School of Mechanical and Mining Engineering Retreat

Outcomes and Summary

27 November 2012
Contents
1 Overview .................................................................................................................. 4
2 President of the Academic Board ........................................................................... 4
3 Executive Dean ......................................................................................................... 4
4 Presentations ........................................................................................................... 5
4.1 Head of School ..................................................................................................... 5
4.2 Discovery – Ross McAree .................................................................................... 5
3.3 Learning – Mehmet Kizil ................................................................................... 6
3.4 Engagement – Peter Knights ............................................................................... 6
3.5 School Manager .................................................................................................. 7
4 Discussion Tables – Discovery ................................................................................ 7
4.1 Tables 1 & 2 – Discovery 1 and Discovery 2 ....................................................... 7
5 Table 3- RHD .......................................................................................................... 8
6 Learning .................................................................................................................. 8
6.1 Table 4 – Learning 1 ........................................................................................... 8
6.2 Table 5 – Learning 2 ........................................................................................... 9
7 Engagement ............................................................................................................ 9
7.1 Table 6 – Engagement 1 ...................................................................................... 9
7.2 Table 7 – Engagement 2 .................................................................................... 10
8 Table 8 - Organisation and Administration .......................................................... 10
9 Table 9 – Internationalisation ............................................................................... 11
10 Beyond the current funding – research directions ............................................... 12
10.1 Big projects ....................................................................................................... 12
10.2 Metals – Professor David St John ..................................................................... 12
10.2 CRC Mining 2014+ - Professor Paul Lever ..................................................... 12
10.3 Hypersonics – Professor Richard Morgan ....................................................... 13
10.4 Materials and Mining – A/Prof Mingxing Zhang .............................................. 13
10.5 Renewable power generation – Prof Hal Gurgenci ......................................... 14
10.6 Discussion / Feedback ...................................................................................... 14
11 Targets .................................................................................................................. 14
11.1 Top 3 targets ..................................................................................................... 14
2014 .......................................................................................................................... 14
2017 .......................................................................................................................... 15
11.2 What recommendations would you make if you were on the review panel? .................... 15
11.3 What recommendations would you like the panel to make? ................................. 15

12 Conclusion .................................................................................................................. 15

Appendix A – List of Attendees ..................................................................................... 16
Appendix B - Agenda ..................................................................................................... 18
1  Overview
A School-wide retreat was held in accordance with PPL 1.40.06 – Review of Schools and Academic Disciplines as part of the preparation for the 2013 Academic Board review of the School of Mechanical and Mining Engineering.

All T&R, TF, RO and professional staff were invited to attend. RHD members of the newly formed RHD Staff:Student Liaison Committee were also invited to attend.

The retreat was held on 27 November 2012 at the Riverglenn Conference Centre in Indooroopilly. A list of attendees is in Appendix A and the agenda is in Appendix B.

Other preparatory retreats, workshops, and surveys were held as follows:

- Mining Research Strategy: 13-14 February 2012
- Professional Staff Workshops: 4 May and 21 June 2012
- School Surveys:
  - April 2012 (Administrative and Technical)
  - November 2012 (Learning, Discovery, and Engagement)

2  President of the Academic Board
Professor Kaye Basford, President of the Academic Board provided information on the purpose of the School Reviews.

- PPL 1.40.06 - contains the policy and details of the review process
- Recommendations are made in the context of UQ’s strategic and operational plan
- Current performance is based on existing indicators
- Benchmarking: ERA and CTQA have sufficient information; however it is ok to use other partners if desired (change to policy)
- The School needs an operational plan to show how it will enhance performance and influence recommendations
- The School’s submission to the Review Committee is our self assessment of where we are and where we would like to be in the next 5-7 years.
- The review committee will compare our self assessment with the views of other stakeholders through interviews and written submissions.
- The School is using the standard terms of reference and recommendations from the review committee usually come under these headings
- The School should take advantage of this process

3  Executive Dean
Professor Graham Schaffer, Executive Dean, addressed the group.

- The School is well balanced across the board
- Formal review and recommendations, once endorsed by Senate, are expected to be implemented
- Help with directions going forward – the document must focus on how we will go forward
- A few issues (risks) exist: centres ending, chair funding ending
- EAIT strategic plan (in materials provided to all) developed by ED and FLAG and external advisory board
- UQ is now a global 100 university
- Key strategies: build research leadership and improving the student experience
- On campus classroom experience needs to be enhanced
- The School should consider trying to attract a Laureate Fellow
- Internationalisation: response to the Asian Century (Federal Government)

