



# 2012 Annual Report

## In this issue

From the chairman

Director's report

Awards & scholarships

QMEA STEM PD Program

VET summary

Regional highlights

Where to next ?

QMEA continues to engage students and teachers across the academy in a range of programs. Highlights include:

- More than 3100 students involved in industry awareness activities, a 43% increase since 2011
- 30% increase in QMEA Vocational Education and Training participation in 2012
- QMEA's partnership with Moranbah State High School recognised through National School Pathways to VET Award at National Training Awards
- Almost 600 teachers involved in professional development activities, an increase of 50% on 2011 participation
- Successful collaboration with industry partners to implement a range of programs

# From the Chairman of the Board



The past year has seen the implementation of more innovative practices and further refinement to a highly skilled workforce in the resources sector. In education, schools looked for genuine industry applications as the Australian Curriculum was implemented. Without doubt, the QMEA has, and will continue to play an important role in building bridges between schools and industry.

The QMEA continues to make the resources sector a real and attainable career pathway for students who have an interest in resources industry careers. Increased levels of participation in 2012 reflect the value students and teachers place on the role the QMEA plays. Through a range of activities, the QMEA has assisted in developing a cohort of literate, well informed students and teachers who are well aware of the impact of the Queensland resources sector on their future employment prospects.

I would like to take this opportunity to acknowledge the foundation and ongoing sponsors of the QMEA. Building on the success of the QMEA to date, 2013 will see the implementation of highly structured, genuine engagement activities for students and teachers from the academy. And the guidance of the QMEA Board and sponsors will be invaluable in ensuring the ongoing success of this partnership.

Michael Roche  
QRC Chief Executive and QMEA Board Chair

## Director's report



As with every year since its inception six years ago, the QMEA experienced in 2012 the continual extension and development of its range of programs and projects across our 34 Queensland schools.

Collaboration with industry and schools has resulted in the successful implementation of these programs and an increase in participation levels.

Approximately 3400 students have taken part in one or more QMEA activity throughout the year, with pleasing levels of engagement and genuine interest displayed. Their teachers have taken up 580 places in teacher professional development activities offered.

The value placed on these opportunities is evident in the number of students and teachers engaging with the QMEA through programs and social media initiatives.

The QMEA will be working with schools and industry in early 2013 to introduce a new model of

operations and staffing to ensure that we sustain and improve upon what is a remarkable, unique and exciting organisation.

The new program will result in significant changes in the way we define, develop and deliver our projects, with an increased emphasis on measurable outcomes for senior students and a renewed focus upon what we do best – connecting schools and students with industry in the classroom and on the work site.

I wish to thank again our schools, sponsors, the Queensland Government and our industry partners for their ongoing support and, in particular the QMEA Board and staff of the Queensland Resources Council for their invaluable guidance.

Roger Atkins  
QMEA Director



# QMEA scholarships and awards

Students and teachers from across the academy participated in a number of QMEA activities. Outstanding achievements were recognised at an awards ceremony held in Brisbane in March 2012.

.....

## Student scholarships

Successful awardees are chosen based on demonstrated interest in a career in minerals and energy, high performance in one or more subjects in the minerals and energy sector, and participation in industry related activities. Scholarships were awarded to the following:

### University Pathways

Bryn Rodhmann (Toolooa State High School)  
Kate Lack (Pittsworth State High School)  
Joshua Madden (Wavell State High School)

### Vocational Education and Training Pathways

Caitlynd Gardner (Spinifex State College)  
Jared Semple (Moura State High School)  
Lachlan Brand (Pioneer State High School)

### Key Teacher Award

This award acknowledges leadership and innovation in the teaching and learning of minerals and energy in and across QMEA schools. The recipient of this award was:  
Mick Nixon (Pioneer State High School)

### Teacher Recognition Awards

Norah Parsons  
(Moura State High School)  
Jo Leschke  
(Bundamba State Secondary College)  
Robyn Flexman  
(Alexandra Hills State High School)  
Heath Chandler  
(Anglican Church Grammar School)



# Science Technology Engineering

QMEA's Science Technology Engineering and Mathematics (STEM) Teacher Professional Development (PD) program, with funding from Skills Queensland, has evolved to offer a number of unique opportunities for teachers in 2012. Aimed at increasing teacher ability and confidence in the delivery of minerals and energy related topics, the suite of programs continues to be well received by teachers.

