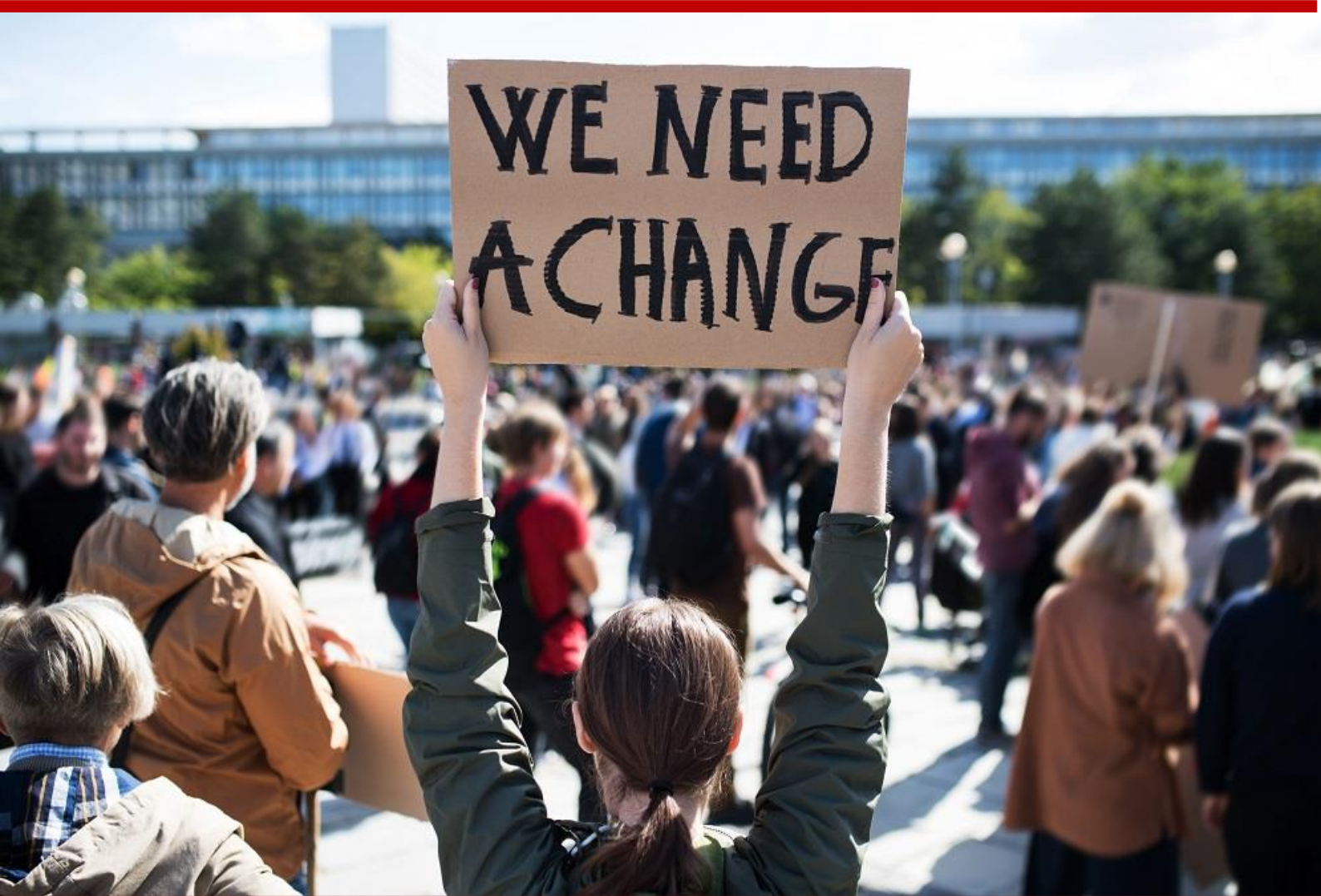


preferred futures



the DATTA Vic annual teachers' conference
2 december 2021 - banyule nillumbik tech school



Conference Welcome



On behalf of DATTA Vic, I'm delighted to welcome you to *Preferred Futures*, the first face-to-face conference we have run since December 2019! It's fantastic that we can now get together to share ideas and discuss issues with our colleagues from throughout the state and beyond. Thanks to all our delegates, presenters, sponsors and trade exhibitors for coming together to make this a very special event, and a special mention goes to our fantastic hosts Banuyle Nillumbik Tech School. We're grateful to have the use of your incredible facilities and the opportunity to work with your team to make this conference happen.

This event offers teachers the chance to explore innovative approaches to curriculum delivery and upskill in new technologies. As well as a wide range of seminars and workshops, we have a professional practice stream, where designers and engineers share their own approaches to creative problem solving.

Our delegates can also choose to attend the second day of our conference – *Makerspace 2021* – which features a series of hands-on masterclasses on a variety of topics, from jewellery making to user-centred design.

Which ever sessions you attend, we're certain you'll return to school with novel ideas, new skills and fresh approaches to teaching.