4 Presentations

4.1 Head of School
- History – brief overview
- November 2012 School survey key points
  - Strengths: research environment, helpful staff, high quality students
  - Weaknesses: large classes, workload, engagement with industry, office space
  - Opportunities: need more staff (various categories), improve collaboration between research groups, RHD support
- School Based Performance Framework issues
  - FTE academic staff numbers large
  - No female staff
  - We are in cluster 4 with higher expectations
  - Good on ERA
  - Not great on average Category 1 per FTE but average research income per FTE is high
- 2003 School of Engineering review recommendations were presented

4.2 Discovery – Ross McAree
- The School’s weighted ERA index is 4.59 – the highest of any School at UQ
- Research income in 2011 of $15.66m was higher than all schools except Medicine and larger than SBS, BEL and Arts faculties combined.
- ERA publication points within the Faculty are good, refereed journal publications are steady. Publication points by staff member are lower than those of the rest of the Faculty. A contributor to this is a large number of research staff in the School (Level B & above) who work on projects that do not lead to publications.
- RHD completion rates are improving and total EFTSL is also climbing (the School is behind ITEE within the Faculty). The proportion of RHD students in the extended category is reducing.
- HERDC research income: The School attracts significant CRC, State Government funding (category 2 income) but is relatively low in category 1 income (competitive grants)

The challenge is to maintain the level of research income given that several major projects and centres are coming to an end of their current funding in the next few years (CRCs, DMTC, QGECE, SCRAMSPACE) and many of these can’t be renewed/extended. The School needs to work towards addressing this funding issue as a priority.
3.3 Learning – Mehmet Kizil

- The School has many large classes and it is appropriate to identify and implement appropriate teaching strategies for these large classes.
- The data show that there is a high student:staff ratio in a large number of courses.

3.4 Engagement – Peter Knights

*What is engagement?*

- Who are our stakeholders?
  - Students
  - Government (Local, State, Federal)
  - Industry (Large, SMEs and Industry Organisations)
  - General public (media)
- Why is engagement important?
  - It keeps us: Aware, informed, and relevant (current)
  - It promotes our “brand”. What brand? There is a lot of brand confusion within UQ!!!
- How does UQ measure engagement?
  - $$$ (Category 2 and 3 Research ✓✓, Donations & bequests ✓✓, # Grants with industry collaboration ✓✓✓, Consultancy & non-research income ✗)
- It is more than this!

*What do we do well?*

- Student engagement
  - Scholarships, vacation employment, final year projects, guest lecturers
- Formal industry partners
  - Chairs (DSTO, P&H, BMA)
  - Mining Education Australia (MCA)
  - Newcrest laboratory
  - ABB partnership
- Research collaboration
  - Linkage grants, CRCMining, CAST
- Solutions for industry
  - UQ Materials, UniQuest

*What can we do better?*

- Consultancy and non-research income?
- Continuous Professional Development
- Media engagement.
  - Why don’t we have a presence in “big issues” such as renewable energy, carbon capture and storage, mining taxes?
- Alumni engagement
  - Not just the job of the Director, Faculty Advancement
  - Materials Engineering does a good job
  - Should we have a newsletter for external stakeholders?
3.5 **School Manager**

- The Committee structure for the school was presented
- The key aspects of the proposed School budgets for 2013 to 2015 were presented. It was noted that budgets are likely to be tight for the next couple of years.
- Occupational Health and Safety issues were discussed.

4 **Discussion Tables – Discovery**

4.1 **Tables 1 & 2 – Discovery 1 and Discovery 2**

*What are we not doing that we should be doing to improve research (inputs/outputs/areas of activity)?*

- Advertising ourselves – do others appropriately know us/respect us/admire us/despise us
- Computational research – we do it but it’s going to get better
- Use space better – so that we could accelerate research outcomes
- Share our resources better – we don’t know what is available (equipment, software) across the school and we limiting out opportunities
- Publish as much a possible – this applies especially to our RHD students
- Carrot needs to be better - we need to do more to encourage students to publish more
- Have a travel fund for postgraduates – if they put together a good quality paper
- Note that high teaching workloads affect research outputs

*Are we too internally focused in the way we currently go about our research?*

- Yes. Inside university and external (industry)
- Role as thought leaders: “Change the thinking”
- Need to find niches: fill gaps rather than competing.
- Many opportunities to partner with others
  - Chemical: Manufacturing
  - Chemistry: Hypersonsics
  - Mathematics: Across the board
  - Physics: Hypersonics, Mining, Generally across the board.
  - Global change and environment
  - Industry generally and specifically, e.g. mining
- School could lead a center for computational research. Solve problems across many domains
- Where should we lead? Manufacturing, Hypersonics, Mining
- Collaboration is hard: petty issues get in the way. Collaboration is quite demanding?
- Deep brain stimulation is outward looking?

