



# ANNUAL REPORT 2020

CENTRE FOR LEARNING, RESEARCH AND INNOVATION



## About Us

The Centre for Learning, Research & Innovation (CLRI) is a joint venture between The Geelong College, Deakin University and The Geelong College Foundation. It serves students, parents, teachers and the broader community.

The Centre is not run from a single building. It is a hub for ideas, projects and events. It's a core group of thinking, investigating people with a passion for learning. We engage in research projects and create professional development opportunities, by recognising learning as an active, dynamic behaviour that emerges from interactions between the human brain and the social world. We are committed to understanding the science of learning and the art of teaching.

## From the Director

Despite the unusual year amid Covid challenges, the CLRI has continued striving to support learners and educators, both within our community and beyond. We have made progress in our 2019-2020 Strategic Priorities, even though many of our planned events were postponed or reimaged this year. Of particular note has been our achievements in the following priority areas;

### 1. Develop a culture of learning informed by current advances in educational practice.

- Our College-wide Learning Culture Project has as its goal to foster a courageous culture around learning, underpinned by shared aspirations and resilience in learning. This year we have been shaping strategies to develop a shared understanding and language around learning across Early Learning to Year 12, as well as exploring new ways to track student growth and celebrate achievements.
- The Geelong College Vision for Learning has been refreshed this year, with the inclusion of a Learner Profile. This profile identifies those learner attributes we seek to develop as a College, from our very youngest students to our graduating Year 12s.

### 2. Encourage and engage in research, reflection and thinking that results in a greater understanding of learning.

- Our Year 9 Cognizance Research Project is an ongoing partnership with



Independent Schools Victoria. We are exploring the ways in which teaching students about neuroscience, the principles of memory and metacognition might help students to become more agile, self-aware and autonomous learners. You can read about the work and the results in this report.

- Our Neuroscientist in Residence, Dr Jared Cooney Horvath, is working with teachers to explore neuroscientific principles of learning. Teachers are undertaking micro-projects to experiment in their own classrooms with these principles and their own teacher practice.

### 3. To align communications and marketing to maximise community engagement.

- We have launched a new CLRI website this year ([www.clri.com.au](http://www.clri.com.au)), providing easy access to information about our projects, upcoming events, reports of

past activity and a range of associated resources. We have also launched a new podcast series, In Conversation, with relaxed but informative interviews with thought leaders and practitioners. We will continue adding to the podcasts in the months ahead.

Recent months in Victoria have presented us with a range of new challenges. Sadly, we were forced to cancel or postpone almost all our onsite events for this year, including our incredible event with Emeritus Professor Dylan William. We are hopeful that many of these events can be rescheduled in the near future.

We hope you enjoy reading about some of the activities of the CLRI this year. We thank you for your interest in our work and look forward to warmly inviting you to events in 2021.

**Emily FitzSimons**

*Director of the Centre for Learning, Research and Innovation*



## CLRI's New Website

During Term 3 of 2020, The Centre for Learning, Research and Innovation was excited to launch their new website, [www.clri.com.au](http://www.clri.com.au)

The site has been refreshed to allow us to share news and resources with the community. It will continue to provide a platform for promoting events, reporting on the work of the College, and engaging with the wider community.

### The new site will have the same features as before, plus a few new ones. Including;

- A Resources page to house a range of topical and helpful resources, connected to our events and projects;
- A Projects page to capture the ongoing work in our key projects, such as our Neuroscientist in Residence program.
- A News page with links to interesting videos, articles or interviews.

## Podcasts

One of the main new features of the website is the Podcast page. With Covid-19 arising and our planned events having to be postponed, we have been working on podcast interviews, the first of which are now available on the website.