In addition to the identified needs of schools, there has been a focus on introducing PD in the area of spatial technologies and QMEA is working with a number of interested parties to integrate the teaching of spatial technologies more widely across the curriculum.

Boutique subject areas Engineering Technology and Earth Science became an area of focus as QMEA enabled teacher attendance at the BMA Rock Tour, International Geological Congress (IGC) and Eastern Australian Basin Symposium (EABS) teacher events and a number of regional Teacher Earth Science Education Program workshops. The QMEA also hosted Engineering Technology Control Systems workshops with industry links and context provided by Rio Tinto.

QMEA showcased units developed for robotics at the National Science Teachers' Conference in

Canberra, while laboratory technicians attended the state conference to further develop their skills and support effective science teaching in their school and region.

The QMEA STEM PD program will continue to evolve based on identified areas of need and feedback from schools, participants and industry, under the guidance of the new QMEA Coordinator of STEM Programs, Robyn Flexman.



## The QMEA STEM PD program at a glance

- 30 teachers participated in a two-day workshop introducing spatial technologies
- more than 30 teachers honed their mathematics knowledge at regional day long workshops
- 26 teachers from across the state attended engineering technology professional development
- 11 teachers attended the BMA Rock Tour
- 95 QMEA teachers attended teacher Earth science education program workshops
- almost 60 teachers participated in activities related to the IGC, while 10 were involved in EABS
- introduction to QMEA TPD Program for 18 teachers at new QMEA schools in Gladstone
- 25 teachers completed the QMEA Introduction to Inquiry-Based Science Workshop
- 30 teachers involved in a range of programming and robotics workshops
- 15 teachers attended CY Science PD and then implemented Science Fairs at Tara State College, Wandoan and Taroom State Schools
- four teachers attended the National Science Teachers' Conference in Canberra in July, while eight laboratory technicians attended the state conference in Brisbane
- QSMART implemented in Moranbah and Dysart State High Schools with a resources package developed and supporting PD provided to teachers delivering the subject
- 200 pre-service teachers involved in workshops delivered by QMEA at a number of universities in the south east corner of Queensland.



# Vocational Education and Training

Certificate I Resources  
Infrastructure Operations  
and Equivalent Courses 126 students

Certificate II Resources  
Infrastructure Operations  
and Work Place 50 students

Certificate 2 Water  
Operations and Treatment  
Plant one trainee

Mechanical and Engineering  
Certificates four students

Mechanical Apprenticeship three students



## National award for program

Moranbah State High School has become a beacon for schools looking to innovate and diversify training opportunities for students, following receipt of the coveted School Pathways to VET Award at the National Training Awards.

Moranbah's mission was 'Creating Positive Pathways for Diverse Futures', and the key to their win at the National Training Awards was the Get Set for Work- GEMS program, which caters for at-risk youth in the Central Highlands and the MAST and RIO programs that ensure students are work ready on completion of their senior studies and have the skills that industry is looking for.

Success of the programs is in part due to industry and community support particularly through BMA, Anglo American, QMEA and Arrow Energy as well as local small businesses. The wealth of experience students have access to ensures the success of the programs and its students.

'Special thanks must be given to BMA for their continued support of the programs that we offer. Through the Community Partnership Program as well as the sponsorship of events throughout the year, BMA continues to support our students and have become a key driver in the success of our students,' said QMEA Project Officer, Delaney Nugent.



# Northern Region



Project Officer: Maree Higgins



Programs implemented in the Northern Region in 2012 aimed to maximise curriculum linkages, increase industry awareness and reinforce the range of pathways to a resources sector career.

In addition to a number of Teacher Professional Development workshops in the region in Semester 1, May saw the introduction of the Trades R4 Girls event, which allowed students to gain hands-on experience in a range of non-traditional roles for women including electrical, boiler making, diesel mechanics, auto electrical, radio technology and fitting and turning trades.