*What can we do to enhance research collaboration across the School?*

- Need to be more collegial – we need a common “enemy”
- Hold school wide seminars
- Academic staff should aim/be encouraged to develop new ‘collaborative’ research directions
- Need to know who each other is and what they are working on
- Need to know what other people are interested in doing
- Find ways to mix – socialise
- Whole of school seminars
- Mix postgraduate spaces – don’t silo RHDs (liberate them)
- Find ways to make time for people
- Seminars on methods/equipment/tools in use across the school
- Appoint leaders who find opportunities for Early Career Researchers (ECR)
- Adopt Twitter as the means to communicating

**How could we attract an ARC Laureate Fellow to the School?**
- Build it and they will come
- Big task – need to start early
- Invite outstanding people to spend sabbatical periods with us
- Two pathways Internal and external
  - Internal – ask for interest from staff
  - External – Identify gaps/opportunities within discipline. Identify someone. How can we attract someone to pull an ARC COE together? Possible international issues – clearance issues?
- Steal them from another university/create a more attractive environment. Need to get them really excited to come
- Need to be a very good research school – attractive environment underpinned by excellent university support
- Need a strong team to back up the person – environment
- Consider a fellow in the area of computational research or hypersonics

### 5 Table 3 - RHD

**Opportunities**

**What are the opportunities to make best use of the UQ Advantage in the School?**
- UQ Advantage as part of the RHD
  - Extra work along with milestones
  - Other training is good
  - Taking courses is good
  - Paper writing training

**What is an appropriate number of RHD students for academics?**
- 3-6 is fine number but include postdocs as associate supervisor

**How do we attract more of our high-performing undergrads into the grad school?**
- Summer and winter scholarships are good mechanism to recruit RHD students

### 6 Learning

#### 6.1 Table 4 – Learning 1

**How do we teach large classes and maintain learning outcomes and the quality of the student experience?**
- On line modules are ok but must be professional
- Consider student expectations of using new technology
What different teaching approaches can we adopt/develop?
  - Consider a working party

How do we share good teaching practice better?
  - Make good use of EAIT’s Teaching and Learning Development Plan (TLDP)
  - TEDI courses
  - Through tutor training

MOOCS – opportunity or threat?
  - Resource issues (time/money)

6.2 Table 5 – Learning 2

How do we improve the learning outcomes and student experience for Master of Engineering Science students?
  - Provide mentoring
  - Review SECaT scores which are lower than undergraduate courses: maintain standards.

What countries should we look to engage with?
  - France/other European countries
  - China
  - India

What further opportunities are there for 3+1+1 and how do we ensure success of the program?
  - 3+1+1 SCUT, USTB and maybe also other Chinese Universities (e.g. CSU, Chongqing)
  - Consider a joint masters program

How do we ensure success in introduction of BE/ME?
  - BE/ME: minimise cost (workload and financial) of introducing the new program

7 Engagement

7.1 Table 6 – Engagement 1

What opportunities are there for the School to be involved more in CPD?
  - CPD
    - CPD done well furthers the reputation of UQ and staff. This is useful in seeking industry research funds (eg. hypersonics group and Von Karmann Institute)
    - Conference participation also provides engagement opportunities.
    - Media engagement – we should initiate more press releases around key happenings.

How do we develop more opportunities for industry engagement in teaching and research?
The School needs an Engagement strategy, as “engagement done badly is worse than no engagement!”

Industry theses are a good way to begin collaboration

Register of industry theses for the next year

Conference attendance – networking

Should we have greater involvement with professional bodies (EA, IMechE, AusIMM, etc.)? How?

Need more productive relationships with professional societies

7.2 Table 7 – Engagement 2

What are the opportunities for better engagement with our alumni?

UQ’s alumni register – need to understand it

Use social media (e.g. Linked In) and ask grads to register. Form a School group. Who will moderate the group and provide School news and updates?

Initiate an annual 20-year alumni dinner

How do we get a better presence on the “big issues” in media, government, etc.?

More research directed at “the big issues” so what we say is relevant

Develop a metric of ‘presence’ and benchmark our public presence against other UQ schools and units.

