new content throughout with a wealth of new activities developed specifically for the new study design. Learn how to make the most of the pedagogical innovations that underpin the BIOZONE books. Hear about the various eBook LITE versions (School Managed and Personal licences) as well as access to Online Model Answers.

Workshop attendees will each be sent FREE print copies, PLUS 90-day eBook access of both NEW editions of Biology for VCE Biology - Units 1-4.

VCE Biology

Presenters



Alexandra Abela

Alex is the President of the Science Teachers Association of Victoria. She has been a continuous member of STAV since joining as a pre-service teacher in 1993. Since first joining STAV Council in 2001, Alex has held a number of Executive roles, and she is currently STAV's representative on the board of the Australian Science Teachers Association. Alex has held a variety of leadership positions in science education throughout her career. She is passionate about curriculum design, committed to innovation in teacher professional learning, and loves teaching students of Chemistry at Penleigh and Essendon Grammar School.



Richard Allan

Richard has an MSc in biology and is founder and CEO of BIOZONE International, an educational publishing house specializing in the publication of instructional materials (both print and digital) for high school science programs. He lives in Hamilton, New Zealand, with his wife and two children.

He has a strong interest in the future potential of immersive digital technologies to provide highly engaging experiences for science education students



Kate Chamberlain

Kate completed an Environmental Science degree before undertaking a Bachelor and Masters of Education in the hopes of inspiring others to care about the world around us. She has taught within the environmental science discipline for years, including both middle school and VCE classes, and is the Environment Teacher Mentor at the school she works. Kate is particularly passionate about conservation and volunteers her time rescuing and rehabilitating bats, including the threatened Grey-headed Flying Fox.



Petra Chambers

A teacher of secondary science and biology for 20 years, I have taught VCE Environmental Science for two years. Students engage enthusiastically with my classes and enjoy the variety of learning activities that we complete in the classroom. With support from my school's coaching program, I have delivered teaching and learning protocols that help engage my students in discussion and critical and creative thinking using media articles and case studies.



Nicholas Chandler

Nick is a biomedical researcher at the Walter and Eliza Hall Institute specialising in the fields of CAR T cell immunotherapy and structural biology. Completing a Bachelor of Science with Honours at the University of Melbourne he then obtained his Honours degree and PhD at the Walter and Eliza Hall research Institute, with the work conducted during his PhD recently becoming the subject of an international patent and first-author publication. He is an enthusiastic contributor to scientific education within his institute, with a passion for training students and presenting lab tours for anyone from school groups to rotary clubs.



Caroline Cotton

Caroline is a Biology and Chemistry teacher who has developed a new STEM Education platform for Biology, Chemistry, and Physics students and their teachers.

Paul Donaldson

Teaching Geography and Science, in particular Environmental Science, at Fairhills High School is something I have enjoyed for the last 36 years. A long time in the one school, but I have managed to broaden this by working within the VCAA as State Reviewer (when we had CATs), exam marker, Assistant Chief and Chief Assessor, as well as Exam Writing Panel member and now Panel Chair. This has included contributing to the development and review of the Study Design (a number of times). I worked at Deakin University as lecturer in Environmental Education for six years, and had a year as the Education Officer for Parks Victoria.



Adam Di Blasi

Adam is a former leading teacher who moved to Edrolo 3 years ago bringing a wealth of knowledge with him after being in the classroom for over 10 years.



Hollie Feller

Hollie Feller divides her time between her role as Project Assistant at the Genetic Support Network of Victoria and her voluntary role as the co-founder and Director of UsherKids Australia. Hollie is passionate about early diagnosis of rare disease through genetic testing, the education of clinical professionals as well as peer support groups in rare disease communities. Hollie is also a founding member of the Paediatric Vision Impairment Alliance (PVI Alliance) and is on the Board at Genetic Cures Australia a charity she established to further accelerate Australian research and therapies for genetic conditions such as Usher syndrome



Monica Ferrie

Monica is inspired by potential and possibility, for individuals, families, teams, organisations and communities.

Monica is the Chief Executive of Genetic Support Network of Victoria (GSNV) an organisation driven by our vision of a world where everyone can flourish and live their best lives. Active involvement is important to her and she is a Director of the Asia Pacific Alliance of Rare Disease Organisations, Chair of the Australian Patient Organisation Network Steering Committee, Founding member of GUARD Collaborative Australia, Director of Bold and Brave Consulting and Toilet Training Educators, a Small Business Mentor, Treasurer of the Balibo House Trust, Timor-Leste and Honorary Fellow of the University of Melbourne.



Sue Graham

Sue is an Education and Interpretation Ranger, working with the Phillip Island Nature Parks for the last 14 years, delivering education experiences and case studies across all year levels' relevant curriculum. Prior to working at the Nature Parks Sue worked with Alpine school, and Marlo year 9 school camp as a casual for six years, delivering the environmental camp. Sue also worked at Nagle college and Swifts Creek High school and spent her winters in the Northern hemisphere as a ski instructor at Royal Gorge, USA.

