Connect, Reflect, Recharge!

YDC Sharing Summit program

24–25 October 2016, QUT Kelvin Grove, Brisbane

YuMi Deadly Centre
School of Curriculum, Faculty of Education
Queensland University of Technology
Victoria Park Road, Kelvin Grove
Welcome from YuMi Deadly Centre Director

Professor Tom Cooper

I am delighted to welcome you to the sixth annual YDC Sharing Summit. The program this year features a keynote from Dr Chris Matthews. Chris and I worked together in research projects from 2003 to 2008.

The Goompi (RAMR) Model was conceived from Chris’s ideas when we were working on an Algebra project on Minjerribah (Stradbroke Island). Chris will share more about this in his presentation. I would like to acknowledge and thank Chris for volunteering his time to share his experience and expertise with us.

We have a wonderful range of other presentations to enjoy at the summit. Three of our YuMi Deadly Maths Centre for Excellence schools will be presenting: Kingston and Beenleigh State Schools from Brisbane and Victoria Park State School from Mackay.

I’m pleased to see several high schools in the program this year. We have Dakabin and Harristown State High Schools from the Integrated Secondary Schools project, Kirwan State High from the Townsville cluster of the PRIME Futures project, and Marist College Ashgrove from the YDM Metropolitan project (now completed). We warmly welcome back Pine Rivers State High, who previously presented at the 2013 and 2014 summits and have just started in the Brisbane North cluster of PRIME Futures.

We also welcome back Annandale State School (YDM North Queensland) to present for their fourth year in a row (a stellar achievement), and a warm welcome to first-time presenters Cranbrook State School (PRIME Futures Townsville), Rockville State School (YDM Toowoomba), Springsure State School (PRIME Futures Emerald), Toowoomba West Special School and Gail Williams from the Special Education Curriculum Cluster.

Welcome to the presenters from the other elements of the wider CSIRO Indigenous STEM Education project: Inquiry for Indigenous Science Students (I2S2), the Aboriginal Summer School for Excellence in Technology and Science (ASETS), and the Bachelor of Science Extended program at the University of Melbourne. Thank you for attending the summit to share more about these innovative programs.

Finally, an especially warm welcome to those who have travelled all the way from South Australia to attend the summit. We are looking forward to the rollout of YuMi Deadly Maths to schools in Adelaide and Port Lincoln this term as part of the PRIME Futures project.

I thank you all for attending and now invite you to connect, reflect and recharge at the 2016 YDC Sharing Summit.

Tom Cooper

Welcome to Country Songwoman Maroochy

Dr Chris Matthews

Griffith University and Aboriginal and Torres Strait Islander Mathematics Alliance (ATSIMA)

Dr Chris Matthews is from the Quandamooka people of Minjerribah (Stradbroke Island) in Queensland. Chris has received a PhD in applied mathematics from Griffith University and is a Senior Lecturer at the Griffith School of Environment, Griffith University.

Chris has undertaken numerous research projects within applied mathematics and mathematics education. He was the patron and expert advisor for the Make It Count Project, a large mathematics education project coordinating education research within clusters of schools across Australia with the specific aim of improving mathematics education for Indigenous students.

Currently, Chris is the Chair of the Aboriginal and Torres Strait Islander Mathematics Alliance (ATSIMA) which aims to improve educational outcomes in mathematics for Aboriginal and Torres Strait Islander learners.

Keynote presentation: The story of the Goompi Model

In this presentation, Chris will tell the story of the Goompi Model (also known as the RAMR Model). He will outline how the model was developed and the purpose the model was designed for. He will also provide examples of how he has been using the model to teach Aboriginal learners mathematics. These examples will highlight the ideas behind maths as dance and the maths of growing, as well as some early work with Yirrkala Community School in the Northern Territory.
Crabock State School, PRIME Futures Project
Crabock’s Guaranteed Viable Curriculum
Presenters: Samantha Negra, Amanda McLean
In 2017 Crabock will embark on a new whole school maths curriculum, moving away from C2C assessment in the Number strand to a curriculum based around the five YDM Big Ideas for Number.