Several participants went on to participate in Xstrata's Skills for the Future program - a seven week course facilitated by trade and training professionals from Xstrata, which involved weekly classroom-style lectures and practical trade sessions at Xstrata Skills Centre to gain an insight into career paths in the resources sector.

The annual Xstrata Engineering Camp required participants to collaborate with other students and industry mentors to investigate genuine site problems and propose engineered solutions to invited guests.

The region has benefitted from the ongoing support of Xstrata Copper, BHP Billiton and James Cook University among others.



## The region at a glance

- 45 students, three teachers and 20 industry personnel involved in Trades R4 Girls
- seven Spinifex Junior College students participated in Skills for the Future
- nine Kirwan State High School students completed work experience at Xstrata Copper Mount Isa
- 28 students and six teachers from across the Academy attended the 10 day Xstrata Engineering Camp during June and July
- 40 students and teachers from Cloncurry State School, Spinifex Senior College and Good Shepherd Catholic School participated in the Professional Pathways event in Mount Isa
- 70 students from Kirwan State High School, St Margaret Mary's, Ayr State High School, Burdekin Catholic High School and Shalom Christian College took part in a full day Earth science activity in Townsville
- science and Maths PD at Cloncurry State School attended by 18 teachers.

## Schools

Cloncurry State School  
Kirwan State High School  
Spinifex State College



# Central North Region

Project Officer: Delaney Nugent



The five Central North QMEA schools have been involved in a wide variety of projects during 2012 that have allowed students and teachers to develop a greater awareness of the resources industry across the State.

The range of projects provided participants with an opportunity to learn more about the application of curriculum concepts in industry contexts, showcased innovation in industry and exposed students to a range of career pathways available to them, especially in non-traditional roles.

The fifth annual QMEA BMA MINE (Make It Now Engineering) Challenge held in Dysart in September, saw 12 students and teachers from across the QMEA experience life in a mining community as they worked in teams at BMA Saraji and BMA Peak Downs to solve a site-based engineering challenge. Team Peak Downs was victorious, however all thoroughly enjoyed the experience, which provided them with an insight in to the reality of working as an engineer in the mining industry.

The success of the programs delivered in the region is due to the ongoing support of local industry including Arrow Energy, BMA, BMC, MEC, Mynestart, Sedgman and Rio Tinto Hail Creek Mine, and the ongoing efforts of teachers in each of the schools.



## Schools

Dysart State High School  
Emerald State High School  
Middlemount Community School  
Moranbah State High School  
Pioneer State High School



### The region at a glance

- Expand Your MINeD attended by 28 students from Moranbah and Dysart State High Schools and Middlemount Community School
- 40 young ladies participated in 4Girls2 programs including Toolkit for Girls and Women in the Workforce
- 10 female students completed Cert I RIO following 4Girls2 involvement
- 21 students completed in Science Olympiad hosted by Pioneer State High School
- 35 Year 9 Moranbah SHS students participated in the Energy for the Future forum aimed at increasing understanding of energy resources
- QSMART (QMEA Science Maths and Related Technologies) delivered at Moranbah and Dysart



# Central South Region



Project Officer: Tammy Grady

This year was a busy one for the schools in the Central South region. Partnerships developed with LNG companies in Gladstone, including Arrow Energy, APLNG, GLNG and QCLNG, saw expansion to nine schools in the region, bringing three additional Gladstone schools into the QMEA fold.

QMEA has since been working with Tannum Sands SHS, Toolooa SHS, Gladstone SHS and Chanel College to design and develop lesson plans and a series of resources which will look at the technology and science of liquefied natural gas (LNG). With the largest LNG plant in Australia being constructed off Gladstone, contextualising the national curriculum to the local industry provides schools with an opportunity not seen before. As part of this, 20 students from these four schools participated in the inaugural Biodiversity Day which involved Year 9 students collecting and collating data related to cycad translocation.

From the awards event in March, hosted by students from Moura State High School, through to a range of curriculum and trade-related activities, students and teachers have had many opportunities to learn more about the minerals and energy sectors.

