



# VCE Science Teachers Conference Series 2021

## BIOLOGY

15th February 2021

All sessions will be recorded and available to view until late 2021

### Focussed on the Future

#### Welcome to VCE Biology Teachers 2021 Online Conference

This year we have assembled a very exciting, diverse and engaging program with a blend of live and pre-recorded presentations and workshops.

As you can see from the attached synchronous program, we will run seven simultaneous virtual rooms and these will all be accessible on the day via a dedicated Zoom link and we hope that you take advantage of the chat function and ask the presenters many questions to ensure it is interactive.

Highlights include the Keynote Address by Dr Simon Corrie, the VCAA Update by Erin Wilson and Chief Assessors Examination Report by Sarah Quin and Hugh Latimer. We have also added for the first time a new and exciting Discussion Panel which will be chaired by Dr Peta White. This will be conducted as an after school session which hopefully will encourage teachers who cannot join the conference during the day to participate in a conversation concerning some of the big issues in Biology education.

There are also some pre-recorded presentations which you can view at your convenience either before, during or after the conference and offer a great resource.

We would also like to acknowledge and thank our generous exhibitors and sponsors and we encourage you to click on their logos on the interactive wall and learn more about their products and services during the breaks in the program. Some of them will also present a short twenty minute live session or pre-recorded presentation and be available on the day for answering your questions either via the chat function on Zoom or directly via phone or email.

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. (STAV)

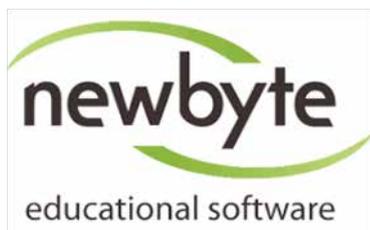
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# Synchronous Sessions

## live on 15th February 2021

**8.45am - 8.50am** Welcome & Housekeeping by Alexandra Abela, STAV President and Keynote Speaker Introduction

**8.50am - 9.40am** Keynote: Dr Simon Corrie, Monash University  
De-mystifying the Covid myths



Simon completed his undergraduate degree in chemical engineering and PhD in physical chemistry at the University of Queensland, before undertaking postdoctoral studies at the HPV Research Laboratory at the University of Washington, Seattle, USA. He completed an ARC DECRA Fellowship in Prof. Mark Kendall's group at the Australian Institute for Bioengineering and Nanotechnology at The University of Queensland. Simon is a chief investigator in the ARC Centre of Excellence in Convergent BioNano Science and Technology. His research interests lie in developing nanoparticles and related biomaterials for applications in biosensing, bioassays and medical devices.

Simon joined the Chemical Engineering Department as a Senior Lecturer in February 2016. He worked in a joint team study which resulted in a world-first ability to detect positive COVID-19 cases using blood samples in about 20 minutes, and identify whether someone has contracted the virus.

**9.40am - 9.50am** Short Break

## Session A 9:50am - 10:35am

**A1 Lisa Moloney, Reconciliation Victoria**

**“Introduction to Aboriginal Perspectives in VCE Biology”**

This session will explore how you can introduce Aboriginal perspectives into VCE Biology. Aboriginal seasons can be used to explore Unit 1 biodiversity, ecosystems and interactions and Unit 2 growth and reproduction. Kinship systems and the significance of Mungo Man and Mungo Lady can be introduced in Unit 4. Victorian place-based resources will be shared.

**A2 Bianca Warnock & Dr Deborah Devis, Sciren Pty Ltd**

**“SHE teaches SHE”**

How do teachers engage students in Science as a Human Endeavour (SHE) tasks in a biology class? What exactly does it mean and how do you keep it relevant? Dr Bianca and Dr Deborah of Sciren will be your link to real scientists, research and concepts that seem mysterious to those not from a research lab. Coming from Plant Biotechnology labs in Adelaide, Sciren will provide teachers a chance to engage with the face of science research and help build your understanding of SHE based knowledge.

**A3 Sacha O'Connor-Price, ST Francis Xavier College**

**“Hands on Activities for Year 12 Biology”**

Modelling processes such as photosynthesis and the lac operon can provide students with a visual representation of chemical 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.