Sue is passionate about the environment and our impacts on the natural world, educating and empowering students to make a difference in their own lives and that of those around them.



Eleanor Gregory

Eleanor is the Senior Product Manager - Sciences at Cengage Learning. Prior to this she was the Education Officer at the Science Teachers' Association of Victoria, CREST Officer at CSIRO Education and a senior Biology teacher.



Anna Hawthorne

Anna has been an educator for six years and has a wide range of experience teaching Secondary Science and VCE Biology. She currently teaches at Mentone Girls' Grammar School where she was granted an enterprise award to design a year 10 science elective to incorporate science and enterprise on the foundation of cosmetic chemistry. Anna has also worked with a number of publishers and digital education platforms designing educational resources.



Alicia Hewes

I was very fortunate to grow up with a big backyard close to a nature reserve. Caring for my many pets and surrounded by wonderful local wildlife, I developed a curiosity and love for nature.

This inspired me to undertake a Bachelor of Science degree, with Honours in Zoology. As I had always wanted to be a teacher, I undertook studies in Education and for many years enjoyed teaching sciences to secondary school students.

I love nurturing a sense of wonder in students of all ages, fostering their appreciation of wildlife, and encouraging life-long learning and care for the natural world.



Amrita Kamath

Amrita is a PhD candidate and sessional lecturer at Deakin University, whose area of interest is senior biology education. Her career began as a genetics researcher, after which she worked as secondary science teacher and coordinator in Thailand and India, before relocating to Australia and transitioning into educational research. Her qualifications include M.Teach (Australia), M.Ed (U.S.A), M.Sc, B.Ed and B.Sc (India).



Lesley Hughes

Lesley is Distinguished Professor of Biology and Pro Vice-Chancellor (Research Integrity & Development) at Macquarie University. Her principal research interest has been the impacts of climate change on species and ecosystems and the implications for conservation. She is a former Lead Author in the IPCC's 4th and 5th Assessment Report, a former federal Climate Commissioner and now a Councillor with the Climate Council of Australia.



Maria James

Maria James is the Curriculum Manager for Science for Years Foundation-12 with the Victorian Curriculum and Assessment Authority, overseeing curriculum for Chemistry, Environmental Science and Physics. She holds a Masters degree in Education (Curriculum) and has written a number of textbooks for Junior Science and Senior Chemistry courses. Maria has held a variety of positions in several independent schools, including Head of Science, Dean of Students and Head of Senior College. She is passionate about motivating and engaging students with science, and in encouraging them to take action in local and global contexts.

Hugh Latimer

Chief Assessor, Independent Consultant



Georgia Lumb

Georgia is just entering her seventh year as a secondary science teacher at Canterbury Girls Secondary College. She is also the Staff Morale Coordinator and runs the Volleyball Program. She absolutely loves teaching and is particularly passionate about senior biology and girls education.



Jennifer Mansfield

Jennifer is a science teacher educator in the Faculty of Education, Monash University. Jennifer's passion for science and science education has seen her work as a scientist and secondary school science teacher before transitioning into pre-service teacher education. Her research interests include the development of teachers' professional knowledge of practice and the development of teachers understanding and attitudes about science education, in particular science as a human endeavour and the nature of science.



Jorja McKinnon

Jorja has taught in the field of Environmental Education for the past 17 years. Currently she works with Environment Education Victoria and also has teaching and research roles with Deakin University



Sarah Moore

Sarah is a VCE Environmental Science teacher with a background in zoology, water education and STEM/STEAM. She is passionate about community networking, including developing industry partnerships and enjoys supporting other teachers.



Julie Mulholland

Julie is an Education Officer from Australia's Nuclear Science and Technology Organisation (ANSTO). She is a highly experienced science educator, having over 30 years of experience teaching science, senior chemistry and senior physics in NSW high schools, as well as 14 years as a Head Teacher Science. In 2013, she achieved a NSW Education and Communities Minister's award for excellence in teaching. Julie is instrumental in developing ANSTO's data set resources for high school students.



Megan Munsie

Professor Megan Munsie is a developmental biologist who leads a research program into the ethical, legal and social implications of stem cell research at the University of Melbourne. Over the last 15 years, she has led public education and policy activities for a series of major Australian Government funded programs in stem cell science and currently heads Stem Cells Australia, an online education initiative that provides information to Australians curious about stem cells and their role in medicine. She serves on advisory committees to peak national and international bodies and is internationally recognised for her contribution to the field.



Bridget Murphy

Bridget has a background in biological science research and science education at secondary and tertiary levels. Bridget is the Education Manager at the ANSTO Discovery Centre and is responsible for developing and delivering new programs for high school students and professional development for secondary teachers.



