



A PARTNER SCHOOL OF  
**THE UNIVERSITY OF SYDNEY**  
 STEM TEACHER  
 ENRICHMENT ACADEMY

**RIVERSIDE**  
 GIRLS HIGH SCHOOL

## Volume I, Issue 1

STEM.....What is it to us?

We are all STEM teachers.

We all teach critical and creative thinking.

We all model and value analysis, evaluation and re-design.

We all value innovation.

We all value endeavour.

We all see greatest engagement when learning for the student is in context, is current, is authentic, is teacher-scaffolded but student driven, is appropriately challenging, is solutions focused, frequently is problem-based and has real world relevance.

STEM is not just an acronym for the 4 castles of 'Science, Info Tech, Engineering and Mathematics'.....

It's a mind and skill set that every discipline within school enhances....

Computational skill or Computer Science in context CS + X CS takes a student's passion for our disciplines and allows them entrepreneurial control. They do not just become specialist boffins who hand over control and their intellectual property IP to others to develop and profit. They drive their own success.

We all see our purpose as setting our students on a successful and meaningful path for their futures.

Tracey Warzecha HT Curriculum [Relieving]

## STEM

*Science  
 Technology  
 Engineering  
 Mathematics*

*... inspiring our students to engage with Science, Technology, Engineering & Mathematics in High School, at University & beyond in future STEM-related careers.*



**Riverside Girls High School teachers graduate from the University of Sydney's STEM Teacher Enrichment Academy 2015**

**Tracey Warzecha: HT Curriculum (Relieving), Lisa Wark: HT Technical and Applied Studies, Angela Mihailou: Information Technology, Brian Hatcher: Mathematics, William Moran: HT Science and Lisa Trapnell: HT Mathematics (Relieving)**

**with Australia's Chief Scientist Professor Ian Chubb and the Hon Ian Macfarlane: Minister for Science & industry**



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**A Brief History of STEM at Riverside Girls**

Invitation to lodge our Expression of Interest for the University of Sydney First STEM Teacher Enrichment Academy in November 2014, arose from HT Curriculum Tracey Warzecha’s links with The Australian Curriculum Studies Association and her presentation at the new Australian Curriculum Conference in Darwin.

Riverside proudly becomes the STEM Academy Partnership School; the only comprehensive girls school selected along with 12 other independent & government schools across state.

RGHS STEM Team forms with HTs Science: William Moran, TAS: Lisa Wark with Angela Mihailou, Mathematics: Lisa Trapnell (relieving) with Brian Hatcher & Curriculum (relieving): Tracey Warzecha. On-campus Workshops & then engaging & innovative program development begins throughout the school ‘holidays’.

Principal Belinda Kelly invited to make the Principal’s Response at the STEM Academy launch in Dec 2015.

*“75% of the fastest growing occupations require STEM skills and knowledge, yet, over the past 20 years, the number of students studying STEM subjects to HSC level has steadily declined”. University of Sydney STEM Teacher Enrichment Academy 2015*

*Our role ...to reverse that trend...*



**Principal Kelly with Vice Chancellor Dr Michael Spence**

STEM projects implemented to enhance students’ learning in problem solving in Year 8 Mathematic, scientific literacy and critical thinking with engagement in simulated virtual worlds in Year 9 Science and in Year 7 & 10 with ICT & IPT classes coding and gaming.



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Our 6 STEM Teachers graduate in the Inaugural Class of 2014-15 at a ceremony addressed by Chief Scientist Ian Chubb & Minister for Industry & Science Ian Macfarlane.

**Tracey Warzecha responds on behalf of the graduates.**

HT Curriculum (relieving) Tracey Warzecha is appointed to University of Sydney's STEM Academy Academic Committee who advise and steer professional learning for STEM teachers and the next Academy intake from across the state.

RGHS's first interdisciplinary STEM project for Year 8 The F.I.T.T. Principle is implemented as a joint collaboration between Science, Mathematics & PE faculties.



**Year 7 exploring Argumentation to find evidence for the Earth tilting on its axis to create seasons.**

Science Department engage in Professional Learning on Argumentation: Enhanced Scientific Literacy.

Riverside Year 10 & 11 STEM-girls attend a Discovering Engineering day to explore career paths and compete in team challenges to build prosthetic limbs, weight-bearing paper towers, robotics & electronic circuits with Careers teacher: Michael Blundell & Physics teacher: David Russell.

**Year 10 student at Discovering Engineering 'trial & error' in constructing a weight bearing paper tower.**





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Year 12 Chemistry and Physics students attend an ANSTO Nuclear reactor excursion at Lucas Heights. Several are considering careers in Nuclear Medicine and Radiography.



HT Science William Moran successfully applies and writes for the Dept of Education funded integrated STEM project. Post-Earth Pioneers is 'launched' as a cross-curricular project across Science, ICT and Mathematics.

*"We need enthusiastic and supported teachers, committed and understanding parents and government collectiveness to improve our overall STEM position."*  
 Professor Ian Chubb,  
 Australia's Chief Scientist





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Whole school engage in Professional Learning workshop Term 3 2015 to support the School Plan 2015-17 Strategic Direction 1: Engaging students for Success Process 1: STEM resulting in great potential for multiple cross faculty, highly collaborative STEM initiatives.

Term 3 2015 HT Technical & Applied Studies: Lisa Wark leads her faculty in professional learning in coding Scratch, Arduino boards and 3-dimensional drawing Sketchup along with Robotics kits kindly donated by our generous and highly supportive P&C.

RGHS hosts a special STEM-focus morning tea for Parents & Carers in Week 4 Term 3, 2015 where student programs and work samples will highlight the Science's faculty STEM focus. A TAS-technology focus will occur in Term 4.

Term 3 Year 10 STEM students will attend a STEM-focus tour of UTS with Principal Kelly. Year 9 students will attend the UNSW L'Oreal-UNESCO For Women in Science program: Girls In Science forum to encourage more young women to enter STEM professions.

Year 9 & 10 STEM-students are now registering for a 5-day residential camp at University of Wollongong for a Women in Engineering Summit in January 2016. Theme days will include Medicine and the Human Body; Renewable Energy and the Natural Environment; Sustainability and the Built Environment; Creativity and Design.

*"If you can't code, you're unemployable"*  
*Jackie Randall Inspiring Australia NSW*



*Riverside Girls proud to be leading STEM Education and opening pathways for our future women of STEM.*