## A4 Michael Kasumovic, UNSW Sydney/Arludo

### “Improving critical and analytical thinking using gamified science experiments”

In this talk, we will use the difference gamified experiments from Arludo to collect and explore data in real time - so make sure you bring your phone so that you can join in the data collection! I will also show you how you can use these games in your class to help get your students thinking scientifically and get them excited about science. This will be a really interactive talk, so come and have fun like your students would!

**DelegateNote:** This presentation is very interactive. Teachers will be using games and collecting data during the workshop. They will also get the opportunity to enroll their students in a research study that will explore the efficacy of the games being used in the workshop. The research study is free.

## A5 Michael O’Brien, Newbyte Educational Software

### “VCE Unit 4, Evolution and DNA Manipulation resources”

Involve your students in the processes on Evolution and DNA manipulation.

This workshop will give you some great practical ideas on how to integrate modern online technologies into your teaching.

You’ll have the chance to use stimulating software developed in Australia for the VCE syllabus. Explore evolution from founder effect to speciation.

Try DNA manipulation with such techniques as PCR and recombinant plasmids as vectors.

You and your students will receive a FREE access to our online content for 4 weeks! No ongoing commitment.

Look for our other workshops at this conference.

**DelegateNote:** Contact Michael at [michaelo@newbyte.com](mailto:michaelo@newbyte.com) to request early FREE access to our online resources.

## A6 Richard Allan, Biozone Learning Media Australia

### “BIOZONE’s NEW 2020 Editions for VCE Biology”

Now in FULL COLOUR, learn how to make the most of the pedagogical innovations that underpin the BIOZONE books. Hear about the 3 new digital versions of our eBooks (LITE, PLUS and Teachers Editions) as well as access to Online Model Answers. New editions for 2021 will also be discussed. Workshop attendees will each be sent FREE print copies and 30-day eBook trials of BIOZONE’s NEW Interim (colour) editions of Biology for VCE Biology - Units 1-4.

## Lightning Session A

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**9.50am - 10:10am**

### A7.1 Luke Sanders, Studyclix

Luke Saunders, Studyclix founder and science and mathematics teacher will give you an overview of Studyclix.com.au, Victoria’s fastest growing study and teaching website. Luke will show you how you can get set up with a free account and use Studyclix to generate exams and quizzes for your classes using official VCE exam questions as well as a range of trial exam questions. If you want to make your life as a teacher easier and your student’s learning experience enriched then don’t miss this presentation!

**5 minute break**

**10.15am - 10:35am**

**A7.2 Tom Holding, Bankfirst**

**At Bank First, we're invested in you.**

Bank First is owned by its customers and exists to financially empower the people who help build better communities. Since 1972, Bank First has helped over 200,000 Australians with their banking needs; from saving for a rainy day, to purchasing their first home and planning for retirement.

Driven by care and compassion, Bank First is committed to providing a better banking experience and putting its customers first.

Visit [bankfirst.com.au](http://bankfirst.com.au) or call 1300 654 822.

**10.35am - 10.50am Morning Tea Break**

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**Session B 10:50am - 11.35am**

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**B1 Annette Williams, Academy of Mary Immaculate and Susan Ryan**

**“Teaching DNA with smarties”**

Teaching the abstract concept of gene expression can be challenging. Teaching this concept modelled in an interactive way by using lolly smarties and jubes to explore the processes of transcription and translation. This session will be completely interactive with you participating in the activity. The requirements for this session are smarties, jubes, plain paper, masking tape and a marking pen.

**B2 Stefano Freguia, The University of Melbourne**

**“A circular economy of nutrients through direct urine bioconversion to fertilisers”**

Establishing the circular economies of the future requires the development of innovative concepts and solutions that will allow for the continuous removal and recovery of valuable resources including nutrients from wastewater so that they can be reused continuously rather than linearly. Urine separation and collection at the source has shown enormous potential to increase the resilience of urban wastewater management, while also providing a route for nutrient recovery for reuse in fertilisers. In this talk, we will explore emerging biotechnologies for the on-site processing of urine to produce fertilisers that are safe, effective and competitive in the existing markets

**B3 Caroline Cotton, Biobrain Learning**

**“Problem Based Learning in the Biology classroom”**

Problem-based learning (PBL) develops higher order thinking skills. Higher order thinking skills are seldom taught, but should be included as part of any curriculum. PBL learning teaches students to develop thinking skills such as the ability to hypothesise, synthesise, analyse, evaluate, and generalise information rather than simply recall it. By solving problems students also have the opportunity to develop critical thinking skills. Come along to this session to learn how to incorporate PBL into your Biology classroom.

