



CENTRE FOR DOCTORAL TRAINING (CDT) IN OIL & GAS

MANAGEMENT BOARD MEETING MINUTE

2nd November 2017, 2:00 p.m. – 4:30 p.m.

Board Room, Enterprise Building, Heriot-Watt University

ATTENDEES:

Management Committee Members

John Underhill (HWU; Chair, CDT Academic Director) (JU)

Stuart Clarke (Keele) (SC)

Al Fraser (Imperial) (AF)

Mads Huuse (Manchester) (MH)

David Schofield (BGS) (DS)

Keith Gerdes (Chair, Industry Advisory Board) (KG)

INVITEES:

Anna Clark (HWU; CDT Training Academy & HSE Officer) (AC)

Lorna Morrow (HWU; CDT Manager) (LM)

1. Welcome and Apologies

JU welcomed everyone to the meeting and outlined the HSE provision.

Apologies had been received from Andy Aplin (Durham) and Rob Butler (Aberdeen).

2. Approval of Minute of the Management Committee meeting on 8th November, 2016 and review of actions

The minute had been circulated previously and amendments made in the light of members' comments and the minute was therefore unanimously approved.

Update on Actions

Action@ 8 th November 2016	Agent(s) Update@2 nd November 2017
Contact AF to secure OGA contact details for data release	LM AF reported that improved data is becoming available more of the time now. OGA is proposing a 5 year embargo period for release of speculative data and 2 years for proprietary data but there is significant push-back from the spec companies on this. JU noted that some companies are disposing of core samples and the CDT circulates these offers to partners but most do not have the capacity to store the material.
Request Heriot-Watt's legal department issue Appendix with studentship amounts for 3 rd cohort award	LM HWU legal office is greatly under-resourced and hasn't confirmed that individual cohort award letters have been circulated to partners. However, LM confirmed that all partners are being provided with purchase orders to claim their studentship allocation and the vast majority are invoicing within a reasonable timeframe.
Chase reports from CDT Committee Chairs and distribute to Management Committee as soon as possible	LM Only report for Training Academy Committee activity for 2016 was received. However, reports for Training Academy, Graduate and Awards Committees have been received for the 2017 meeting (see minute Appendix)
Approach NEXUSS for reciprocal elective course access as per agreement with EPSRC CDT in CCS & Cleaner Fossil Energy	LM All NERC CDT/DTPs now share information about each other's elective courses and unallocated spaces are offered to other CDT/DTPs
DS to determine BGS CDT studentship(s) for 2017 cohort. Reduction to 1 studentship would result in BGS losing core partner status and place on the Management Committee	DS BGS continued with its original investment of 2 BUFI studentships i.r.o. the 4 th cohort with 4 students receiving 50% studentships and so the BGS remains a CDT core partner
AA to approach Anna Korre re her joining the Training Academy Committee to provide environmental input now that Kate Gormley has left Heriot-Watt	AA Anna Korre agreed to join the Training Academy Committee
JRU to approach NS regarding ongoing commitment to chair the Graduate Committee during sabbatical	JU Nick Schofield agreed to a deputy being appointed during his sabbatical and thanks were extended to Stuart Clarke (Keele) for taking over this role.
Add industry level HSE behaviour and standards to the Roles and Responsibilities of Supervisors and Students guidance document	LM No suitable wording has been agreed but the matter was discussed in detail at the Graduate Committee meeting on 06/03/17 at which student representatives took responsibility for tackling their peers on inappropriate behaviour as it is a poor reflection on individuals, their home universities and the CDT.

Notify students and supervisors of intention to charge cancellation costs if student fails to attend a previously booked course without adequate reason or notice	LM Paragraph on cancellation charges was added to the Guidance for Students and Supervisors document and notified by email to all students, supervisors and main CDT contacts on 30/11/16.
Circulate members with information pack sent to BEIS Ministers	LM Completed.

3. Committee Membership

Oxford notified at a late stage that they were amending their commitment to the CDT to associate partner status in respect of the 4th cohort and so are no longer represented on this Committee. Two associate partners, Glasgow and NOC, have also chosen not to continue with the 4th cohort and cease to be associates with immediate effect.

Anna Korre (Imperial) has joined the CDT Training Academy Committee, replacing Kate Gormley (Heriot-Watt) who has now left the University.

Although the Industry Advisory Board (IAB) is currently chaired by Keith Gerdes, this may be subject to change as he has now retired from Shell. The industry partners are discussing this offline and will revert with their decision in due course.