Are there opportunities for us to engage more externally through Faculty and University structures or do we do it ourselves?

Better community presence for the UQ Brand. Still needs to be done by the individual although marketing direction led by the faculty needs to be communicated.

Engage with high schools to motivate students to come to UQ for engineering

Identify our employers and interact with them to get feedback on students

8 Table 8 - Organisation and Administration

How do we improve the OH&S culture in the School?

Induction for summer research students and TFN and other UQ staff requirements (equity)

- Suggest TFN for each type and research group

OH&S culture need more on how actions impact on OH&S and vice-versa

Culture of review and checking (auditing and compliance measuring)

Many rules, need to apply them and have freedom to progress and not be slowed down

Needs a person in each lab to manage and review risk assessments, etc.

Overriding principle is to go home safely

More presentations by OH&S staff – very efficient

School booklet (short dot points on what to do as a supervisor) – standard procedures

Experimental work for undergraduate students requires a lot of OH&S issues – can UG students do more computer work or is there another way?

Need more education on multiple users for risk assessments (research groups)?

Need to know the main risks as a starting point
What are opportunities for new resources for teaching (funding, industry personnel participating in teaching)?

- Industry guest lectures - can increase these which might increase industry donations?
- Former students invited back?
- School “ResTeach” – Teaching Support Program (TSP)
- Include students in research activities (engineering professional practice, summer scholarships, etc.)
- ResTeach is too much of a commitment but maybe RO staff giving a lecture or two or tutoring but it is not a good use of RO time in all cases
- Some courses would benefit by industry lectures
- Field trips to see things in situ – industry sponsors?
- Industry thesis (e.g. in China spend 2 months in industry)

What changes could we make to make our internal committees and information flow work better?

- Obtain feedback on the newsletter as an effective tool for information (e.g. should there be one newsletter or different ones for different topics)
- Be well organised with procedures and information provision (open)
- Write succinct emails with informative subject headers and include links
- Committee feedback and minute circulation and ensure committee outcomes flow to and from other meetings (e.g. Divisional meetings)
- Increased communication to and from the Faculty
- Include administrative matters as part of the Whole of School meetings (changed Acts, reporting etc.)
- Consider the use of Twitter

9 Table 9 – Internationalisation

What are opportunities for new international links in research and teaching? How do we maintain/strengthen existing links?

- Links with at least 2 overseas schools for joint research
- Joint undergraduate projects via video conferencing, UQ exchange
- Join with 2 overseas companies on projects

How can we make it easier for our students to participate in study abroad (e.g. easier assessment of academic credit)?

- Make better use of UQ International (links and resources)

How do we get the right balance between providing projects for occupational trainees and providing for our enrolled undergraduate and postgraduate coursework students?

Other

- Do we have a target of overseas student numbers?
- PGCW – understand why students come here
- Training for Asian users in microscopy (CPD)
10  Beyond the current funding – research directions

10.1  Big projects

*How do we secure additional research funds from 2014 onwards? There were five presentations on examples of ideas to secure additional research funding for the School.*

10.2  Metals – Professor David St John

Metals are associated with a large proportion of the Australian economy. A number of large UK and European projects linked to manufacturing such as

- The Materials Genome: development of open standards and databases that will make the discovery and development of advanced materials faster, less expensive and more predictable
- Accelerated metallurgy: integrated pilot scale facility for combinatorial synthesis of unexplored alloy formulations (Monash is participating in this)
- Exomet: new liquid metal processing techniques to revolutionise microstructure control in metallic alloys and their composites (UQ is participating in this)
- EPSRC Manufacturing the future is an investment in building the international competitiveness of UQ research in metals and alloys.
- Australia focus can be on
  - Environmental targets: light weighting, reduced waste, more efficient processes. Examples: additive manufacturing, light weight structures for transport, new processing technologies as in Exomet.
  - Energy: Nuclear, Solar Thermal, (Geothermal?): High temperature materials – very challenging.
  - Medical devices
  - Mining: wear, maintenance, equipment design
  - Implies new alloys, design manufacturing technologies and new applications need to be developed
- Opportunities for the School can be based around
  - International programs have a strong link to Manufacturing
  - Industry engagement important factor in overseas programs.
  - Collaboration nationally and internationally, access to high cost experimental, advanced analytical techniques (real-time X-ray), simulation and modelling – and done in parallel.
  - The School’s strength is metals and composite materials
  - Faculty also has strengths in polymers and ceramics

10.2  CRC Mining 2014+ - Professor Paul Lever

CRC Mining is an incorporated not-for-profit joint venture between mining companies, universities, OEMs and SMEs, and the Australian government. It was established in 1991.