**B4 Anna-Leisa Vietz & Gabriela Martinez Ortiz, Agriculture Victoria Research Division**

**“Biology and Digital Technologies in Agricultural Research”**

Careers at AgriBio, the Centre for AgriBioscience are founded on strong interdisciplinary backgrounds in biology, computational biology and molecular sciences such as genomics. The centre is a hub for state-of-the-art capabilities in nucleic acid sequencing, robotics for plant phenomics and ‘super-computing’. These facilities underpin the innovations of the Agriculture Victoria Research Division, which are increasingly relying on both biological understanding and digitally enabled technologies coupled with the ability to manage, analyse and model ‘big data’.

This session will comprise a virtual tour of AgriBio Centre for AgriBioscience in relation to the types of cross-disciplinary 21st century careers that have biosciences at their core. The session will also provide an overview of the free workshops (both remote and in-laboratory) that are available to VCE biology students under the Get into AgSTEM program (formerly known as the Get into Genes program). Get into AgSTEM embeds key knowledge points as outlined in the Biology Study Design, within the context of real-life research and innovation initiatives as undertaken by the Agriculture Victoria Research Division. By showcasing these initiatives to students, workshops consolidate the link between studying science and technology at school with the types of high-tech, cross-disciplinary skills and jobs that are relevant to contemporary and future bioscience research and innovation.

## **B5 Georgia Lumb, Canterbury Girls Secondary College**

### **“Teaching Biology as a Graduate”**

The first few years teaching VCE Biology can be daunting. I would often ask myself questions such as “How do I get through the content while still making the lessons engaging?”. I hope in this session I can offer you some tips on how to create interactive activities and build culture in your Biology classroom while still getting through the content.

## **B6 Richard Allan, Biozone Learning Media Australia**

### **“Human Evolution - Trends, Anomalies & New Discoveries”**

Recent advances (2018-2020) in scientific thinking and modelling of human adaptive radiation. How do the most recent discoveries and scientific data gathering techniques affect how you teach this exciting but challenging topic? This presentation will explore recent advances in scientific thinking and modelling of human adaptive radiation. See how BIOZONE has developed annotated 3D models that allow students to explore early human anatomy on their own devices. Workshop attendees will each receive a copy of the PowerPoint presentation.

## **Lightning Session B**

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**10.50am -11:10am**

## **B7.1 Misal Belvedere and Rebecca Wood, Pearson**

### **“VCE Biology success with the new Heinemann Biology 6th edition”**

The new VCE Biology Study Design requires new ways of thinking, learning and delivering biology key knowledge. The science team at Pearson has worked hard to understand these changes in order to support teachers and learners in achieving VCE Biology success in 2022 and beyond. Building on what teachers love about the last edition of Heinemann Biology, the 6th edition delivers a more seamless teaching and learning experience with rich content that is closely aligned to the new VCE Biology Study Design. Heinemann Biology 6th edition is a one-stop shop for VCE Biology success, preparing students for life as scientifically literate citizens or, should they wish, for careers in STEM-related fields.

Join us for a sneak peek at the new suite of Heinemann Biology resources, developed to support the new VCE Biology Study Design and a life-long love of biology.

**5 minute break**

**11.15am -11:35am**

## **B7.2 Frazer Thorpe, Zoos Victoria**

### **“Zoos Victoria: Fighting Extinction through meaningful data collection and animal observation”**

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

Animals observations and data collection are extremely valuable tools that Zoos Victoria uses to understand each species' unique behaviour, enabling us to provide the highest level of enrichment and welfare to animals in our zoos, while also giving our scientists and conservationists vital insight into ways we can support wild populations.

In this presentation you will become familiar with the various ways in which Zoos Victoria can support VCE Biology teachers, including both classroom resources and outdoor, hands-on and practical excursions that enhance and enrich student understanding and experience. We will describe the opportunities for students to explore topics such as adaptations, interconnections, ecosystems, and how to collect data and carry out meaningful practical investigations. Zoo Victoria's programs, resources and investigations provide an authentic context to support student understanding, scientific thinking, and practical investigation skills.