Travis Burroughs, DATTA Vic President

Conference theme

“Right here, right now is where we draw the line. The world is waking up. And change is coming whether you like it or not.”

In 2019, sixteen-year-old activist Greta Thunberg gave a powerful speech at the United Nations Climate Action Summit about the grave need to stop the effects of climate change. Her actions have inspired a global movement to protect the environment, and it is young people who are leading the charge. An estimated 300,000 demonstrators took part in the Australian *School Strike 4 Climate* – one of the largest protest events in this country's history.

The Design & Technologies curriculum offers young people the unique chance to develop solutions to the issues that affect them. As educators, we can challenge students to consider their preferred future, and to achieve it through generating ethical and innovative design ideas.

This conference celebrates the progressive, vital nature of our learning area, which prepares young people to become the innovators of the future.

Our Keynote Presentation



We are delighted to welcome **Celina Clarke** to deliver the keynote presentation at our conference. Celina is the Chair of the Premier's Design Awards, which in 2021 are celebrating 25 years of honouring the very best of design and innovation in the state of Victoria.

The design sector is a significant contributor to our economy, employing over 85,000 people and generating revenues of over \$5 billion each year. But beyond the money, these awards recognise that design is about finding solutions, practical innovations, and making improvements that address problems or open up possibilities for a better life.

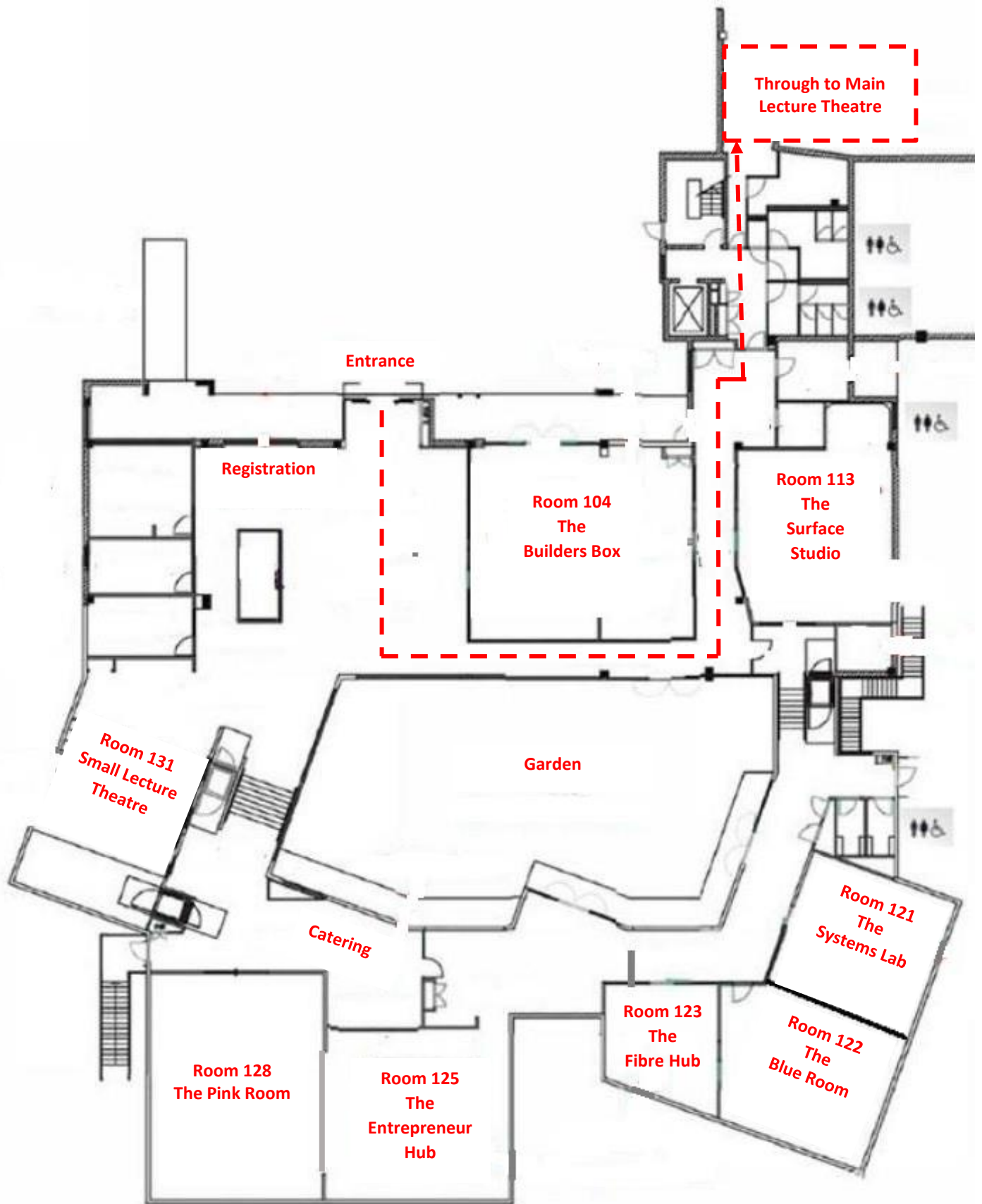
Celina will share the work of the 2021 winners, which include a world-first medical instrument that creates 3D digital images of the human eye to help specialists treat vision impairment, a sustainable fashion initiative which transforms garments destined for landfill into desirable one-off pieces, and hospital PPE made from marine weeds.