The CRC will transform to a research entity without Australian Government funding in mid-2014. ARC funding is currently $2.4m pa (total budget $28.8m). A transition plan to the new structure, including its links with UQ, is needed.
Other income is from membership fees, industry funds, commercial activities.

Research income will shift to Category 1 and 3 when the CRC ends. The CRC receives $2m of ACARP funds (Category 1). Research programs are in automation, rock fragmentation/handling, equipment/power management, coal technology/fugitive emissions.

The focus for beyond 2014 is to –
- Develop human resource and intellectual capital
- Engage in fundamental research aimed at addressing key industry challenges
- Engage in applied research and technology implementation transfer

The research will focus on
- Grand challenges that are crucial to the industry
- Research vision for future mining should be in the 10-20+ year timeframe
- Develop a technology roadmap based on needs in the 8+ year timeframe

10.3 Hypersonics – Professor Richard Morgan

Hypersonics is a core research strength of the School. One idea is a Centre of Excellence in Hypersonics. The school is well placed to apply due to our wide range of expertise in hypersonics, and our large RHD contingent in this area.

Possible areas of focus include -
- Atmospheric entry aerothermodynamics
- Scramjet design
- Development of flight hardware
- Development of instrumentation for ground testing
- Design of ground testing facilities
- CFD for hypervelocity flows
- Control systems for hypervelocity flight

The involvement of other countries (e.g. China) is subject to Federal Government policy and regulations.

10.4 Materials and Mining – A/Prof Mingxing Zhang

Mining operation including mineral process involves considerable abrasion, wear, erosion, corrosion, impact and fatigue failures which cost billions of dollars in lost operation and replacement costs. The mining industry in Australia is the core of its economy.

Collaboration between materials and mining (and mechanical/design) may be looked on favourably by funding bodies and/or industry through a CRC or ARC linkage project. This would link all major disciplines in the School and could include:
- Development of new mining materials.
- Development of new processes for mining components, including surface treatment and other manufacturing processes.
- Optimization of component design.
- Development of techniques for repairing of failed mining components.

### 10.5 Renewable power generation – Prof Hal Gurgenci

The QGECE is scheduled to end in early 2015 and plans are underway to replace the State Government funding with other funds (Australian competitive grants and state/industry funding). Just under $1m per year is confirmed through 2020.

It is important to choose application areas with care so that

- We engage in successful research makes a difference
- Not duplicating other research facilities in Australia
- We have the skill set and facilities and aim to be the world’s best

### 10.6 Discussion / Feedback

- CRC in Mining Materials and Design or ARC LP as a start
- Indian and China links are worth pursuing and developing further
- Hypersonics – look to increase engagement with aerospace industry
- We have strong research interests in combustion and a Combustion Centre of some form may be appropriate
- Good idea to use existing infrastructure & linkage projects
- Be mindful of uncertainty in industry (maintain relationships)
- Medical manufacturing is promising (eg Cook Medical)
- Small projects to start with
- State government funding is basically gone
- Carbon tax money?? (renewable energy $2.2b, $10b clean air but the future of this is dependent on political developments in the next year)
- Computational research collaborations
- Hypersonics & Materials (DMTC)

### 11 Targets

#### 11.1 Top 3 targets

2014
- BE/ME
- Deal with over teaching
- Engagement metric (employer perception of our student and student survey after they have been working for a few years)
- Large class teaching issues
- Trial a technical course (partially) on line (e.g. MECH2300/2305)
- Peer coaching (TLDP)
- Research collaboration – needs to be formalised
2017
  o Domestic PG student numbers
  o Category 1 funding

2020
--

11.2 What recommendations would you make if you were on the review panel?
  ▪ Need to reduce overhead component on the extra students
  ▪ Improve student:staff ratio (check figures)
  ▪ Assistance to help with large class teaching
  ▪ Female staff
  ▪ Course delivery to include more pracs
  ▪ Student area for the school (Frank White Undercroft)

11.3 What recommendations would you like the panel to make?
  ▪ Ensure panel recommendations do not conflict with reporting deadlines (e.g. AMPAM)
  ▪ Coordinated industry engagement
  ▪ Increase collaboration (via feedback from industry)
  ▪ Need to better connect year 2+ courses (social media), and integrate pracs into courses better
  ▪ Two scramjet flights next year but what are we doing to build further on this?