These inquiries contribute to community science, and together with Zoos Victoria, helps to create a future rich in wildlife.

**11.35am - 11.45am Short Break**

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## **Session C**

**11.45am-12.30pm**

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### **C1 Erin Wilson, VCAA**

#### **“Planning and developing SAC tasks for teachers new to VCE Biology”**

Are you new to teaching VCE Biology? Using other school's SAC tasks, or those from commercial companies, or VCAA past examination questions, to develop your own SAC tasks can often compromise the VCE assessment principles of fairness, balance, equity and efficiency. This workshop will outline common pitfalls in designing SAC tasks as well as providing suggestions and stimulus materials as starting points for the development of tasks that will be unique to each school, thereby avoiding authentication issues. The use of VCAA performance descriptors will also be discussed. Participants will be provided with a SAC task development checklist.

### **C2 Jennifer Mansfield, Monash University, Emma Stevenson, University of Melbourne & Peta White, Deakin University**

#### **“Re-imagining biology education after the remote schooling experience”**

Teachers across Victoria have recently shared the surreal experience of moving teaching and learning into the online space. As we return to face-to-face teaching, teachers of VCE Biology may be wondering how their teaching practices have adapted. What have these online experiences taught us about our biology teaching practices? How might we re-imagine our biology teaching? In this session we will draw on the collaborative wisdom and expertise of participating teachers to reflect on their recent remote learning experiences. Through engagement in collaborative dialogue, we hope to make sense of, and draw conclusions from, these experiences, offering collegial support and insights into the future of student learning in VCE biology.

## **C3 Caroline Cotton, Biobrain Learning**

### **“Biobrain - a Biology learning tool”**

Do you want to discover a new tool to help your students learn and understand Biology? Come to this session to find out about Biobrain, a Biology learning app that helps VCE Biology students master key concepts and test their knowledge with real time feedback on their progress. Students are now be able to learn and revise Biology anytime and anywhere, on their mobile devices. Key Areas of Study are separated into topics and graded over three levels of difficulty. Biobrain uses diagrams and text to illustrate key concepts, and has a variety of question types for students to test their knowledge. Students can also keep track of their scores, review answers, and retake quizzes to ensure full understanding and learning over time. Biobrain’s learning materials include links to an illustrated glossary to assist learning without leaving the screen. All participants will receive a free trial of Biobrain.

## **C4 Monica Ferrie, Genetic Support Network Victoria**

### **“Genomics in Schools- preparing the next generation”**

The genomics era is ushering in new health technologies that are making the diagnosis of a genetic condition quicker and more accurate than ever before. It is clear that personalised medicine is the way of the future. Through diverse experiential learning, Genomics in Schools (GIS), provides students with an understanding of genomics and the implications for one’s own health and/or as a future healthcare professionals through teacher workshops and classroom case-studies. This initiative will explore the functional elements of genomics and its utility in healthcare, with exploration of the ethical, social challenges. GIS aims to prepare the next generation for genomics medicine era.

## **C5 Eleanor Wood, Camberwell Girls Grammar School & Anna Kissane, East Doncaster Secondary College**

### **“Decoding VCE Biology Exams – What’s a command term?”**

Outline... Analyse... Suggest...

Come along to this interactive session with fellow VCE Biology teachers as we explore the language used in VCE Biology exams. A greater understanding of the command words in a question gives students the confidence to answer questions with more certainty and show off how amazing their understanding of the content is. We will collaborate and come up with some practical tips and examples of what each one of these words mean.

## **C6 Eleanor Gregory, Cengage Learning, Taylah Bennett, Monash University, Matt Brinson, Kilvington Grammar & Kim Lowe, Cengage Learning**

### **“Keep your knowledge CRISPR”**

The beginning of 2022 sees the implementation of the new VCAA VCE Biology Study Design at all four units. The new Study Design has had content deleted, new content added and content reordered to remove repetition across areas of study and across Study Designs. A key focus has been placed on scientific investigation as a means of developing, using and demonstrating key science skills. This is reflected in the change in assessment weightings to 50% external exam and 50% coursework.