CSIRO Indigenous STEM Education Project
Inquiry for Indigenous Science Students (I²S²) and the Aboriginal Summer School for Excellence in Technology and Science (ASSETS)
Presenters: Jesse King, Amanda Baker
The I²S² and ASSETS programs are elements of the broader Indigenous STEM Education Program, funded by BHP Billiton Foundation and delivered by CSIRO. Find out how these programs are increasing student engagement in science and building aspirations towards further study and careers in STEM fields.

The I²S² program focuses on Indigenous students (Years 5–9) in metropolitan and regional schools in a mainstream context and is underpinned by the recognition of the importance of culture and identity in improving educational outcomes for Indigenous students. Indigenous themed, hands-on, science inquiries provide students with the opportunity to conduct open-ended science investigations. The program provides professional development and ongoing support for teachers and each inquiry can be implemented within existing units of work. Jesse will share the story of the Far North Queensland region’s implementation of the program and how your school may be able to become involved with the program into the future.

The ASSETS program is a series of residential summer schools for high-achieving Year 10 Aboriginal and Torres Strait Islander students, followed by an ongoing leadership and support program as students progress through Years 11 and 12. Amanda will share how the program inspires students by combining personal development opportunities, rigorous academic components, and a focus on the interface between Indigenous science knowledges and Western science knowledges.

Harristown State High School, YDM Integrated Secondary Schools Project
Tailoring YuMi Deadly Maths and Accelerated Inclusive Maths to the needs of a challenging secondary school
Presenter: Jane Livingstone (via Zoom videoconferencing)
Our state high school located in Toowoomba faced challenges with regard to mathematics and needed to take action. This presentation will describe the challenges we faced and how the YuMi Deadly Maths (YDM) and Accelerated Inclusive Mathematics (AIM) programs were modified and tailored to meet these challenges. School staff worked together to ensure that different cohorts of students were provided with different materials to meet their needs, including in Years 11 and 12. The effect of the programs on student outcomes will be highlighted and the school’s plan for sustaining change into the future will be outlined.

Kirwan State High School, PRIME Futures Project
YDM – Year 7 at Kirwan SHS
Presenter: Sallie Shepheard
Kirwan SHS has been using YuMi Deadly style activities in a Year 7 learning support class since the start of 2016. It has helped engage students, encourage participation and improve results, by bringing some excitement and fun to maths. This presentation shares the successes and challenges of using a mixture of concrete materials, physical movement and written work to aid long-term retention of mathematical content.

Pine Rivers State High School, PRIME Futures Project
Assessment aligned with ACARA and differentiation/ICPs with YDM
Presenter: Hailey Hoey
Have you ever wondered how you can differentiate for students working at different year levels of the National Curriculum using YDM? How about how to align your exams with ACARA and the different levels your students on ICPs are operating at?

Come and find out how one high school teacher has designed a Foundation Maths program based on YDM principles and ways of teaching to cater to a variety of students with learning difficulties and disabilities. Students in Years 7–9 participating in this program work towards either Year 2, 4 or 6 level in this program covering a range of modules.

Rockville State School, YDM Toowoomba Project
From kitchen to garden: Working together to improve numeracy
Presenters: Vicky Broderick, Lauren Cawthray
Rockville SS is a low socio-economic school with a 50% Indigenous student ratio in inner Toowoomba. In 2015 our Priority School Review highlighted Numeracy as a sharp and narrow focus. As a team we investigated best practice in the area of student achieving and engaging in numeracy activities and improving our low academic achievement in Number across the school. We embarked on the YDM journey and are in the draft stages of implementing an explicit and focused Numeracy Lockdown 3 days a week. Our presentation includes an iMovie displaying Rockville’s fantastic grounds incorporating our Stephanie Alexander kitchen garden which we use to enhance our Numeracy program.

Toowoomba West Special School, YDM Special Schools Project
Shining the spotlight on numeracy through YDM
Presenters: Rachael Doole, Vivian de Almeida
This presentation focuses on working with students accessing a Highly Individualised Curriculum (extended level of the General Capabilities, Australian Curriculum) to identify their numeracy abilities and explicitly teach the next learning step.