12 Conclusion
  ▪ Keep thinking and send ideas through HoDs and Committees
<table>
<thead>
<tr>
<th>Staff category</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>T&amp;R</td>
<td>Paul Lever</td>
</tr>
<tr>
<td>Professional</td>
<td>Deanna Mahony</td>
</tr>
<tr>
<td>Research Only</td>
<td>Jeff Gates</td>
</tr>
<tr>
<td>Professional (Technical)</td>
<td>Doug Malcolm</td>
</tr>
<tr>
<td>T&amp;R</td>
<td>Carlos Caceres</td>
</tr>
<tr>
<td>T&amp;R</td>
<td>Ross McAree</td>
</tr>
<tr>
<td>Research Only</td>
<td>Bianca Capra</td>
</tr>
<tr>
<td>Research Only</td>
<td>Rowan Gollan</td>
</tr>
<tr>
<td>T&amp;R</td>
<td>Michael Smart</td>
</tr>
<tr>
<td>T&amp;R</td>
<td>Jin Zou</td>
</tr>
<tr>
<td>Research Only</td>
<td>Sandy Tirtey</td>
</tr>
<tr>
<td>T&amp;R</td>
<td>Anand Veeraragavan</td>
</tr>
<tr>
<td>Research Only</td>
<td>Stuart McDonald</td>
</tr>
<tr>
<td>T&amp;R</td>
<td>Russell Boyce</td>
</tr>
<tr>
<td>Research Only</td>
<td>Michael Creagh</td>
</tr>
<tr>
<td>T&amp;R</td>
<td>Mehmet Kizil</td>
</tr>
<tr>
<td>T&amp;R</td>
<td>Richard Morgan</td>
</tr>
<tr>
<td>T&amp;R</td>
<td>Saiied Aminossadati</td>
</tr>
<tr>
<td>Professional (Technical)</td>
<td>Eric Muhling</td>
</tr>
<tr>
<td>T&amp;R</td>
<td>Michael Kearney</td>
</tr>
<tr>
<td>T&amp;R</td>
<td>Martin Veidt</td>
</tr>
<tr>
<td>T&amp;R</td>
<td>Rowan Truss</td>
</tr>
<tr>
<td>Professional</td>
<td>Marilyn Barton</td>
</tr>
<tr>
<td>Professional</td>
<td>Karen Foster</td>
</tr>
<tr>
<td>Professional</td>
<td>Sandra Fried</td>
</tr>
<tr>
<td>Research Only</td>
<td>Aleks Atrens</td>
</tr>
<tr>
<td>T&amp;R</td>
<td>Ingo Jahn</td>
</tr>
<tr>
<td>Research Only</td>
<td>David StJohn</td>
</tr>
<tr>
<td>T&amp;R</td>
<td>Andrej Atrens</td>
</tr>
<tr>
<td>Research Only</td>
<td>Michael Bermingham</td>
</tr>
<tr>
<td>T&amp;R</td>
<td>Saiied Aminossadati</td>
</tr>
<tr>
<td>Professional</td>
<td>Bojan Vlacic</td>
</tr>
<tr>
<td>T&amp;R</td>
<td>Peter Knights</td>
</tr>
<tr>
<td>Professional</td>
<td>Rose Clements</td>
</tr>
<tr>
<td>Professional</td>
<td>Katie Gollschewski</td>
</tr>
<tr>
<td>Professional</td>
<td>Kim Lamb</td>
</tr>
<tr>
<td>External</td>
<td>Alan Inal</td>
</tr>
<tr>
<td>T&amp;R</td>
<td>Vincent Wheatley</td>
</tr>
<tr>
<td>T&amp;R</td>
<td>Alexander Klimenko</td>
</tr>
<tr>
<td>T&amp;R</td>
<td>Mingxing Zhang</td>
</tr>
<tr>
<td>T&amp;R</td>
<td>Ma Qian</td>
</tr>
<tr>
<td>T&amp;R</td>
<td>Hal Gurgenci</td>
</tr>
<tr>
<td>T&amp;R</td>
<td>Bo Feng</td>
</tr>
<tr>
<td>T&amp;R</td>
<td>Matthew Dargusch</td>
</tr>
<tr>
<td>RHD</td>
<td>Rizwan Rahman Rashid</td>
</tr>
<tr>
<td>RHD</td>
<td>Kristian Weegink</td>
</tr>
<tr>
<td>T&amp;R</td>
<td>Paul Meehan</td>
</tr>
<tr>
<td>-------------</td>
<td>------------------------------</td>
</tr>
<tr>
<td>RHD</td>
<td>Mitchell Dunn</td>
</tr>
<tr>
<td>RHD</td>
<td>Peter Beasley</td>
</tr>
<tr>
<td>RHD</td>
<td>Mehryar Sakhaei</td>
</tr>
<tr>
<td>RHD</td>
<td>Xiaogang Liu</td>
</tr>
<tr>
<td>RHD</td>
<td>Yaowu Zhang</td>
</tr>
<tr>
<td>Research Only</td>
<td>Paul Petrie Repar</td>
</tr>
</tbody>
</table>
Appendix B - Agenda