The Victorian Premier's Design Awards also recognise design at a senior school level with a special VCE Student Category, which DATTA Vic help to administer. Celina will celebrate the creativity of the winners, whose designs seek to engage purposefully in the process of creating preferred futures for us all.

Conference Timetable

8am – 9am						REGISTRATION AND TRADE EXHIBITION					
9am – 9.30am						PRESIDENT'S WELCOME FROM TRAVIS BURROUGHS					
9.30am – 10.30am						KEYNOTE PRESENTATION BY CELINA CLARKE					
10.30am – 11am						MORNING TEA					
11am – 12 noon						PROFESSIONAL PRACTICE STREAM					
WORKSHOP 1 Emma Luke from RMIT on wearable technology Main Lecture Theatre		WORKSHOP 2 Kate Geck from RMIT on using mixed reality in textiles design Room 131		WORKSHOP 3 Dr Scott Wordley from Monash University on engineering makerspaces & student teams Room 128		WORKSHOP 4 Aaron Powter on design, creativity & technology in engineering education Room 121		WORKSHOP 5 Jo Roskowski & Desiree Riny on the benefits to students of working with designers Room 122		WORKSHOP 6 Dr. Caroline Francis from RMIT on engaging girls in Industrial Design & Engineering Room 113	
12.15pm – 1.15pm						LUNCH					
1.15pm – 2.15pm						WORKSHOP STREAM 1					
WORKSHOP 6 Community Action STEM Projects at Footscray High School by Tim Beare Room 131		WORKSHOP 7 First nations food & fibre by the Royal Botanic Gardens Vic Room 128		WORKSHOP 8 Surviving as an out-of-field teacher in Design & Technologies by Lauren Jacobs Room 121		WORKSHOP 9 3D printing for students with ID and ASD by Andy Ding Room 133		WORKSHOP 10 Rethink Recycling with Matt Card Room 122		WORKSHOP 11 The Memphis furniture project – Introduction to prototyping & Tinkercad by Anthony Bacon Room 104	
2.30pm – 3.30pm						WORKSHOP STREAM 2					
WORKSHOP 12 Learning D&T without the box by Annalisa Buyks Room 131		WORKSHOP 13 Introduction to millinery by Angela Rando Room 128		WORKSHOP 14 Encourage failure as success in Systems Engineering by Chris Simpson Room 121		WORKSHOP 15 Game-based learning– Mini Melbourne Minecraft by Lauren Arkley & Bronwyn Stuckey Room 133		WORKSHOP 16 Teaching preferred futures in Design & Technologies by Peter Murphy Room 122		WORKSHOP 17 Getting started with CNC machines by Ben McKenzie Room 104	

Conference Map



Workshop Descriptions

Professional Practice Stream - 11am – 12 noon



This session is supported by RMIT and introduces delegates to the professional practice of designers and engineers from industry and the tertiary sector.



Workshop 1

Wearable technology with Emma Luke, RMIT

Emma Luke is a designer and researcher currently completing a PHD focused on aesthetics and wearable technology. Passionate about elegant interventions that challenge digital obsolescence, she has an extensive design background traversing watches, bags, jewellery and wearables. She is currently involved in a series of multifaceted wearable technology research projects, focused on intuitive IOT interventions for health and wellbeing.



Workshop 2

Using mixed reality in textiles design with Kate Geck, RMIT

Kate Geck is an artist who works with code and textiles to create interactive surfaces and immersive spaces. She has exhibited in Australia, Hong Kong, North America and Europe with awards and commissions from a number of Australian arts organisations. She is an Industry Fellow in Interior Design at RMIT, and collaborates with diverse creative organisations such as Artful Dodgers, Signal Arts, Polyglot Theatre, 100 Stories, Charcoal Lane and Fog Theatre.



Workshop 3

Engineering makerspaces and student teams with Dr. Scott Wordley, Monash University

Dr Scott Wordley will explore the maker capabilities that are becoming available to engineering students at university. He'll share the types of super-curricular projects and competitions where young people develop hands-on skills and the ability to solve real world problems. He'll share a variety of parts that his students have manufactured for their projects and class assessments.



Workshop 4

Design, creativity & technology in engineering education with Aaron Powter

Aaron Powter is a Melbourne based YouTuber, engineer, mechanic, maker and teacher, who is passionate about educating young people in essential STEM skills. He creates videos showcasing all things engineering, including machining, fabrication, welding, CAD-CAM, CNC, RC helicopters, robotics, vintage tractors, machinery and even the occasional motorcycle.