- Our Director, Emily FitzSimons interviewed Dr Jared Cooney Horvath. They talk about the intersection of cognitive neuroscience and the role of the teacher. They discuss the links – and gaps – between educational research and the classroom, as well as topics such as cognitive processing and computers.
- Joan Gill, Director of Student Wellbeing, interviews Dr Helen Street. They discuss the risk of serious mental illness in youth and that wellbeing programs in schools are gaining more importance.
- Emily FitzSimons and Simon Young (The Geelong College, Head of Senior School) were approached to participate in a conversation with 50 school leaders in the United States. The school principals and district superintendents from the state of Wisconsin were keen to hear from a leading Australian school about our experiences with Remote Learning and Covid-19 throughout this year. As the US prepared for their new academic year in September, planning around Covid was front of mind for them. During the interview, they speak about safety and hygiene measures, assisting staff through the transition to remote learning, communicating with our community and other operational topics.
- Senior School Leader of Learning, Melissa Barnes, interviews two Senior School Teachers, Alastair Smith and Therese Foley to celebrate World Teachers' Day. The conversation explores their careers and reflections on how the role of a teacher has changed over time.
- Senior School Leader of Learning Melissa Barnes asks Professor of Molecular Oncology Susan Ramus about her life-saving research into ovarian cancer, the challenges and successes of scientific research and the importance of gender balance in STEM subjects and careers for women in Science.

**Listen to these Podcasts here**  
[www.clri.com.au/podcasts](http://www.clri.com.au/podcasts)





# Neuroscientist In Residence

## Residency Launch Event

Our relationship with Dr Jared Cooney Horvath began in 2019, where we partnered with Independent Schools Victoria on the Cognizance Research Project. Our entire Year 9 cohort had the privilege of spending four sessions with Dr Jared, learning about the operation of their brains.

At the beginning of this year we proudly launched our Neuroscientist in Residence program, welcoming back Dr Jared to The Geelong College. We launched his residency in February of 2020 in front of 150 staff, parents and students.

At the launch, Dr Jared delivered an address titled, "You and your 21st Century Brain". He explored a range of ideas and research relevant to how we process information and how we learn. The audience were put through their cognitive paces with a number of challenge problems, and were also prompted to think a great deal about the role of technology in our lives.

## What will this Neuroscientist in Residence program look like for us?

Over the next two years Dr Jared will be;

- Working with Year 9s, again through the Cognizance Research Project;
- Delivering follow-up workshops for Year 10;
- Introducing Years 11 and 12 to a range of learning strategies;

- Working with staff right across the College on classroom practice;
- Contributing to our collective knowledge as a community through public addresses and written articles.

We are very excited to bring this residency to you. Our work with Dr Jared has already attracted local media attention, with a feature article appearing in the GT Education Supplement in May of this year.



### Staff Development: Foundations of Learning

On Monday 5 October, all College teaching staff joined with Dr Jared Cooney Horvath to explore brain-based Foundations of Learning.

The wholly online event began with a keynote introducing staff to the basics of brain function, and of our developing understanding about how the human brain acquires and uses knowledge. As the very foundation of the learning process, this information is crucial to our role as teachers.

We then moved into smaller groups to discuss the ten "Principals of Learning" from Dr Jared's latest book, Stop Talking; Start Influencing. These included such principals as the role of stress in learning, the relationship between language and pictures, memory and practising of skills.

The session concluded with Dr Jared's challenge to teachers – to conduct micro-projects in their own classrooms, using the principals we've begun exploring. It was a terrific period of learning, sharing across campuses and thinking about the future of our practice.

Throughout 2021 we will continue to learn with Dr Jared and foster our College understanding of this important area.

Here is a reflection from one of the participating teachers, Alice Claringbold (Middle School Drama Teacher and Coordinator):

*The Professional Development with Dr Jared Cooney Horvath helped me understand the brain and how it processes information.*

*A quote came to mind when he was introducing the topic: "A mind that is stretched by new experiences can never go back to old dimensions". I now have more tricks up my sleeve to help my students use their memory better.*

*My study chapter was the use of storytelling; and as a primary teacher, a mother of young children and a performing arts teacher I could relate to the article.*

*It was reassuring to me that some of the approaches I use are scientifically-proven to help with understanding. A lot of what Jared talked about resonated with me as a teacher and learner and I was absolutely fascinated with his work. I would now like to read his book.*

### 2020 Year 9 Cognizance Research Project

For the second year, The Geelong College partnered with Independent Schools Victoria (ISV) to see students learning about their own brain function, metacognition and the fascinating world of neuroscience.