School of Mechanical & Mining Engineering Retreat

Tuesday, 27th November, 2012

Riverglenn (Daintree Room)

70 Kate Street

Indooroopilly Qld 4068

Agenda

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Introduced by</th>
<th>Preparatory Reading</th>
<th>Session Goal and Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00</td>
<td>Register. Tea and Coffee available on arrival</td>
<td></td>
<td></td>
<td>Introduction to the day’s activities and outline of the aims of the day</td>
</tr>
<tr>
<td>8:30</td>
<td><strong>Session 1 – Introduction and Goals</strong></td>
<td>David Mee</td>
<td>Nil</td>
<td>Presentation</td>
</tr>
<tr>
<td></td>
<td>What do we expect to achieve by the end of the day:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• have an understanding of the current status of the School</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• know where the school stands in relation to other schools in the Faculty and similar schools at other institutions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• know what we need to do before the school review and what input is required from everyone</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Ideas for priorities for next seven years</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8:45</td>
<td>Address by the President of the Academic Board</td>
<td>Kaye Basford</td>
<td>Terms of Reference</td>
<td>What does UQ</td>
</tr>
<tr>
<td>Time</td>
<td>Session</td>
<td>Details</td>
<td>Participants</td>
<td>Presentation Notes</td>
</tr>
<tr>
<td>-------</td>
<td>----------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>9:00</td>
<td>The Faculty of Engineering Architecture and IT</td>
<td>The Faculty of Engineering Architecture and IT for School Review Expect from the Review Presentation</td>
<td>Graham Schaffer EAIT Faculty Plan</td>
<td>Strategic direction for the Faculty the role for SoMME in this Presentation</td>
</tr>
<tr>
<td>9:15</td>
<td>Session 2 - Where have we come from and where are we now?</td>
<td>Session 2 - Where have we come from and where are we now? Overview: HoS Discovery: Chair of the Research Committee Learning: Chair of the T&amp;L Committee Engagement: Engagement Coordinator Professional: School Manager</td>
<td>David Mee Ross McAree Mehmet Kizil Peter Knights Kim Lamb</td>
<td>History and current status of the School Presentations</td>
</tr>
<tr>
<td>10:30</td>
<td>Morning Tea</td>
<td>Morning Tea</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11:00</td>
<td>Session 3 – Opportunities</td>
<td>Session 3 – Opportunities Introduction Discovery 1 and 2 (Leaders: PRM and MV) • What are we not doing that we should be doing to improve research (inputs/outputs/areas of activity)? • Are we too internally focused in the way we currently go about our research? • What can we do to enhance research collaboration across the School? • How could we attract an ARC Laureate Fellow to the School? Learning 1 – undergraduate (Leader MK)</td>
<td>Ross McAree Martin Veidt Mehmet Kizil Andrej Atrens Michael Smart Peter Knights Hal Gurgenci Kim Lamb Ma Qian</td>
<td>Identify opportunities for improvements in our key areas of activity. Nine Tables with different themes. Discussion leader at each table. Everyone selects a table.</td>
</tr>
<tr>
<td>11:10</td>
<td></td>
<td></td>
<td>Data on Research income for the School Data on undergraduate and postgraduate student numbers UQ Strategic Plan Terms of Reference for School Committees Report from</td>
<td></td>
</tr>
<tr>
<td>Question</td>
<td>Learning 2 – MEngSci, BE/ME (Leader AA)</td>
<td>RHD (Leader MKS)</td>
<td>Engagement – Professional and Industry Links (including CPD) (Leader PK)</td>
<td>Engagement – Alumni and Community Links (Leader HG)</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
<td>-----------------------------------------------------</td>
</tr>
<tr>
<td>• How do we teach large classes and maintain learning outcomes and the quality of the student experience?</td>
<td>• How do we improve the learning outcomes and student experience for MEngSci students?</td>
<td>• What are the opportunities to make best use of the UQ Advantage in the School?</td>
<td>• What opportunities are there for the School to be involved more in CPD?</td>
<td>• What are the opportunities for better engagement with our alumni?</td>
</tr>
<tr>
<td>• What different teaching approaches can we adopt/develop?</td>
<td>• What countries should we look to engage with?</td>
<td>• What is an appropriate number of RHD students for academics?</td>
<td>• How do we develop more opportunities for industry engagement in teaching and research?</td>
<td>• How do we get a better presence on the “big issues” in media,</td>
</tr>
<tr>
<td>• How do we share good teaching practice better?</td>
<td>• What further opportunities are there for 3+1+1 and how do we ensure success of the program?</td>
<td>• How do we attract more of our high-performing undergrads into the grad school?</td>
<td>• Should we have greater involvement with professional bodies (EA, IMechE, AusIMM, etc.)? How?</td>
<td></td>
</tr>
<tr>
<td>• MOOCS – opportunity or threat?</td>
<td>• How do we ensure success in introduction of BE/ME?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RHD (Leader MKS)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• What are the opportunities to make best use of the UQ Advantage in the School?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• What is an appropriate number of RHD students for academics?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• How do we attract more of our high-performing undergrads into the grad school?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engagement – Professional and Industry Links (including CPD) (Leader PK)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• What opportunities are there for the School to be involved more in CPD?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• How do we develop more opportunities for industry engagement in teaching and research?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Should we have greater involvement with professional bodies (EA, IMechE, AusIMM, etc.)? How?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Professional Staff Workshop