Workshop 5

The benefits to students of working with designers with Desiree Riny & Jo Roskowski

Partnerships between schools and practitioners offer students the unique opportunity to experience the world of professional design in the classroom. In this session, you'll hear from **Desiree Riny**, an industrial designer who worked on a real furniture design project with Year 10 students through the RAV Creative Workers in Schools program. Desiree will be joined by artist and educator **Jo Roskowski**, who will highlight how Textiles students can benefit from experiencing the work of practising designers.



Workshop 6

Engaging girls in industrial design and engineering by Dr. Caroline Francis

Dr Caroline Francis is the Industrial Design Program Manager at RMIT. She is an established Consumer Product Design professional with over 20 years of industry experience and over 8 years of academic education. She has supported industrial design development projects for Australian, American and Asian markets. She has managed, some of Australia's leading design consultancies including successfully leading the establishment of a design office in Hong Kong. Caroline is a strong advocate for engaging women in the industrial design sector.

Workshop Descriptions

Workshop stream 1 - 1.15pm – 2.15pm

WORKSHOP 6

Community Action STEM projects at Footscray High School with Tim Beare

With many more young people becoming concerned about Climate Change, Community Action STEAM Projects can provide real world experiences for students to address some of the climate change issues we all face in the future. At Footscray High School, Year 9 students select from 3 themed **Community Action programs**. The programs run all day on a Friday for one semester and they each address some of the Capabilities from the Vic curriculum – Civics & Citizenship, Sustainability and STEAM. Projects include a wind farm, a sustainable tiny house, a Precious Plastic plant, a chicken coop and bee hive chimneys.

Tim Beare initially trained as an electrician, but then went to Newcastle University and completed a B.Ed in Industrial Arts. He recently completed a Post Graduate Certificate in STEM Education at Deakin University. Tim has vast teaching experience in the Design & Tech and STEAM fields in a variety of settings including the UK, NSW, ACT & Victoria. Tim is currently the STEAM Learning Specialist at Footscray High School, teaching 7 - 10 STEAM programs as well as VCE Product Design & Technology.

WORKSHOP 7

First Nations food & fibre with Lenka Vanderboom

Victoria boasts our Nation's most diverse collection of landscapes and ecosystems, many of them originally cared for by First Peoples using ancient knowledge systems and practices. Join Royal Botanic Gardens Victoria Indigenous Learning Facilitator Lenka Vanderboom as she explores Traditional Owners' design and technologies in the maintenance of food systems and the sustainable production of fibre, medicine, and tools. She will also share the wide range of education experiences offered by RBGV suitable for Design & Technologies classes.

Royal Botanic Gardens Victoria educator Lenka Vanderboom grew up on her Yawuru homelands in the Kimberley and is now based in Victoria where, among a range of creative positions, she works at the RBGV specialising in engaging Victorian students, and the public in general, in nature-based learning experiences through First Nations' content, history and culture.

WORKSHOP 8

Surviving as an out-of-field Design & Technologies teacher with Lauren Jacobs

Victoria is facing a critical shortage of qualified Design & Technologies teachers. This means that for many schools, the curriculum is delivered by out of area teachers. Join Lauren Jacobs in this small-group forum where you'll discuss strategies to ensure D&T is taught in a safe, innovative and engaging way.

Lauren Jacobs teaches Product Design at Northcote High School. She has been in education for 15 years, teaching in a variety of faculties including Science, Math, Physical Education and Design and Technologies Her passion for innovation and creativity has led her to explore and absorb all things Design. She has thrown herself into every opportunity possible to upskill and better her knowledge and capabilities within STEM and Design Thinking with a particular interest in Biomimicry Innovation.

WORKSHOP 9

3D printing for students with Intellectual Disabilities and Autism Spectrum Disorder with Hau Ong Ding

3D printing provides an opportunity for students to dive into the world of new technologies and advanced manufacturing processes in the STEM Industry. This workshop explores ways to plan and individualise the learning experiences in 3D printing for students with an intellectual disability (ID) and autism spectrum disorder (ASD). Strategies and tips will be shared on how to develop and embed resources into lessons for students to collaborate and engage creatively and independently in the design and printing process.

Hau Ong (Andy) Ding is the Art and Technology Teacher at Berendale School, which caters for students with an intellectual disability in Years 7-12. Hau Ong has a strong interest in mobilising communities for children and young people with a disability to access new technologies. He believes in fostering connections and amplifying learner and teacher agency to support students to develop their interests and skills in pursuing a lifelong engagement in STEM. Outside of school, Hau Ong can be found volunteering, geeking out on emerging technologies, and in his studio experimenting and devising new works for his next exhibition.

Workshop Descriptions

WORKSHOP 10

Rethink Recycling with Mathew Card

Plastic has silently become a major problem over decades of misuse, and Rethink Recycling Co-Op (RRC) is looking for new ways to tackle the crisis. A not-for-profit cooperative, RRC focuses on connecting small businesses, providing hands-on educational programs on sustainability and circularity, and supporting the community in recycled plastic processing and product remanufacturing; with an effort to drive overall community innovation. Join this session with Mat to see how your school can get involved.