The Research Project is a collaboration between ISV and renowned educational neuroscientist and Harvard University graduate, Dr Jared Cooney Horvath (PhD, MEd).

At the crossroads between the laboratory and the classroom, Dr Jared spends much of his time working directly with schools and other organisations. Dr Jared has a PhD in Cognitive Neuroscience from the University of Melbourne and a Masters in Mind, Brain and Education from Harvard University. He has worked as a teacher, curriculum developer, brain researcher, and is currently an educational researcher at the Melbourne Graduate School of Education.

Our Year 9 student cohort had the privilege of participating in a number of workshops with Dr Jared throughout Terms 2 and 3.

Early-mid adolescence is a time of significant development in the human brain. Year 9 is an ideal time, then, for metacognition training.

As students begin their journey in the Senior School, we believe that it is important to equip them with evidence-based skills to prepare them for their learning in the years ahead. Although we were not able to hold most of the events live this year, the online format enabled students to still hear from Dr Jared, ask him questions, and enjoy learning together in a virtual sense.

The workshops consisted of five 90-minute lessons, facilitated by both Dr Jared and our small team of expert Senior School teachers. These lessons, called Hacking the Brain, enabled the students understand how their brain works and, more importantly, how to leverage this knowledge in their study and life.



The lessons focused on four themes and a follow-up discussion;

**Lesson One:** Get you Mind Right (Stories and Errors)

**Lesson Two:** Master the Hardware (Neuroplasticity)

**Lesson Three:** Gaming the System (Memory)

**Lesson Four:** Owning your Learning (Metacognition)

**Lesson Five:** Follow-up Discussion Session

### How is the research conducted?

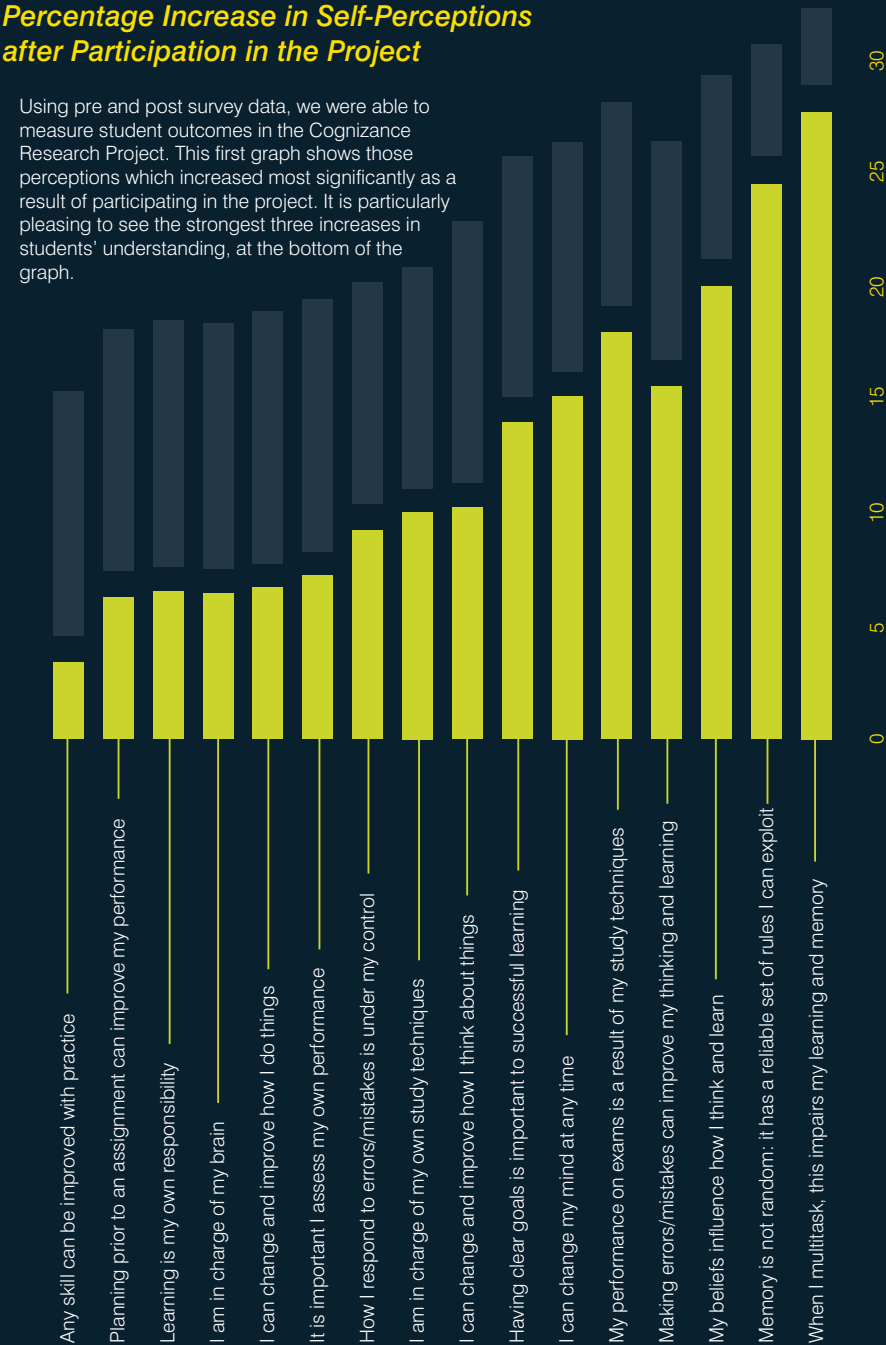
To gauge the effectiveness of this program, ISV and The Geelong College asked students to participate in a 10-15-minute survey taken twice, once prior to the coaching and again once the program is completed. It captured demographic data and student attitudes to learning in several domains.