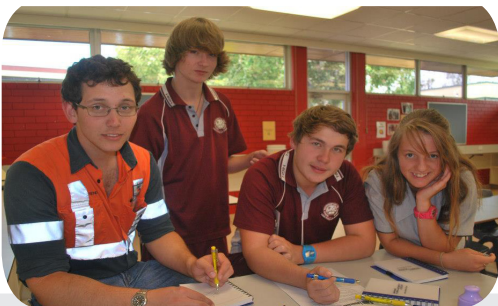
Certificate I in Resource Infrastructure Operations continues to produce top results with two students from Moura moving through the program and into full time apprenticeship roles with Anglo American. Students from Blackwater, Biloela and Wadja Wadja High also participated in the mine ready training.



QMEA also supported Toolooa State High School's SuperChallenge in 2012 and attendance of the school's Year 10 Extension Science Class at the Australian Brain Bee Challenge and senior students on a University Familiarisation trip in Brisbane. The development of engaging physics extended experimental investigation projects at Tannum Sands State High School, and the attendance of two students from Tannum Sands and one from Toolooa State High School at the 2012 Xstrata Engineering Camp in Mt Isa were other highlights from the region.

## Schools

Biloela State High School  
Blackwater State High School  
Chanel College  
Gladstone State high School  
Moura State High School  
North Rockhampton State High School  
Tannum Sands State High School  
Toolooa State High School  
Wadja Wadja High School



- 75 female students and 23 industry representatives participated in It's All About ME in May, with three students going on to complete Standard 11 training with TNT later in the year
- 70 year 11 and 12 students worked collaboratively with CQU Engineering students in Energy for the Future
- approximately 80 students attended industry presentations on geology during Earth Science Week
- 52 students from Moura, Gladstone, Biloela and North Rockhampton State High Schools and Chanel College competed in Expand Your MINeD activities
- Education Queensland and Industry Partnerships Gladstone's (EQIP), PREQIP program helped prepare 16 Year 10 indigenous students for the workforce.



# Southern Region

Project Officer: Robyn Flexman



Resource sector familiarisation, placing of curriculum and promotion of industry diversity were the focus of activities in the Southern Region during 2012. The outcomes could not have been achieved without the support of staff from QMEA sponsors and QRC member companies.

The range of programs offered to students was expanded to complement Australian Curriculum implementation, with explicit links made between science curriculum objectives in Year 8 – 10 and local industry applications. Students learned more about the various roles of scientists in industry through industry engagement lunches, experienced simulated activities, completed tours and engaged in problem solving challenges, each with a focus of increasing awareness of the breadth of science-related careers in the resources sector.



The International Geological Congress and Eastern Australian Basin Symposium held in Brisbane in 2012 provided opportunities for students to learn more about Earth Sciences through day-long events that included problem solving tasks under the guidance of industry mentors.

Senior students also learned more about application of physics and chemistry principles to energy generation from a number of industry mentors when they participated in Girl Power at the Powerhouse.



Trade-related activities were introduced in 2012, with students taking up the 'Toolkit for Schoolkids' opportunities and Mynestart tour with enthusiasm. A focus on diversity and encouraging women into non-traditional roles was the focus of the 'A Coal Goal' event with AngloAmerican, and was well attended by students from a number of Brisbane schools. These will be further expanded on in 2013.

## The region at a glance

- more than 420 students and 36 teachers attended an industry engagement lunch event with representatives from AngloAmerican, Arrow, BMA, CSEnergy, Origin, Rio Tinto, Santos, Thiess, Sedgman, University of Queensland, Xstrata Coal
- almost 80 students and seven teachers from Bundamba State Secondary College, Alexandra Hills and Wavell State High Schools toured the SIMTARS facility
- 60 students and six teachers attended Girl Power
- Approximately 80 students and five teachers completed robotics and Arduino programming workshops
- 80 students and seven teachers participated in the EABS Student Outreach Program at the convention centre with industry mentors from AngloAmerican, Arrow, Origin, Santos and Thiess
- 50 students and 5 teachers took part in the 'A Coal Goal' half-day breakfast forum and workshops
- 27 students and four teachers toured Mynestart as part of Toolkit for Schoolkids
- 24 students and four teachers competed in the Science Olympiad hosted at the QUT Cube.