Mathew Card is the Founder and President of Rethink Recycling Co-Op. He established his own manufacturing company, but grew disappointed from the lack of readily available recycled raw materials. To solve this issue, Mat built his own micro-processing machines, inspired by Precious Plastic, so that he could have a steady stream of his own recycled materials to use in his manufacturing business. Mat saw the same problems throughout industry, which drove him to find like-minded individuals and businesses. Thus, Rethink Recycling Co-op was born; a collaboration of community members and organisations who have come together with the aim of driving national change in the waste and sustainability sectors. Rethink Recycling Co-op is currently developing a school program focusing on the plastic waste crisis and building a circular economy.

WORKSHOP 11

The Memphis furniture project – Introduction to prototyping & Tinkercad with Anthony Bacon

Join Anthony in this hands-on workshop which explores CAD, prototyping and a historic design movement. This Design & Technologies unit takes the Memphis Group as its inspiration - an Italian design and architecture collective founded by Ettore Sottsass in 1980 which produced furniture, lighting and fabrics. Anthony will explore Tinkercad as a great way to engage students in Computer-aided Design and demonstrate how prototyping allows them to refine their design ideas.

Anthony formally trained as an Industrial Designer. He has been working in education for the past 20 years, teaching Design to students from Year 7 to 12. His background in design also includes expertise in furniture design, CAD/CAM and materials technologies in timber, metals and plastics.

Workshop stream 2 – 2.30pm – 3.30pm

WORKSHOP 12

Learning D&T without the box with Annalisa Buyks

Have a Design & Technology class, but not quite the full qualifications? How can you inspire students to be innovative and creative? What are ways teachers who may not have had initial technology teacher training but are currently teaching the D&T curriculum in secondary schools deliver and engage students in the Victorian Curriculum? What are some ways to creatively and innovatively teach D&T without the use of usual machinery and power tools whilst employing strategies of STEAM, Industrial Design and 3D Imagery/Printing?

Annalisa is Head of Arts and Technology at Ashwood High School. She has been a teacher of Arts, Design, Food Studies and Health for 6 Years. Annalisa is passionate about creativity, innovation and the reason behind why we as humans create, make and design.

WORKSHOP 13

Introduction to millinery with Angela Rando

Join Angela Rando in this hands-on professional learning workshop for teachers. She will offer participants a practical introduction to the craft of millinery, demonstrating the skills used in the design and production of headwear, as well as in the development of unique fashion and textile designs.

Angela Rando is a secondary school teacher with over 19 years of experience working with students in Years 7 to 12. She is an experienced VET fashion trainer, delivering the Certificates II and III VET Applied Fashion and Design Technology at Ripponlea Institute. Angela is currently the Creative Arts Co-Ordinator at OLSH Bentleigh and is always looking to improve and enhance textiles teaching.

Workshop Descriptions

WORKSHOP 14

Encourage failure as success in Systems Engineering with Chris Simpson

For teachers of Systems Engineering - Join Chris Simpson as he explores the design process as a means to get students to accept failure as part of their design and how it can be used to for stronger concepts to develop.

Chris moved to Australia in 1999 and began a career in Medical Instrumentation and research, which re-invigorated his passion for electronics and design. Following this, he moved into education, working in various support roles before undertaking his DipEd and becoming a Design & Technologies & Systems Engineering teacher. He now works at Braemar College. He feels very passionate about all of the things that Design and Technologies can offer students that are not available anywhere else in school, with a really strong pull into Engineering.

WORKSHOP 15

Game-based learning– Mini Melbourne Minecraft by Lauren Arkley & Dr. Bronwyn Stuckey

The Department of Education and Training and the Metro Tunnel Project have collaborated to create the Mini Melbourne world, rendering the city of Melbourne in exquisite Minecraft detail. It has been built primarily as an educational resource that will enable students to learn more about Melbourne and Victoria's past, present and future. Any Minecraft user can download the public version of Mini Melbourne for free and start exploring. The Minecraft: Education Edition (Minecraft: EE) versions of Mini Melbourne support a range of classroom activities, including some fantastic opportunities for design-based learning programs. Join Lauren and Bron to find out how you can make use of this incredible resource for teaching Design and Technologies.

Lauren Arkley is a Senior Project Officer in the Digital Learning Services Unit at the Department of Education and Training Victoria. Lauren is an experienced primary school teacher is leading the implementation of Minecraft: Education Edition across Victorian government schools.

Bron Stuckey has been engaged in educational community and gameful practices in learning development for the past 15 years. She has worked to explore virtual worlds, games in learning and how we can cultivate identity, agency, citizenship, leadership, and community. She is a postdoctoral research fellow of the Arizona State University Center for Games & Impact and is a leader in the field of gamification for cultivation of community and identity. As a global Minecraft mentor and for that past 10 years has consulted to Departments of Education, Health and Transport on ways Minecraft in particular can enhance their community outreach and educational agendas. Her overriding drive is to understand how games support learning and cultivate community for learners of all ages.