The analysis looked for any possible changes, trends or patterns in the students' perceptions about how they learn. Teachers involved were similarly asked to respond to pre- and post-survey questions about the program, and whether they feel it is a useful learning tool, helping them to understand and individualise the learning environment.

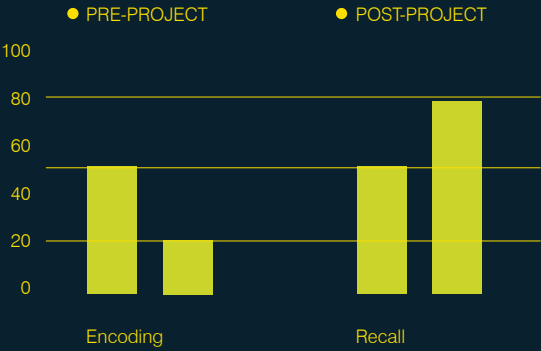


### Percentage Increase in Self-Perceptions after Participation in the Project

Using pre and post survey data, we were able to measure student outcomes in the Cognizance Research Project. This first graph shows those perceptions which increased most significantly as a result of participating in the project. It is particularly pleasing to see the strongest three increases in students' understanding, at the bottom of the graph.



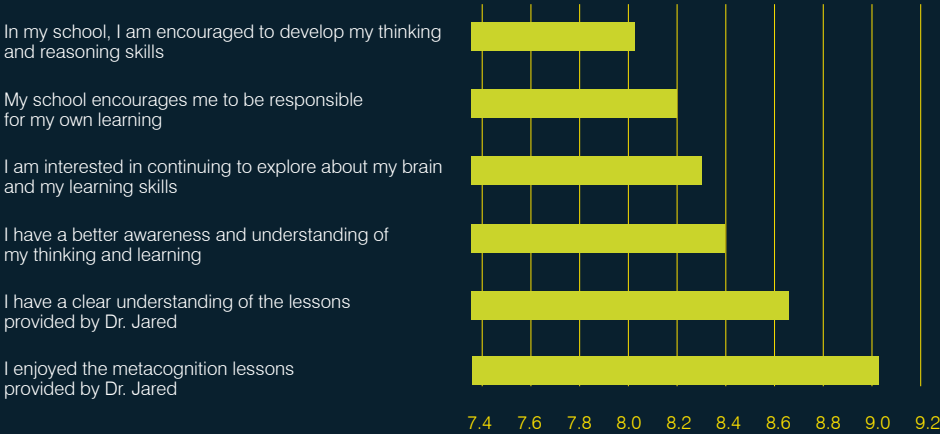
### Percentage Changes in Beliefs Related to Encoding and Recall as Consolidation Strategies