Victoria Park State School, YDM Integrated School Mathematics Project and YDM Centre for Excellence
YuMi tried and true
Presenters: Leonie Knuth, Faye Boys
Come along and see some practical YuMi Deadly style Maths activities that will have students out of their seats and actively engaged. We will be sharing some YuMi Maths activities that have been implemented with Year 2 and 3 students at Victoria Park SS, but they can be adapted to suit any year level. If you’re looking for some new ideas for teaching multiplication with groups and arrays, symmetry, comparison of numbers and more, come along and join our session.
# Day 1: Monday 24 October 2016

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<th>Time</th>
<th>Session</th>
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<tr>
<td>8:30–8:50</td>
<td>ARRIVAL AND REGISTRATION – ROOM S308, LEVEL 3, S BLOCK, RING ROAD, QUT KELVIN GROVE</td>
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</tbody>
</table>
| 9:00–9:30  | Welcome and introduction  
Traditional Welcome to Country, Songwoman Maroochy of the Turrbal People  
Welcome from Professor Tania Broadley, Assistant Dean (Teaching and Learning), Faculty of Education |
| 9:30–10:30 | **Keynote address**: Dr Chris Matthews, Senior Lecturer, Griffith School of Environment, Griffith University, and Chair of the Aboriginal and Torres Strait Islander Mathematics Alliance (ATSIMA)  
*The story of the Goompi Model* |
| 10:30–11:00| MORNING TEA – S123, S BLOCK LEVEL 1 OUTDOOR AREA |
| 11:00–11:45| Room S308  
Pine Rivers State High School, PRIME Futures Project  
Assessment aligned with ACARA and differentiation/ICPs with YDM  
Presenter: Hailey Hoey |
| 11:00–11:45| Room S307  
Cranbrook State School, PRIME Futures Project  
*Cranbrook’s Guaranteed Viable Curriculum*  
Presenters: Samantha Negra, Amanda McLean |
| 11:45–12:30| Room S308  
Kirwan State High School, PRIME Futures Project  
YDM – Year 7 at Kirwan SHS  
Presenter: Sallie Shepheard |
| 11:45–12:30| Room S307  
Rockville State School, YDM TICC Project  
*From kitchen to garden: Working together to improve numeracy*  
Presenters: Vicky Broderick, Lauren Cawthray |
| 12:30–13:15| LUNCH – S123, S BLOCK LEVEL 1 OUTDOOR AREA |
| 13:15–14:00| Room S308  
Harristown State High School, YDM ISS Project  
*Tailoring YuMi Deadly Maths and Accelerated Inclusive Maths to the needs of a challenging secondary school*  
Presenter: Jane Livingstone (via Zoom videoconferencing) |
| 13:15–14:00| Room S307  
Victoria Park State School, YDM ISM/NQ Projects and YDM Centre for Excellence  
*YuMi tried and true*  
Presenters: Leonie Knuth, Faye Boys |
| 14:00–14:45| Room S308  
CSIRO Indigenous STEM Education Project  
*Inquiry for Indigenous Science Students (i2S2) and the Aboriginal Summer School for Excellence in Technology and Science (ASSETS)*  
Presenters: Jesse King, Amanda Baker |
| 14:00–14:45| Room S307  
Toowoomba West Special School, YDM Special Schools Project  
*Shining the spotlight on numeracy through YDM*  
Presenters: Rachael Doole, Vivian de Almeida |
| 14:45–15:00| Summary and close of Day One |
| 15:00      | CLOSE OF DAY ONE |
## Day 2: Tuesday 25 October 2016

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<td>Beenleigh State School, YDM Centre for Excellence</td>
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<td>Presenters: YuMi Deadly Centre staff</td>
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<td>Special Education Curriculum Cluster, YDM Special Schools Project</td>
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<td>Presenter: Gail Williams</td>
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<td>14:00–14:45</td>
<td>Kingston State School, YDM Centre for Excellence and PRIME Futures Project</td>
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<td><em>What does YuMi Deadly Maths look like in our classrooms?</em></td>
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<td>Presenters: Andrea Thompson, Karley Taylor</td>
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<td>14:45–15:00</td>
<td>Summary and highlights of YDC Sharing Summit 2016</td>
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<td>15:00</td>
<td>SUMMIT CONCLUSION</td>
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Abstracts: Tuesday

Annandale State School, YDM North Queensland Project

Embracing the RAMR through kinaesthetic activities when teaching number

Presenter: Claire Winterburn

After starting my professional learning about the YDM pedagogy and becoming one of Annandale’s YDM champions, I saw a wider applicability and wanted to use YDM in more than just allocated mathematics time in my classroom. The real-life and kinaesthetic activities became part of my morning rotations, with counting, sorting and informal patterning. I also incorporated whole body and hand activities into other subject areas like Geography; stepping out and creating maps to photograph as well as playing games using the Maths Mat with coordinates and directions.