WORKSHOP 16

Teaching preferred futures in Design & Technologies with Peter Murphy

What does “preferred futures” mean and why is it the key concept for progressive Design and Technologies education? Discover new approaches and support available to out of field teachers and those looking to develop the creative problem solvers of the future.

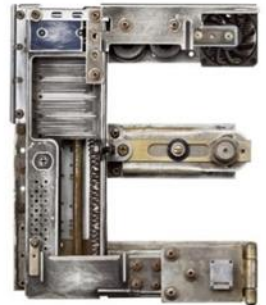
Peter is a former president of the Design and Technologies Teacher's Association of Australia (DATTA Australia) and DATTA Vic and has been a leader in Design and Technologies education for over 10 years. He has worked in Technologies and STEM leadership roles in the Catholic and Government education sectors and now lectures in Technologies education at La Trobe and Southern Cross Universities. He also lectures in Industrial Design at RMIT University. Peter has also worked extensively with VCAA and ACARA over the years on state and national curriculum including as a writer of the current VCE Product Design and Technology study design. Peter founded Design and Technologies Week in Australia and national competitions “So You Think You Can Design” and “TECx” (Technologies Education Challenge). He also helped to establish the Victorian Premier's Design award for VCE Product Design and Technologies and was a judge for the Prime Minister's Prizes for Science.

WORKSHOP 17

Getting started with CNC machines by Ben McKenzie

Computer Numerical Control (CNC) is the automated control of machining tools such as drills, lathes, mills and plasma cutters by means of a computer. Using CNC in the Technologies classroom introduces students to some of the new and emerging technologies that underpin most modern manufacturing. Join Ben McKenzie in this hands-on workshop as he covers all you need to know to get started teaching CNC technology, and explores some successful classroom design projects that he has delivered with his students.

Ben McKenzie the Design & Technology Coordinator at Emmanuel College in Warrnambool. He has a background in Prosthetics & Orthotics along with dairy farming. Ben returned to teaching design in the last couple of years. Check out his work at www.facebook.com/DesCreTec/



the DATTA Vic hands-on conference for teachers
3 december 2021 - banyule nillumbik tech school



Conference Welcome



DATTA Vic welcomes you to **Makerspace 2021** at Banyule Nillumbik Tech School – the second day of our annual conference. **Makerspace** will explore teaching applied STEM, creative problem-solving in the classroom and design-based learning, as well as celebrating the joy of making!

Delegates will discover best practice in new technologies, fresh approaches to teaching and learning and inspiring classroom projects through a range of hands-on up-skilling masterclasses.

There's also a chance to experience the latest tools, machinery, devices, and education resources in our Trade Exhibition, which will offer hands-on demonstrations and information sessions throughout the morning.

We are glad that you can join us at this very special end-of-year event, where you can upskill, discover, network, and share ideas and issues with your colleagues from across the state and beyond.

We hope our delegates also choose to attend the first day of the conference – *Preferred Futures* – which features an exciting keynote address from Celina Clarke, the Chair of the Premier's Design Awards, professional practice talks by designers and engineers and a series of hands-on workshops by expert educators.

Travis Burroughs, DATTA Vic President

Our Keynote Presentation



While the keynote presentation on day one of our conference features the Chair of the Premier's Design Awards, today, it celebrates the winners!

We're delighted to be joined by **Hannah Gough** (pictured above left), who took out the top prize in the VCE Student Design Category at the awards, and **Millicent Meldrum**, (Pictured above right) who was highly commended. Both young women were also chosen to exhibit at Top Designs 2020.

Hannah is an ex-Carey Grammar School student who produced the *Lotus Bag* for VCE Product Design & Technology in response to the ongoing challenge of homelessness and poverty-stricken populations. It aims to provide a means to generate income from waste materials. The Lotus Bag includes a bottle-cutting tool and a set of instructions that detail how to create a bag using woven recycled bottles, which can then be sold for a profit. Through encouraging the reuse of plastic Hannah also touches on the important issue of waste and pollution.

Millicent studied VCE PD&T at Toorak College, and created the *Beauty Brace* for her final year project. Her aim was to design a back brace for users with scoliosis that was both fashionable and comfortable, unlike most others available today.

Hannah and Millicent will discuss how they developed their own unique, creative solutions to real world problems, and explore their own journeys to success at VCE and beyond.

Conference Timetable

8am – 9.am REGISTRATION AND TRADE EXHIBITION					
.9.am – 9.15am PRESIDENT'S WELCOME FROM TRAVIS BURROUGHS					
9.15am – 10.15am KEYNOTE PRESENTATION BY HANNAH GOUGH AND MILLICENT MELDRUM					
10.15am – 11.15am TRADE DISPLAYS AND DEMONSTRATIONS					
11.15am –11.45am MORNING TEA					
11.45am – 1.15pm MASTERCLASSES PART 1					
MASTERCLASS 1 STEM on the move with Colin Chapman Meet at Registration	MASTERCLASS 2 <i>Stories in Silver</i> jewellery making with Sarah Kellet Room 104	MASTERCLASS 3 TECHstyles wearable technology masterclass with Karen Wunsch Room 128	MASTERCLASS 4 Assistive Technology Makeathon for people living with disabilities with TOM: Melbourne Room 122	MASTERCLASS 5 Getting started with Arduino – the simple way with Pat McMahon Room 121	MASTERCLASS 6 Engineering drawing masterclass with Anthony Gasson Room 113
1.15pm – 2pm LUNCH					
2pm – 3.30pm MASTERCLASSES PART 2					