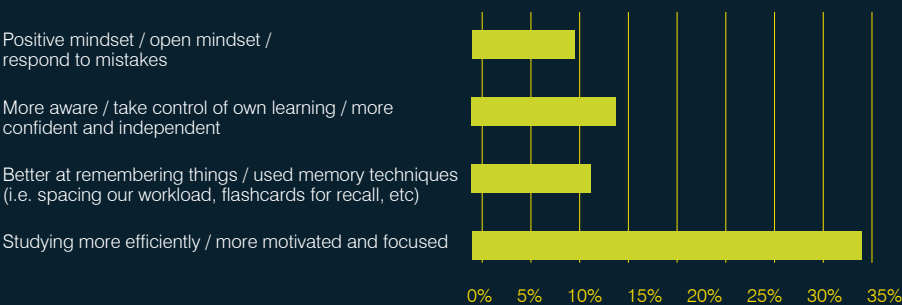
We asked each student which process leads to a deeper and longer lasting memory. Encoding is the way the memory is stored in our minds, whilst recall is how often and under what circumstances we access the memory. Before the program, students thought that it is memory storage that determines its strength, but learning about how our brain does memory led them to understand the power of recall for memories.

These final two graphs show the students' responses to a series of statements about their reflections on the benefits of the program and the greatest gains in their own learning. Not surprisingly, it was their enjoyment of the sessions, and the benefits to their own study that drew the strongest responses.

### Post-Project Reflections (Scale of 10)



### Greatest Changes in Self-Awareness by Proportion of Participants





### Reflections from Project participants

#### Joel Grigsby, Year 9 student

We learnt about many different topics, ranging from something so simple as recall, all the way to something as complicated as neuroplasticity... This project was aimed to teach us how to best learn, not in ways that we've been told for the last 10 or so years, but in ways that none of us had ever heard before, a truly eye-opening experience. The ideas thrown around were quite overwhelming to

I'm sure almost all of us, though our learning was backed up by the booklet we all filled in as the sessions unfolded. The Cognizance project opened my eyes to a whole new aspect of learning and my brain - I drive this tool, not the other way around. The time Jared spent speaking to us, got me thinking about thinking, which in my opinion, is the best kind of thinking one can do.

#### Agnes Roitsas, Year 9 student

When you meet Jared, you understand that he's not your ordinary scientist that maybe a lot of us expected. His enthusiasm is captivating. I came to the realisation that as much as I said I didn't really enjoy science; I didn't want his sessions to be over... We learnt many things over our time with him, things like your brain isn't just one brain...it's a lot of smaller ones, all operated by a coder, that you can either engage in a mistake or avoid it, that stories dictate what you think, see and even hear and that every second of

your life, your brain is constantly changing. We learnt that talent isn't in your genes, and that sleep, a little stress, and recalling rather than re-reading, are key to studying and doing well... Since the sessions with Jared, I've tried to use what I've learnt, including: trying to relax a little during tests, giving myself sufficient time to sleep, trying to engage in my mistakes at school and surprisingly enough... they worked!

### Reflection from Anneliese Hallam, Senior School Religion Teacher

Something that surprised me is how efficiently the brain adapts and changes according to our environment and experiences.

Jared explained that the brain is passive, responsive to what is occurring to it in the moment. This is a radical new way to think about what we know of as the most important instrument for cognitive function. We saw this firsthand when the students put on their perspective-shifting Google Glasses and relearned how to catch and find the ball with a skewed perspective. Within three minutes!

Jared then introduced the concept that so-called 'geniuses' are normal humans who put in an extraordinary amount of work to perfect their craft, including Mozart, Beethoven and Michael Jordan. This demonstrated to us all the potential humans have as learners. Simply hearing this can empower us to take charge when it comes to our own abilities. We are capable of so much more than we know.