The YuMi pedagogy reminds me of the importance of starting with real-life applications and kinaesthetic activities to assist students in understanding what they are learning and applying their knowledge to their work.

This presentation will focus on learning about numbers and counting using the RAMR framework for students in primary school.

Beenleigh State School, YDM Centre for Excellence

The renewed journey ...

Presenter: Rob Lonergan

Beenleigh State School has previously been a school that was an early partner in YuMi Deadly Maths. With changes in staff and administration of the school over time and competing imperatives of Education Queensland, the place of YuMi as a philosophy and approach in the practical teaching of mathematics faded. This presentation is about the re-invigorating of YuMi as a vehicle to assist in delivering a dynamic mathematics curriculum that helps address the needs of our clientele. This will be from an administrator’s perspective.

Dakabin State High School, YDM Integrated Secondary Schools Project

Dakabin and YDM – “How we do business”

Presenter: Rhys Holmes

Dakabin has been involved in YDM for many years. How this has evolved over time will be discussed along with the development of strategies used to restructure Maths at Dakabin to incorporate YDM as a focus of “doing Maths”. Further detail as to the effectiveness of this program structure, the development of higher order thinking (HOT) skills using YDM MITI tasks along with unit auditing (aligning to ACARA) will be a focus of the presentation.

Kingston State School, PRIME Futures Project and YDM Centre for Excellence

What does YuMi Deadly Maths look like in our classrooms?

Presenters: Andrea Thompson, Karley Taylor

Kingston State School has been a YuMi Deadly Maths School of Excellence since 2013. During this time our goal has been to build a sustainable change in our staff’s approach to the teaching and learning of Mathematics. In this session, two of our teachers will present what YuMi Deadly Maths looks like in their classrooms and reflect on their professional journey.

Marist College Ashgrove, YDM Metropolitan Project

“We all use mathematics every day”

Presenter: Margaret Canning

Each episode of the TV show Numb3rs begins with:

We all use math every day; to predict weather, to tell time, to handle money.

Math is more than formula or equations; it’s logic, it’s rationality, it’s using your mind to solve the biggest mysteries we know.

Marist College Ashgrove is a Year 5–12 Boys’ Boarding College located in Brisbane. The YuMi AIM program is run to support the educationally challenged students in Year 7 (Sem 2) to Year 9.

Teaching in a secondary school has advantages as the resources of other departments can be utilised for the benefits of the YuMi program. A demonstration of this is the unit Measurement 1 (Length, Mass and Capacity/Volume) where both our Science and Hospitality Departments were incorporated into the learning process.

Special Education Curriculum Cluster, YDM Special Schools Project

Mathematics for learners who require a Highly Individualised Curriculum

Presenter: Gail Williams

In 2014–2015, 12 special schools came together to engage in a two-year contract with the YuMi Deadly Centre for the YuMi Deadly Maths Special Schools Project. A significant part of this project was the development of a resource to support learners who require a Highly Individualised Curriculum. This session will share our journey with a focus on the co-development of the resource Mathematics for learners who require a Highly Individualised Curriculum.

Springsure State School, YDM Central Queensland and PRIME Futures Projects

How can I YuMi this?

Presenter: Rosalie Lucke

Having first been introduced to YDC three years ago, I have since been asking myself with each new math concept – how can I YuMi that? How can I engage my students through the use of their bodies, hands and minds and how can I, as their teacher, look outside the square and traditional worksheets and cut and paste approaches. In this session I will share some of the ideas I have trialled in teaching a Prep classroom how to be “deadly” at math.