MASTERCLASS DESCRIPTIONS

Masterclass 1

STEM on the move with Colin Chapman Meet at the Registration Desk



We know that movement can be an effective cognitive strategy to strengthen learning, improve memory and retrieval, and enhance learner motivation and morale. Join Colin Chapman and discover how to run STEM and Systems Engineering programs that get students out from behind the desk and on the move! You'll participate in a range of activities that take place anywhere but the classroom, so come prepared with sturdy shoes and clothes for all weathers!
PLEASE BRING YOUR LAPTOP – ANY SOFTWARE WILL BE EMAILED TO PARTICIPANTS PRIOR TO THE SESSION

Colin Chapman was trained in Physics and has a keen interest in Physics, Mathematics, robotics, engineering, sport and sewing. He has taught Mathematics, Physics, Systems Engineering and Chemistry in both the International Baccalaureate Diploma Programme and VCE. After spending four years developing and teaching programmes in Switzerland where he won a Google RISE Award as the curricula and pedagogical leader of Robotics. He returned to Australia to teach and in 2020, was the recipient of the Foster Adem Leadership in Technologies Education Award.

Masterclass 2

Stories in Silver jewellery making with Sarah Kellet Room 104



In this hands-on workshop, you'll learn how to make a piece of silver jewellery, but through the process, you'll also explore your relationship with the environment and the different connections in your lives that shape you. You will learn how to use saw frames to cut and saw-pierce the sterling silver, hand files to add definition and add emery paper finishes to the metal. Participants will also use different pliers to turn-up rings and hand make a catch for the back of the pendants.

Sarah Kellett is a second-generation goldsmith learning the tried-and-true practices of handmaking timeless jewellery from her father Graeme Kellett. She is a member of 'The Gold and Silversmiths Guild of Australia' and has a Bachelor of Education (Visual Arts) from Melbourne University.

Photo credit: www.kellettmasterjewellers.com/about-us

Masterclass 3

TECHstyles wearable technology masterclass with Banyule Nillumbik Tech School Room 128



The wearable technology revolution is underway, and it's changing the way we interact with the world around us. From health and fitness to fashion, our lives are benefitting from advances in material fabrication for flexible electronics, coupled with the availability of smaller power sources. Join the Banyule Nillumbik Tech School (BNTS) STEM Communication Team in this hands-on masterclass exploring ideas for teaching wearable tech in the classroom. You'll try out digital design, sewing circuits and 3D printing with fabric.

PLEASE BRING YOUR LAPTOP – ANY SOFTWARE WILL BE EMAILED TO PARTICIPANTS PRIOR TO THE SESSION

Karen Wunsch is a STEM Communication Officer at BNTS. She loves that her job at the Tech School allows her to use her experience as a Tiger Shark, Dugong & Turtle wrangler, Tropical Marine Biologist, and High school Science, Maths & Biology teacher, to connect people to the environment through technology. She is passionate about helping people acquire industry standard Tech skills, STEM careers and having fun whilst learning. Her superpower is learning technology through epic failure.

Before coming to work at the Tech School as a STEM Communication Officer, Emma Arnold worked as a Research and Development Chemist in the detergent industry. She studied chemistry at university and loves learning about new and upcoming technologies. She has an interest in all things fibre related as she has been knitting for over 10 years and sewing for the last 3 years. Being based at a fibre tech school has allowed her to experiment with fibre further and explore new areas.

After 'running away' with the Questacon Science Circus in 2019, Jen Squires came to the Tech School with a new found passion for engaging people in STEM using fun, hands on, ways. She loves combining her unique career experiences - including medicinal chemistry research, fitness and dance instruction, science communication and my own custom dance costume business – with new technologies and new ways of getting others involved and excited about all the things the Tech School offers.

MASTERCLASS DESCRIPTIONS

Masterclass 4

**Assistive Technology Makeathon for people living with disabilities with TOM: Melbourne
Room 122**

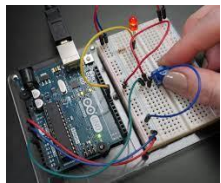


Participate in TOM@Schools makeathon, a custom-built, user-centred design workshop for Years 5-10 classes which explores disability awareness and prototyping. You'll discover how to engage a more diverse cohort of students in STEM by raising awareness of the real-world applications of Design & Technologies to solve challenges for people with a disability. The session builds empathy, team working and communication skills as well as design thinking and hands-on prototyping abilities – all essential skills for the future of work in Australia.