As an educator this means that I will be implementing cognitive processes in classes (such as visualisation, positive self-talk, metacognition) to re-familiarise and practise with students these inner processes where we can.

Interestingly, many of the neuroscientific discoveries Jared shared with our students align with ancient spiritual teachings. For example, in prayer, in meditation and in the utilisation of hope.

As a teacher of religion and philosophy I am very grateful we have the opportunity to connect with this cutting-edge science that pushes boundaries of knowledge and transcends our current understanding of what it is to be human.

In a year that has been full of change and the necessity to adapt, it can be comforting to know the brain is made for just that – change and adaption.

## Parent Session: The Teenage Brain!

On July 20 Dr Jared delivered an evening webinar for parents on the topic of the teenage brain. He explained what we currently understand from the world of neuroscience about the composition of the human brain and how it operates.

Through exploring the development of the brain from childhood through to adulthood, Jared considered what happens to the brain during adolescence. Behavioural traits in teenagers such as sleep patterns, emotional

regulation, socialisation and risk-taking all have their origins in neuroscience.

Approximately 50 parents, teachers and guests joined the webinar and were able to ask questions in an open forum at the end. The event's success is enabling us to build upon the wider work Jared is doing with the College.

**Click on the link below to watch the webinar in full: [www.clri.com.au/article/30](http://www.clri.com.au/article/30)**

# Three lessons from COVID-19 by Dr Jared Cooney Horvath

## *“We Plan – God Laughs”*

There is currently a group of people who call themselves ‘futurists.’ Much like Nostradamus, these individuals attempt to predict the future then work to adjust the present in order to match this vision.

As you can guess, a favourite target for these futurists is education. You can’t throw a rock without hitting someone who thinks they understand why ‘school is out of touch’ and how to adjust it to become more ‘future-aligned’.

Despite all the hype, man has never been able to predict the future with any sort of accuracy. Furthermore, any time we begin to

get a handle on things, the Universe always throws a completely unexpected black-swan event our way.

COVID is a case-in-point. There is not a single futurist or progressive educator who saw this coming or could have prepared for the incredible changes it brought about.

Luckily, we often do our best learning by looking backwards rather than by trying to project forwards. For that reason, rather than trying to guess what will come next, let’s take stock of what we’ve learned over the last year.

### **1. Teachers are ridiculously adaptable**

For all the flack they get in some popular realms, teachers are some of the most selfless, hard-working individuals in the world. Now, with the spotlight on distance learning, the world has come to recognize not only how difficult the job of teaching is, but just how passionate and adaptable teachers are. I would love to see this snowball into increased respect, pay, and assurances across education – but who knows.

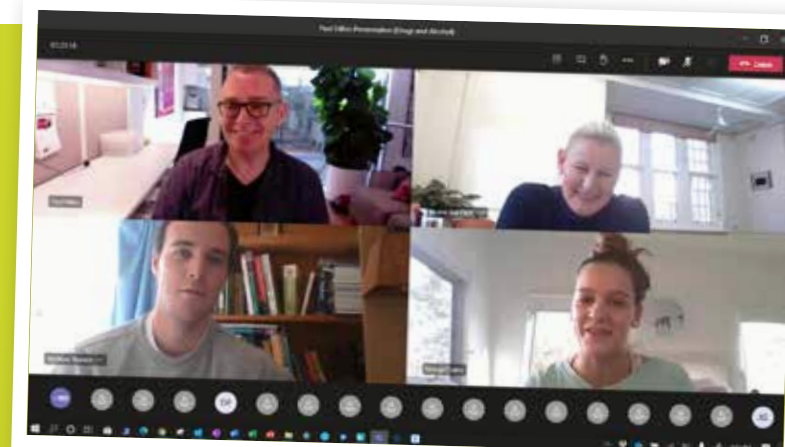
### **2. Learning is everything**

The only truly future-proof skill in the world is metacognition (knowing how to learn). When students don’t know where they’ll be learning, what material they’ll be learning from, or who they’ll be learning with the only constant is deep knowledge

of the learning process itself. This is what we explored with Year 9 students this year: once students recognize and can take agency over the larger patterns of learning, then they can jump between live and digital context with minimal impact.