University of Melbourne, CSIRO Indigenous STEM Education Project (Bachelor of Science Extended Program)

Transitioning from school to university: A transitional mathematics sequence at the University of Melbourne

Presenter: David Collis

In this presentation, I will present our experiences of establishing a mathematics sequence as part of the Bachelor of Science Extended (BSc Ext) pathway program for Indigenous students at the University of Melbourne. The BSc Ext was established in 2015 as a pathway program to enable Indigenous students to successfully transition into their studies in science and related areas. A core sequence within the BSc Ext consists of two transition subjects, “Foundation Mathematics 1” and “Foundation Mathematics 2”, that are designed to ensure students have the mathematical foundations to thrive within university subjects that require mathematical capacities.
Abstracts: Tuesday

I will present our early experiences in establishing these subjects, and the importance of pedagogical positioning within an overarching transitional curriculum and integrated institutional support structure. This context includes: quality teaching and materials, a coherent course structure, integrated tutoring, and other institutional support from the University of Melbourne’s Indigenous support unit, Murrup Barak.

**Victoria Park State School, YDM Integrated School Mathematics Project and YDM Centre for Excellence**

*Making maths visible in the classroom*

Presenter: Faye Boys

I will share my story of why and how we came to make a conscious effort to display and share students’ Maths learning in every classroom. This then led to teachers YuMifying NAPLAN practice and groups of students sharing their learning.

**YuMi Deadly Centre**

*Research and data at YDC*

Presenters: YuMi Deadly Centre staff

YDC collects and analyses data to inform the effectiveness of YuMi Deadly Maths (YDM). This includes data gathering from project participants about YDM professional development workshops, the implementation of YDM in schools, and student outcomes. This session will provide information on the quantitative and qualitative research undertaken at YDC with the aim to capture and increase the effectiveness of projects for the benefit of teachers, students and schools as a whole.
Summit information

What to bring
You may wish to bring a notebook and a USB memory stick as some presenters will be sharing their resources. Pens, water, morning tea and lunch will be provided.

Morning tea and lunch breaks
Morning tea and lunch on both days will be served in the outdoor area, S123, on Level 1 of S Block.
Please help us to keep the Sharing Summit on time by moving to and from breaks and between sessions as quickly as possible.

Filming the Sharing Summit – image release consent
QUT Audio-Visual services will be filming many of the Sharing Summit sessions. In order to comply with QUT’s ethical requirements, all attendees will need to complete an Image Release Consent Form. These will be provided in your registration packs on arrival and should be completed and returned to the registration desk.

Thanks to Nigel Oorloff, AV Technical Support Officer.

YuMi Deadly Centre staff
Each session of the Sharing Summit will be facilitated by a YDC staff member. As well as these facilitators, YDC administrative staff will be happy to assist you with program and venue queries and anything else you might need to know.

We acknowledge and thank the following staff for their valuable assistance with planning and running the Sharing Summit:
Kim Alexander, Robyn Anderson, Jan Cavanagh, Tom Cooper, Charlotte Cottier, Gillian Farrington, Edlyn Grant, Jim Lowe, Chelsea Meyrick, Chelsey Priddle, Grace Sarra, Lindy Sugars, Alex Stuetz.

What does RAMR stand for?

REALITY
Local knowledge
Prior experience
Kinaesthetic action

ABSTRACTION
RW → patterns
Body → hand → mind
Creativity

REFLECTION
Validation
Application/problems
Extension

MATHEMATICS
Language/symbols
Practice
Connections

Venue and transport information
The building circled in red (S Block) is the location for the Sharing Summit. All sessions will be held in rooms S308 and S307 on the third floor.

Undercover paid parking is available in F Block (accessed off Boundary Road). Outside paid parking is available next to the Sports Oval (accessed via Sports Lane off Herston Road) and in the Rainforest car park between H Block and S Block (accessed via the Ring Road – limited spaces available). For more information about parking at QUT Kelvin Grove Campus, please visit this page.
The QUT Kelvin Grove Busway Station on the Inner Northern Busway is conveniently located next to S Block.

Acknowledgement
In keeping with the spirit of Reconciliation, we acknowledge the Turrbal, Jagera/Yuggera, Kabi Kabi and Jinibara Peoples as the Traditional Owners of the lands where QUT now stands – and recognise that these have always been places of teaching and learning. We wish to pay respect to their Elders – past, present and emerging – and acknowledge the important role Aboriginal and Torres Strait Islander people continue to play within the QUT community. We also acknowledge the Traditional Owners of the lands where our research projects have been and are being conducted.

Contact us
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