TOM: Melbourne create and build products that improve the lives of people with a disability, where there is no obvious or current solution in the market. They work with people with a disability who have a specific need and connect them with a diverse group of professionals, including engineers, industrial designers, health professionals and tradespeople. Together, they design and build products that solve a complex problem and improve the everyday life of the user. Recent prototypes include robotic arms, powered crutches, wheelchair wheel cleaners and bespoke exercise machines.

Masterclass 5

**Getting started with Arduino, the simple way with Pat McMahon
Room 121**



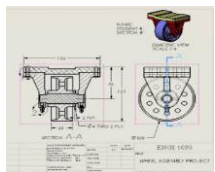
This masterclass will introduce participants to Arduino – an open-source electronics platform, where single-board microcontrollers and kits are used to build digital devices. Pat McMahon will take you through a range of projects, including LEDs, push-button switches, sounders, potentiometers, and ultra-sonic sensors. You'll discuss the applications for this technology in the classroom, and identify new ways to engage your students in STEM. For more information on this session, download the [information sheet](#).

PLEASE BRING YOUR LAPTOP – ANY SOFTWARE WILL BE EMAILED TO PARTICIPANTS PRIOR TO THE SESSION

After 50 years of teaching, Pat McMahon has retired, but remains committed to helping Technologies teachers achieve excellence in the classroom. Throughout his career, he has helped over 3,000 students build microcontroller projects, and has run workshops for over 700 teachers Pat has been fortunate to have shown his students work overseas and has received various International, Australian State and Territory awards. In 2018, he was awarded an Honorary Lifetime Membership of DATTA Vic in recognition for his outstanding service to the Technologies learning area.

Masterclass 6

**Engineering drawing masterclass with Anthony Gasson
Room 113**



Join Anthony Gasson from the Banyule Nillumbik Tech School for this hands-on masterclass on Engineering Drawing. You will explore international standards for technical drawing, first learning to create an orthographic drawing using traditional methods, then using CAD software SolidWorks learn to create an orthographic drawing based on a digital 3D model. This is an invaluable session for teachers of VCE Systems Engineering.

Anthony is a Technologies Teacher who is passionate about engaging students with hands-on practical activities. From Automotive to Metalworking, and Robotics to Systems Engineering, he has worked with his classes to improve their confidence in problem-solving and encouraged them to push their skills to the next level. Anthony is currently the Learning Technologist with Banyule Nillumbik Tech School.

About the Conference

Register for the Conference at www.datta.vic.edu.au

Conference Venue

The DATTA Vic 2021 conference is being held at **Banyule Nillumbik Tech School**, 61 Civic Drive, Greensborough VIC 3088.



The Banyule Nillumbik Tech School is part of the Victorian government Tech Schools initiative to move school education into the future. They develop and run specialist STEAM programs and activities that help prepare local students for the challenges of the future and the changing nature of work. Their programs are designed in partnership with community, industry, and schools in response to key challenges facing the local community.

Teachers deliver their programs both within partner schools and at the Tech School alongside our staff, utilising our cutting-edge facilities, equipment, and expertise.

DATTA Vic wish to thank Marc Blanks, Anthony Gasson and the fantastic BNTS team for generously hosting our event and for their help in planning and running the conference.

Presenters

A huge thank you goes to all of our keynote and masterclass presenters for giving up their time and for sharing their skills and knowledge. We are so grateful for your contribution.

Trade Exhibitors

All trade exhibitors are located in the public areas throughout the Tech School. During the morning, they will be offering hands-on demonstration of their latest products and services. A *Conference Trader Listing* will be included in this program for further details of our sponsors, trade exhibitors and advertisers.

Masterclasses

All our Masterclass sessions have limited numbers – please book early to ensure your first choice. Also, please make sure you note if you are required to bring your own materials, laptops, or tablets.

Pricing for Makerspace 2021

DATTA Vic Member: \$290
Non-Member: \$390*
Student/CRT: \$90

If delegates are registering for both *Preferred Futures* on December 2 and *Makerspace 2021* on December 3, the prices are:

DATTA Vic Member: \$390
Non-Member: \$490*
Student/CRT: \$130

**Includes a DATTA Vic Individual Membership for 2022*

Cancellations

DATTA Vic will refund the full fee, less an administration cost, if you cancel 7 or more working days before a workshop, seminar, or conference and 50% of the fee if you cancel 1 to 7 days prior to the event. If you register but do not attend without cancelling prior to an event you will be charged the full fee unless a medical certificate is provided.

Disclaimer

Delegates must read our [Terms & Conditions](#) prior to registering. DATTA Vic will not accept liability for damage or loss of any nature sustained by participants, suppliers, agents, contractors, consultants, or their accompanying persons, to their personal property as a result of the DATTA Vic 2021 conference, Trade Show, or any related events.

This program is correct at the time of printing and subject to change without notice. Please accept our apologies for any inconvenience caused. Notice of cancelled sessions will be circulated to registered delegates as soon as practical.

Enquiries

Contact Laura at pl@datta.vic.edu.au if you have any questions about the DATTA Vic 2021 conference. For all invoicing enquiries, contact Emma on admin@datta.vic.edu.au.