New content that you will be teaching in 2022 includes the function of the biotechnology tool CRISPR-Cas9 as a genome editing tool. Come along to this session and find out what this is all about. Also have a taster of what is on offer through the Nelson VICscience VCE Biology resource suite and how it can meet all your and your students’ needs in 2022 and beyond.

All participants will receive a complete set of sample material for VICscience Biology VCE Units 1-4.

## Lightning Session C

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**11.45am -12:05pm**

**C7.1 Michael O'Brien, Newbyte Educational Software**

**“VCE Unit 1” Ecology, Hands on Simulations”**

This hands on workshop, will give you some great practical ideas for covering relationships between organisms within an ecosystem as well as methodologies and techniques of primary qualitative and quantitative data collection. During the workshop we will examine several software packages including Food Webs” Australian Woodlands and Rocky Shore Ecology.

**5 minute break**

**12.10pm -12:30pm**

**C7.2 Michael O'Brien, Newbyte Educational Software**

**“VCE Unit 2, Genetics First-Hand Data the Easy Way”**

First-hand data collection in genetics labs will hammer home the understanding required of your students at VCE level and our auto-marking labs, will save you hours of marking.

Using the new Drosophila and Pea Plant Genetics Labs is an effective tool for teaching VCE Biology.

**12.30pm - 1.10pm Lunch Break and Networking**

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## Lightning Session L

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**12.30pm to 12.50pm**

**L1 Russell Comb, Oxford**

**Getting the most out of Oxford Digital**

How digital-savvy is your classroom? After a challenging year of remote learning, students are utilising digital resources to an unprecedented degree. This interactive workshop will showcase how you can support and engage your students using the Oxford Digital platform. This session will also showcase innovative new Oxford Digital features including Quizlet quizzes and Markbook functionality.

**12.50pm to 1.10pm**

**L2 Kelly Hollis, Education Perfect**

**“Using EP Science to Track Student Performance”**

Education Perfect allows teachers to closely track student performance in both independent learning situations and in formative and summative assessment scenarios. EP provides a quick and easy way for teachers to monitor students as they work through lessons or to gather unparalleled data on student performance using the secure EP Assessment platform. In this session we will explore how teachers can use EP to achieve all of these things with minimal time and effort.

### **VCAA Update 1.10pm - 1.55pm**

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**Erin Wilson, VCAA**

**“VCAA Biology Update”**

What a year 2020 was for Victorian students and teachers! Bushfires, a global pandemic plus the usual curriculum and assessment challenges that students and teachers face. The revised VCE Biology Study Design is now accredited for 2022-2026. This update will focus on some of the main issues and themes from 2020 and how they relate to the delivery of VCE Biology in 2021 and beyond.

### **1.55pm - 2.05pm Short Break**

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### **Chief Assessors 2.05pm - 3.05pm**

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**“Sarah Quin, Independent Education Consultant & Hugh Latimer, Independent Consultant**

The Biology Chief Assessors for the 2020 Examination will present key points arising from the VCE 2020 Biology Examination.

### **3.05pm - 3.30pm Afternoon Tea Break and Networking**

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### **Discussion Panel 3.30pm - 5.00pm**

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**The Role of VCE Biology for Preparing Citizens of the Future**

Teachers are invited to join in conversations to consider opportunities afforded by the new VCE Biology Study Design 2022 – 2026. Teachers will be drawing on their expertise in small groups to co-create understandings about challenges and opportunities for developing citizens of the future.

Participants are encouraged to bring their copy of the new study design.

**Facilitators**

**Professor Amanda Berry, Monash University**

**Dr Peta White, Deakin University**

**Dr Jennifer Mansfield, Monash University**

**Emma Stevenson, University of Melbourne**

### **5.00pm Conference Close**

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

# Asynchronous Sessions

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available to view from 8th February 2021

## **Rachel Rutkowski, Methodist Ladies College** **“Targeted Development of Students’ Science Inquiry Skills”**

The development of science inquiry skills is essential for students to understand and appreciate scientific knowledge. Students are required to pose scientific questions, design experiments to test hypotheses, collect and analyse data, and evaluate their findings, skills that require repeated practise and refinement. In this session I will present an overview of our backward design approach for teaching science inquiry skills through investigations across Years 7-12, with a focus on Years 7 and 8. I will also discuss how to collect, collate, and analyse student learning data to target learning and teaching to further develop student inquiry skills.