### **3. Digital ain’t live**

Zoom was fun...for a month. It didn’t take long for teachers and students to recognize that it lacks a clear, meaningful social element – and this was almost universally construed as a negative. When kids are clamouring to get back to the classroom to see their friends, this is a good sign that school and education is not all about learning. In fact, the social aspects might be equally (if not more) important than the academic aspects for most individuals and their evolution.



## Events

### *Developmental Assessment in the Middle School*

“Formative assessment is like when the chef tastes the soup. Summative assessment is when the diners eat the soup. So, formative assessment is like us as teachers tasting the soup, before it is on the table for guests.” (Bronwyn Rylie Jones)

During Term 1 our Middle School teachers began their work with educational consultant, Bronwyn Rylie-Jones. Bronwyn works in the field of teacher education and focuses specifically on evidence-informed classroom practice, quality feedback and assessment design.

During two separate workshops staff have begun to explore the nature of our students as developing learners, considering how teachers might best make the learning process and outcomes clearer to the students. They are asking questions such as;

- What are the fine grain steps in learning?
- How can we make quality more explicit to students?
- How do we determine expectations as a teaching team?

Over the next two years teachers will continue learning together, shaping a contemporary approach to assessment. Our vision is to

not only make the learning more overt in our work with students, but to build assessment-capable learners, who understand where they are headed, where they are currently, and what they need to do next.

Our Middle School leaders will continue learning with Bronwyn in 2021, with a view to further embedding our work throughout the learning programs.

### *An Evening With Paul Dillon*

As part of our TripleR Wellbeing program Paul Dillon’s community evening session, Parenting Post COVID, was particularly tailored to the context of his Victorian audience. Namely, he targeted families in lockdown and the strain this has places on family dynamics, especially parents of year 12 students.

Paul builds up important trust with his audience and his concern for the wellbeing of young people resonated with parents. By accepting that young people can never be immune from risk, his messages around drug taking and risky behaviour are always timely, too.

With over 80 attendees’ parents were very appreciative of his timely advice; one parent expressing her “profound thanks” for the session.





### ***Pre-Service Teachers: Helping The Next Generation Of Educators***

Every year across the three schools, The Geelong College teachers take on a supervising and mentoring roll to teaching students from some of the leading universities.

Pre-Service teachers undertake a range of tasks, including teaching, class planning, observing, reporting and adapting to teaching remotely.

The Geelong College is a sort after school for pre-service teachers, this year we had 16 placements.

- Deakin University 13
- Federation University 1
- Charles Sturt University 1
- University of Melbourne 1

### ***The journey of a teacher at The Geelong College***

***Christie Barrett: Prep A, Level Coordinator,  
incoming 2021 Leader of Learning for Junior School***

Innovation. Confidence. Advocacy. These are the three reasons that stand out to me as integral to the process of supporting a Pre-Service Teacher in their placements. As a mentor I am able to give back in the way so many of my mentor teachers did to me, across these three crucial elements.

Building innovation is something that can only be done by knowing your stuff and knowing it well. Once you have a firm grip on the curriculum, your teaching style, behaviour guidance techniques, classroom management skills, planning and programming sequences and current theory in education you have the ability to begin the weaving dance of a

competent teacher. A mentor has a role in demonstrating this dance to the pre-service teacher, showing what is possible once you have practised all the elements and are beginning to put them together.

It is beyond here that the innovation happens – but a mentor teacher can guide a Pre-service teacher in their professional learning as they try out each skill under the mentor's nurturing eye.

This is where the confidence develops. Even when you know your stuff, as a Pre-Service teacher, putting this together in front of a class of eager students is a completely different thing.

It is very hard to have confidence in something you have never done before. The only way to develop this confidence is to take risks and get outside your comfort zone.

A good pre-service teacher will encourage this and offer the supports to Pre-Service teachers so they can take the reigns and try things that may feel uncomfortable and new.

Being a sounding board for reflective practice after each teaching session is another way I am able to allow Pre-Service teachers to debrief about the hard bits and make a plan for next time. A confident and innovative teacher is then able to be

an advocate for our profession and the importance of progressive education for the best outcomes for children.