After 20 min move to another table. Repeat for three tables. Table leaders to identify the top 2 to 3 points to report to group

*Groups Discussion at tables*

*Conclude with summary from each table leader*
<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Description</th>
<th>Presenters</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>12:15</td>
<td></td>
<td>Government, etc.?</td>
<td></td>
<td>Are there opportunities for us to engage more externally through Faculty and University structures or do we do it ourselves?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Organisation and Administration (including governance and resources) (Leader KL)</td>
<td></td>
<td>How do we improve the OH&amp;S culture in the School?</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>What are opportunities for new resources for teaching (funding, industry personnel participating in teaching)?</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>What changes could we make to make our internal committees and information flow work better?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Internationalisation (Leader MQ)</td>
<td></td>
<td>What are opportunities for new international links in research and teaching? How do we maintain/strengthen existing links?</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>How can we make it easier for our students to participate in study abroad (e.g. easier assessment of academic credit)?</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>How do we get the right balance between providing projects for occupational trainees and providing for our enrolled undergraduate and postgraduate coursework students?</td>
</tr>
<tr>
<td>13:00</td>
<td></td>
<td>Lunch</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14:00</td>
<td>Session 4 – Beyond the current Funding</td>
<td>Opportunities for major research directions in next seven years. (Intro by HoS)</td>
<td>David Mee David St John Paul Lever Richard Morgan Ming Zhang Hal Gurgenci</td>
<td>The goal is to identify strategic directions for research for next seven years. The short presentations will outline examples of</td>
</tr>
<tr>
<td>14:10</td>
<td></td>
<td>Presentations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>Activity</td>
<td>Presenter</td>
<td>Notes</td>
<td></td>
</tr>
<tr>
<td>-------</td>
<td>---------------------------------------------------------------------------</td>
<td>-----------</td>
<td>------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>15:00</td>
<td>Group discussions at tables</td>
<td></td>
<td>Some new and some extensions to current research directions. Presenters will speak for five minutes outlining a plan for funding in the area and major directions to be targeted.) Everyone selects a table number at random on entering the session and goes to that table. <em>Short presentations Discussion at Tables Reports back from Tables</em></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Feedback from tables.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15:30</td>
<td>Afternoon Tea</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15:45</td>
<td><strong>Session 5 - Prioritisation of issues in key areas and moving forward</strong></td>
<td></td>
<td>Prioritize directions for next seven years for the School</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Top three targets to achieve by</td>
<td>David Mee</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- End 2014 (short term)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
- End 2017 (medium term)
- End 2020 (long term)
  - What recommendations would you make if you were on the review panel?
  - What recommendations would you like the panel to make?
  - Strategies for getting best outcomes from the School Review

16:45 Drinks and Nibbles

All
Nil

Open Forum
Informal discussions