## **Cambridge University Press** **Simon Maaser, Brighton Grammar School & Tori Shaw** **“Unpacking the NEW VCE Biology Study Design”**

This session explores the interconnectedness between different topics within the NEW Biology curriculum. It will provide strategies for how the curriculum can best be delivered, introducing new concepts in relation to those previously taught and the importance of retrieval practice in consolidating and building on student’s prior knowledge. As part of this session, features of the new Cambridge textbook and digital resources will be unveiled showcasing how they have been specifically designed to guide students (and teachers) through the connected pathway that is VCE Biology. All with an eye on preparing and building the skills required for successful assessment performance.

## **Oxford University Press** **Proudly Supporting Victorian Science Educators**

Oxford University Press is proud to support Science educators in Victoria. For the past decade we have published market-leading Science resources, and we’re just getting started. Learn about how we will continue to support teachers in Victoria with forthcoming resources including Oxford Biology for VCE and new editions of Oxford Science.

## **Studyclix**

### **Kim Lowe, Cengage Learning**

Join Kim Lowe, our Nelson Cengage Senior Sales Consultant, as she introduces you to the new VICScience Biology ecosystem. The VICscience ecosystem was created with teacher and student feedback in mind, and it contains all the resources needed to conquer the new VCE Biology Study Design. Kim walks us through the Student Book, Skills Workbook, and Logbook, and highlights the complimentary digital resources available on NelsonNet. For thorough exam prep, students will love the A+ Biology Revision and Study Guides, and don’t miss the overview of brand-new exam-building platform, exemplis.

# Presenters

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## 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 Allan has an MSc in biology and is founder and CEO of BIOZONE International, an educational publishing house specialising in the publication of instructional materials for high school science programmes. Based in Hamilton, New Zealand, he comes from a science teaching background:

"My passion for creating top quality resources for science learning has its origins in my 11 years experience in teaching science at high school. During this period I developed in-house resources for my own students."

Richard and his team have adapted what he has learned in the classroom to develop a suite of unique resources that meet the very real needs of teachers and students worldwide. He has successfully taken the New Zealand business model overseas to set up sales offices in Australia, the United Kingdom, and the USA.



## Misal Belvedere

Misal Belvedere proudly leads the K-12 Science Portfolio at Pearson. Prior to Pearson, Misal completed a Bachelor of Science (Honours), with majors in microbiology and biochemistry and completed a Graduate Diploma in Education (Secondary). Misal worked as a science teacher and Head of Science in Melbourne for 8 years. Misal's career in publishing spans over 12 years, across both print and digital resources. She is passionate about channeling the shared expertise of the Pearson Science team to support educators and learners. Engaging young people and challenging them to ask questions, develop explanations and design solutions is at the heart of Misal's work.



## Taylah Bennett

Taylah attained a Bachelor of Science with Honours and is currently completing her PhD at the Biomedicine Discovery Institute at Monash University in Melbourne. Taylah was the recipient of the Nairn Prize in 2017, which recognises the top Honours student in the Department of Immunology at Monash University. She has held positions as a Teaching Associate in the Department of Immunology and has previously worked at the Australian Regenerative Medicine Institute (ARMI) and School of Clinical Sciences. Taylah is a member of the Australian and New Zealand Society for Immunology (ASI), the Immunology Group of Victoria (IgV) and has been president of the Monash University Microbiology Postgraduate Society (MUMPS). Her research aims to understand how T cells are controlled to fight viruses and cancer, but can also become pathogenic in situations of autoimmune disease.



### **Amanda (Mandi) Berry**

Amanda is a former secondary science teacher whose interest in students' science learning and the relationship between teaching and learning led her into a career in academia. Amanda's research is directed towards two significant educational issues: the preparation of high quality science teachers and the work and learning of university science teacher educators. Amanda has a strong international profile in the field of science teacher education and is a leading scholar in research on science teachers' pedagogical content knowledge (PCK).

### **Matt Brinson**



### **Russell Comb**

Russell Comb is an Oxford Education Consultant who specialises in OUPANZ's Science resources.