If I can demonstrate my advocacy for these things to Pre-Service teachers, I hope they are then able to go on to be the advocates – the strong educational leaders of our future. By being a mentor, I am able to ensure that Pre-Service teachers can continue the important work I have been so invested in for my career – the most high-quality education possible for children – and this is an opportunity I simply cannot turn down.

### **The experience of my placement at The Geelong College**

**Sylvia Fogarty-Phipps: Deakin University student, Master of Applied Learning and Teaching**

Once called student-teachers, students like me studying teaching are now referred to as pre-service teachers. After my 20 days of placement at the Geelong College in August earlier this year, I now understand that teaching is a service to others. From what is taught in the classroom to all the pastoral care that goes on behind the scenes, from house meetings to staff meetings; it is clear that teachers at the Geelong College care about the wellbeing of their students and really get to know them. Relationships are everything.

The first two weeks of placement took place on both the Middle and Senior school campuses. While I was mostly attending Chinese language classes, I also took the opportunity to observe many teachers in different subject areas, as this was my first round of placement. Running around like a bird collecting sticks for my nest, I am grateful for the openness of teachers to respond to my questions and curiosity. The students were also friendly and helpful at

guiding me to my classroom when I was lost between staircases.

The second two weeks of placement saw a shift to remote teaching, due to the COVID-19 pandemic restrictions. It was incredible to see the swift, thoughtful and carefully designed response of the school in this difficult transition. I truly felt for students as they cleaned out their lockers and delved into the challenging world of online learning. The Geelong College had a pre-prepared supportive system in place to respond to student needs as best as they could. While some teachers were confronted with black screens and students refusing to turn their cameras on, my students in Year 9 Chinese were active and engaged, a credit to the relationships my mentor teacher had built with her students previously.

I look forward to continuing to develop my teaching practice with time and would like to again thank the staff at the Geelong College for their words of wisdom.

## Our Team

### **Emily FitzSimons, Director of the CLRI and Director of Teaching and Learning at The Geelong College**

Emily is an educator with over 20 years experience, as both a senior classroom teacher and school leader. She has a particular passion for building learning cultures; teacher and leadership development; and the science of learning and student wellbeing.

### **Nicole Roache, Marketing Manager**

Nicole manages the Centre's marketing and promotional presence, in the media and online. A marketing specialist and copy writer, she learns every day and knows what is happening in the Geelong market.

### **Sam McIntosh, Creative Media & Design**

Sam is the Centre's designer and media producer. A teacher and graphic artist, Sam understands learning, is a genius behind a camera and creates digital experiences with creative flair and insight.

### **Kris Oliver, Administrative Assistant**

Kris is the Centre's Administrative Assistant and brings a wealth of events knowledge and efficiency to the Centre. She is your first point of contact and will inform you about what we can offer students, teachers and the wider community.

## What's Coming In 2021...

**Geelong Design Week** event hosted by The Geelong College.

In an exciting project for 2021, The Geelong College will be hosting an event for Geelong Design Week. On 22 March, we will hold an evening of short talks, a panel and a Q&A in the Keith Humble Centre. Titled The Young Masters: Unpredict-ABLE, the evening will include optional tours of the Austin Grey Centre and Keith Humble Centre for the Performing Arts, as well as networking opportunities.

Unpredict-ABLE celebrates designers responding in moments of surprise or when facing the unexpected. Our host will be renowned leader, Deakin University's Tuba



Kocaturk, Professor of Integral Design and Director of the Mediated Intelligence in Design Research Lab. The Young Masters, all Geelong Old Collegians, have completed a Bachelor or Masters, in creative industries. We'll reflect on the innovation and design thinking emerging when we encounter the unpredictable. Featuring design disciplines including fashion, architecture and visual media, we aim to showcase young local designers and to inspire current or prospective design students.

**Neuroscientist in Residence** will continue, with Dr Jared Cooney Horvath again working with our Year 9 cohort, delivering follow-up sessions with Years 10 and 11, plus working with teaching staff on their classroom practice.

**Bronwyn Ryrrie Jones** will be working with Middle School staff on a program called Responsive Teaching in Action.



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