Tania O'Brien

I currently teach VCE Biology and have done so for 20 years at my School. Previous Head of Science, I am currently Curriculum Coordinator. I have also worked as an exam assessor. As a science teacher, I am very interested in implementing scientifically backed strategies for my students.



Sacha O'Connor-Price

She has led and developed Science curriculum in Catholic, Independent and government sectors. She was a member of the VCAA review panel for the new Biology Study design and an experienced VCAA assessor. Sacha is also a contributing author for the new Jacaranda Unit 1 and 2 VCE Biology textbook and regularly present revision lectures for TSSM and is passionate about engaging students in biology and developing life long learners.



Xenia Papas

Xenia is a Biology teacher with more than 30 years' experience. She has taught across all sectors of the Victorian education system, including time with the Zoo Education Service and Museum Victoria. She has held leadership roles within the Department of Education's Gifted Education Unit as well as Head of Year and Head of Biology for many years in schools.



Claire Priestley

Growing up on a farm, I spent my childhood immersed in nature, surrounded by Australian fauna and flora. My sense of appreciation, awe and affinity with the natural world has remained a constant and I am passionate about igniting wonder and curiosity in others.

My career path has seen me work in a broad range of environmental and educational settings.

I really enjoy empowering students to make a difference in their environment and advocate for a sustainable future. I feel fortunate to work in education at Melbourne Zoo where I frequently witness the passionate, innovative and creative minds of students.



Rebecca Russell-Saunders

Rebecca is an experienced teacher with a demonstrated history of working in the Independent school sector. She is skilled in curriculum design and implementation.

Rebecca is passionate about teacher agency and developing teachers in their pedagogical practice. Rebecca has just started a new position at Wesley College after working as the Caulfield Grammar for 11 years, 4 as Head of Department.

Rebecca is the moderator of the VCE Biology Teachers Facebook page.



Helen Silvester

Helen is Director at the STEAM-focused Casey Tech School. She has been an educator for over 20 years and has held Head of Science positions in a number of schools. She was shortlisted for the 2014 and 2017 Prime Minister's Secondary Science Prize for Excellence in Science Teaching in Secondary Schools and was Victoria's representative for the BHP Billiton Science Teachers Awards.

Helen has a wealth of experience writing and reviewing and has been an active participant in the Australian Science Teachers Association (ASTA), Australian School Science Information Support for Teachers and Technicians (ASSIST) and Science Teachers Association Victoria (STAV). Helen has also worked as a researcher at Walter and Eliza Hall Institute and the Royal Children's Hospital



Emma Stevenson

After working as a biology, 7-10 science and mathematics teacher in Melbourne schools for 12 years, Emma Stevenson is now a teacher educator at the Melbourne Graduate School of Education (MGSE). Her primary responsibilities involve preparing biology and science preservice teachers for their future teaching. Emma's research interests include teacher education, science education, and interdisciplinary approaches to teaching and learning, including STEM education.



Jackie Stewart

Jacki has been teaching VCE Psychology for nearly 20 years.

She is passionate about the subject and the training of new Psychology teachers.

Jacki has a long history of mentoring and nurturing graduate teachers and looks forward to sharing her experience with you.



Mary Vamvakas

Mary began her career teaching Science and Biology, having completed a Bachelor of Science and Graduate Diploma of Education at Monash University. Progressing to the position of Head of Science from 2007, her primary responsibilities included staff and curriculum leadership. Maria's roles have enabled her to act as a facilitator in developing students' scientific literacy, critical thinking and passion for science. From 2017 she has been working at Deakin University as a Teaching Associate and Research Assistant and completed a Graduate Certificate in Education Research at Deakin University in 2018, culminating in a Research Paper investigating "Contemporary Science practice in the Classroom". Currently Maria is enrolled as a PhD candidate in the Degree program, Doctor of Philosophy - Education investigating how scientists' practices can be best represented in the classroom.



Peta White

Peta White is a science and environmental education senior lecturer at Deakin University. Peta has worked in classrooms, as a curriculum consultant and manager, and as a teacher educator in several jurisdictions across Canada and Australia. Peta gained her PhD in Saskatchewan, Canada where she focussed on learning to live sustainably which became a platform from which to educate future teachers. Her passion for initial teacher educator, environmental education/academic activist work, and action-orientated methodologies drives her current teaching/research scholarship. Peta's current research interests follows three directions including science and biology education, sustainability, climate change, and environmental education, and collaborative/activist research.



Erin Wilson

Erin Wilson is the Curriculum Manager, STEM for the VCAA. With responsibilities for VCE Biology, VCE Psychology and the Victorian Curriculum F-10 Science, she has a keen interest in engaging students in science and education and developing quality science and STEM curriculum for all learners.



Marika Wong

Marika Wong is the VCE Environmental Science Support Officer with Environment Education Victoria. Her background includes natural resource management and secondary school teaching. She is currently on leave from St. Monica's College, Epping where she teaches Environmental Science, Biology and Geography.