### **Caroline Cotton**

Caroline is an experienced Biology / Chemistry teacher and the founder of Biobrain. Biobrain develops STEM learning apps for VCE Biology, Chemistry and Physics students. Caroline has developed curriculum for the past 20 years in various formats and decided to create the Biobrain learning apps to help students learn and revise key concepts in a format that they are used to interacting with for everything. Caroline also teaches the Masters of Education program, provides revision lectures for students and provides professional learning for Biology teachers.



### **Monica Ferrie**

She is inspired by potential and possibility, for individuals, teams and community. Her work is targeted to discover, facilitate and achieve them both in a number of capacities. She is the GSNV Chief Executive in a part time capacity which allows her to also be the Director of Bold and Brave Consulting and Toilet Training Educators, Treasurer of the Balibo House Trust, Honorary Fellow of Melbourne University and member of the Central Queensland University Regional Engagement Committee. Experience in senior leadership roles in Government, Education, the private sector, international projects, education including a Masters of Business Administration and a commitment to community provide a foundation for making a difference across a range of sectors.



### **Stefano Freguia**

Stefano Freguia is a Senior Lecturer at the University of Melbourne. Italian born, he obtained his PhD in 2008 from the University of Queensland, and later received a fellowship from the Japan Society for the Promotion of Science (JSPS) to undertake his post-doctoral studies at Kyoto University (2008-10). From 2010 to 2019 he was an academic at the Advanced Water Management Centre at the University of Queensland. Stefano's research focuses on the development of novel bioprocesses to transform the waste and water industries, to deliver resilience and flexibility to urban water and wastewater services and infrastructure.



## **Eleanor Gregory**

Eleanor is the Senior Science Publisher at Cengage Learning. She is an experienced Science teacher and was the Education Officer at the Science Teachers' Association of Victoria having previously served on STAV Council as Honorary Secretary and Lab Talk editor. Eleanor has also worked at CSIRO Education as the Victorian CREST Officer.

## **Tom Holding**

Tom Holding is a Relationship Officer with Bank First. His principal role is to visit schools, tertiary institutions, and allied health - in particular their staff and students in order to assist them with their finances and help them achieve their financial goals. Tom looks after the Western region, ranging from inner city suburbs of Melbourne, all the way down to Colac and the Great Ocean Road, visiting both primary and secondary schools.



## **Kelly Hollis**

Kelly Hollis is the Global Head of Science for Education Perfect. She is a qualified Science teacher with a Masters in Educational Technology. Wearing many hats in her role, Kelly is an ambassador for flipped learning and the effective use of technology in the Science Classroom. She wears many hats in her role as an Education Technology expert and has been instrumental in building a strong culture of resource sharing and thought leadership online.



## **Anna Kissane**

Anna has been teaching VCE Biology for longer than she cares to admit. She started assessing VCAA exams when there were still 2 papers/year and paper cuts were part of the gig. She believes in building students' skills from Yr 7 and loves sneaking history, literacy and random facts along the way.



## **Michael Kasumovic**

Michael Kasumovic is an Associate Professor and evolutionary biologist at UNSW researching how technology affects our behaviours. He has developed a company over the last five years that has a mission to improve equity in education and to improve the understanding of how science works. He is also the co-host of a live science show called #BatteryLow.

## **Hugh Latimer**

Chief Assessor



## **Kim Lowe**

Kim Lowe is a senior education consultant for Cengage based in Victoria. Kim has over 15 years' experience working with schools from both a publisher and bookseller perspective. Prior to joining Cengage, Kim worked for Oxford University Press and Champion Education.



### **Georgia Lumb**

Georgia is in her 6th year of teaching VCE Biology at Canterbury Girls' Secondary College. She has a passion for bringing current research into the classroom and engaging girls in Science. Georgia is also a member of STAV Council.

### **Simon Maaser**

Simon has had experience leading and developing Science curriculum within the government and independent school sectors. In addition, he was a member of the VCAA Review Panel for the new Biology Study Design and current Assistant Chief Assessor for the Biology examinations. As current Head of Science at Brighton Grammar School and lead author for the new Cambridge VCE Biology series, to be released in 2021, he has a passion for helping students and teachers to make important cross-content connections within the Biology curriculum.



### **Jennifer Mansfield**

Jennifer Mansfield 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.