## Schools

Alexandra Hills State High School  
Anglican Church Grammar School  
Bundamba State Secondary College  
Nanango State High School  
Wavell State High School

# Surat Region

Project Officer: Justine Ball



The program of activities delivered throughout the final year of the Coal Seam Gas High School Project Partnership between QMEA and Arrow, Origin, QGC and Santos has resulted in more than 1800 students and teachers building a greater awareness and knowledge of the career opportunities in the coal-seam gas (CSG) industry and the resources sector more broadly.

Ten schools in the Darling Downs region participated in a range of activities including site tours, career awareness events and engaging science activities.

The annual CSG Camp provided an opportunity for 19 students and four teachers to work with industry engineers to develop preliminary designs for the transportation of coal-seam water from the Surat Basin to Toowoomba in a simulated problem solving task.



## Schools

Chinchilla State High School  
Dalby State High School  
Downlands College  
Oakey State High School  
Pittsworth State High School  
Roma State College  
Toowoomba State High School  
St John's School  
Tara Shire State College

## The region at a glance

- 80 students and teachers from Tara Shire State College participated in CY Science workshops and TPD
- 165 students and 16 teachers participated in 4Girls2 forums
- 215 students and three teachers attended careers day events
- 50 students and teachers participated in site tours
- 165 students from five schools took part in the Origin Cars Program
- 155 students and teachers engaged with industry mentors to complete company projects including Origin Pongamia Agribusiness, QGC Rehabilitation and Pasture Renovation Projects and Santos Water testing experiences
- more than 850 students and teachers at additional industry awareness activities.



# Wandoan Region

Project Officer: Megan McNicholl



Xstrata Coal continues to support three schools through the Wandoan Education Partnership as part of their commitment to invest in communities in the region.

In addition to a range of Teacher PD activities held in Miles, Wandoan and Taroom, students participated in events including QMEA Awards, CY Science, It's All About ME and site tours to Kogan Creek Solar Boost Project and Kogan Creek Power Station.

In conjunction with Science Week, guest speakers visited Miles SHS and Taroom SS to talk to Year 8 students about renewable energy and geology, providing students with the opportunity to expand their knowledge prior to assessment pieces.

The region has focussed efforts on establishment of the Trade Training Centre at Miles State High School in 2012. Comprising of representatives from Miles, Taroom and Wandoan schools, resource sector, agriculture and local business and industry, the Northern Surat Steering Group was formed in May and is working hard to ensure that programs offered in 2013 will articulate into real pathways into the local area.

The construction of the Miles Trade Training Centre is well under way and work on Wandoan State School's Manual Arts facility is due for completion to coincide with the start of school in 2013.



## Schools

Miles State High School  
Taroom State School  
Wandoan State School



### The region at a glance

- approximately 100 staff and students from Wandoan and Taroom participated in CY Science program of activities and Teacher Professional Development
- more than 200 school students also attended the Annual Western Downs Careers Expo
- attendance at It's All About ME activities
- students participated in site tours
- students and teachers participated in career cafes
- a total of 15 students involved in school based apprenticeships and traineeships.

# Where to next?

This year has been a busy one for QMEA students and teachers. A range of programs have provided students with a greater understanding of the career opportunities that exist in the resources sector, while the science, technology, engineering and mathematics (STEM) teacher professional development program has enabled the confident teaching of STEM concepts within a resources sector context.

The revised program of activities for 2013 will build upon our successful partnerships and include events aligned to the Australian Curriculum, which showcase the innovative and emerging technologies in industry.

We look forward to the exciting opportunities that will emerge as part of the new program.

Level 13, 133 Mary Street  
Brisbane Qld 4000  
T: (07) 3295 9560 F:(07) 3295 9570

Queensland  
MINERALS & ENERGY  
ACADEMY

## Thank you to our QMEA sponsors...

### Foundation platinum



RioTinto



### CSG Partners



Santos

### LNG Partners



### Silver



### Bronze