### **Lisa Moloney**

Lisa has worked as a Science, Maths, Biology, Agricultural and Horticultural Studies teacher for many years. She spent five years as an Environmental Education Officer with the City of Whitehorse and provided bushland excursions and incursions with preschool, primary and secondary schools and ran bush kinder and nature play sessions. She is currently working at Reconciliation Victoria as their Education Project officer.



### **Michael O'Brien**

A senior Biology/Chemistry teacher for 10 years, Michael established Newbyte Educational Software. Personally developing more than 20 highly interactive educational science programs over the last 30 years. He has also been an international consultant on projects for both the Malaysian and Scottish education departments, involving software design for biology courses.



### **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.

### **Sarah Quin**

Chief Assessor



### **Rachael Rutkowski**

Rachael is a Biology and Chemistry teacher with experience in teaching IB and VCE as well as Years 7-10 Science. During her teaching career she has worked as a classroom teacher and as a specialist science education officer. Prior to teaching she was a science researcher with a PhD in genetics and molecular biology, and my research focussed on understanding the contribution of genetic pathways to cancer development. As a science educator she drew on her passion and experience to make learning authentic and engaging so that all students develop skills in science understanding and thinking.

### **Susan Ryan**

Susan Ryan has taught Biology for many years in secondary, foundation year and tertiary education. Susan is an author with long involvement in writing trial biology exams, along with practical activities and contributing to textbooks. Susan's career included zoo education and specialised laboratory courses. She has worked with many international students, which has given her a comprehensive understanding of the needs of students and requirements to achieve their potential in Biology education.

### **Luke Saunders**

Luke Saunders is a Science and mathematics teacher and is the founder of Studyclix.com.au, Victoria's fastest growing website. Luke is passionate about teaching and learning and believes in the power of technology in helping enrich student's learning.

### **Tori Shaw**

Tori is a regular presenter at STAV Biology conferences and is an author of the Cambridge 7-10 Science series. She has extensive experience as VCAA exam assessor and is an author for the new VCE Biology Cambridge textbook and resource material.

### **Emma Stevenson**

Emma is a Biology teacher educator at the University of Melbourne.



### **Frazer Thorpe**

He was the sort of kid asking, what is that? How does that work? Why does it do that? This curiosity with living things inspired him to attain a PhD in biology. These experiences have deepened his understanding and connection with nature and led him to gain +15 years as a science/STEM teacher and communicator. With our world facing many threats, he has helped students and teachers think about the natural world and how we might act positively for wildlife.



### **Anna-Leisa Vietz**

Anna-Leisa Vietz is the Community Education Manager for the Agriculture Victoria Research Division. Anna-Leisa is responsible for the management of the AgSTEM program and the creation of education material that showcase the digitally enabled research innovations within the division. Anna-Leisa has a diverse background, with qualifications in education, science and the arts. She has also worked as an industrial chemist and run a children's musical entertainment business.

**Bianca Warnock**

Dr Bianca has 5 years experience creating content and delivering interesting and engaging science programs for students- primary, secondary and tertiary. With a PhD in Biotechnology, and a passion for plants and food, Bianca would love to show you how to see the science in your world and make sure you love science as much as she does.

**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.

**Annette Williams**

Annette Williams is an experienced biology teacher, having taught in both secondary and tertiary levels. Annette is a member of the Biology Teacher's Network through which she regularly assists fellow teachers. Annette has an interest in curriculum development and making teaching and learning interactive to allow students and teachers to thrive. Annette has presented at STAV biology conferences previously.

**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.

**Eleanor Wood**

Eleanor is a Head of Science and has been teaching Senior level Biology for the past 14 years (QCE, IB, A-Level and VCE) as well as VCAA Biology Exam Assessing since 2018. She is passionate about setting students up to succeed by giving them the best toolkit available.

**Rebecca Wood**

Rebecca Wood is a Content Developer in the K-12 Science team at Pearson, with 5 years' experience in print and digital publishing. Before joining Pearson, Rebecca completed a Bachelor of Biological Science (Honours), with majors in zoology, genetics and conservation. Rebecca has worked in science education and communication for over 14 years and has had the privilege of working as a science tutor and mentor of primary, secondary and university students, developing their understanding of and curiosity about biology.