4. Update on studentship and Training Academy funding models

Unallocated NERC CDT grant studentship for 2017 cohort Exeter, Heriot-Watt and Imperial have all successfully recruited to positions unfilled in earlier cohorts or as replacements for students from previous cohorts who have withdrawn from their studies. Durham has had one student from the 2015 cohort withdraw this week however, and Aberdeen and Oxford have not replaced the students they have lost. Because of the reduction in the number of partners in the 2017 cohort, there is one NERC studentship in the 2017 cohort award left to allocate. Because of the award of the additional 10 National Productivity Investment Fund (NPIF) studentships by BEIS via NERC, all associate partners with eligible projects are already having their single students fully-funded in the 2017 cohort so the possibility of splitting the remaining studentship equally across core partners with eligible students i.e. UK citizens or EU citizens with a minimum of 3 years prior UK residency, was discussed. All core partners except Aberdeen have eligible students but not all would be able to take the full studentship. After discussion, it was decided to let Imperial have the first option on taking this studentship on condition that they guarantee a further fully-funded studentship from their own funds in a putative 2018 cohort.

Training Academy funding There are currently 5 companies who have committed funding the annual CDT subscription amount up to and including the 2019/20 academic session and one company which is funding on a rolling annual review basis. The model continues to indicate a small surplus taking into account the training commitment to the additional 4th cohort which commenced study in October 2017. However, when the estimated costs of student travel from home institutions to Training Academy course venues are included, the model indicates a deficit. We are therefore not currently able to fund these costs from the Training Academy budget and students will continue to cover these costs from their RTSG. On the basis of evidence returned by universities when claiming reimbursement of the RTSG element of their NERC studentship allocation, RTSG costs range from 5 – 15% of a student's actual

annual RTSG expenditure (and many students are not using their full £5k p.a. allowance). The average expenditure on travel to attend CDT Training Academy courses is 9% of actual RTSG spend which members regarded as an acceptable amount.

5. Industry sponsorship

E.ON has been taken over by Premier Oil and OMV UK has now been acquired by Siccar Point Energy. Both these companies have notified that they are not able to renew their initial 3 year funding commitment to the CDT. Conoco Phillips has also decided not to renew after its 3 year review period and Woodside is not continuing with its one year rolling renewal commitment. JU reported that Woodside had also withdrawn its support to programmes at University College Dublin as well as to iCrag. BP's original commitment was to fund for a full six years and Shell, Statoil and Total have all committed to a further 3 years' funding at their 3 year renewal point. Verus Petroleum joined the CDT in early 2017, backdating its subscription to cover the first 3 years of the CDT's operations from October 2014 and committing to continue until 2020. Cairn Energy continues to support the CDT on an annual rolling review basis.

6. Reports from NERC CDT Committees

(a) Training Academy Committee (TAC): Report from Committee Chair, Andy Aplin, was tabled at the meeting and is included in the Appendix to this minute. Members discussed TAC's recommendation that only students who have completed a full 100 days of approved training should be provided with a CDT Training Academy 'transcript' and this was agreed. LM will update the relevant CDT guidance document and circulate this to all students and supervisors. This is particularly important as JU was delighted to announce that the CDT had successfully applied to the Geological Society for accreditation of its Training Academy programme and this would be announced at tomorrow's Annual Conference. This endorses the Industry Advisory Board and CDT's view of the importance of field work, and provides an opportunity for industry personnel contributing to the CDT's courses to use their participation as evidence of Continuing Professional Development (CPD).

(b) Graduate Committee

Stuart Clarke assumed the responsibilities of Chair for the 2016/17 session as Nick Schofield was on a year's sabbatical. His report was tabled at the meeting and is included in the Appendix to this minute. He reported on the differing approaches taken by partner universities regarding a lack of flexibility in making adjustments to take into account the 4 year CDT PhD period of study e.g. submission of 1st year reports/Major Reviews, and the provision of extensions to cover internships. He had lobbied at Keele for an extension of 3 months for CDT students to submit their 1st year reports and the University had actually given a full year's extension. MH countered that he expected CDT students to be able to meet standard university deadlines for submission of reports and completion of theses due to their high academic abilities and work ethic.

(c) Awards Committee: KG provided a verbal report as Co-Chair of the Committee this year. A written report from the other Co-Chair, Kevin Taylor, was received subsequent to the meeting and is included in the Appendix to this minute. KG reported that the quality of the project submissions had increased again with fewer projects being returned to supervisors for clarification. There were still fewer EIR titles than the Committee would like, but a greater emphasis on field work in the proposals was pleasing. The Committee always focuses on the student experience and a common question to supervisors who had

their submissions returned for clarification was 'What will the student actually be doing?' JU noted that the Committee also has an overview of the full CDT portfolio of projects and can identify an overlap which in turn reduces unforeseen difficulties at time of publication.

(d) Industry Advisory Board (IAB): KG noted that all industry representatives at this year's IAB are new except BP (John Bunney) and Cairn Energy (John Clayburn) so there had been an element of educating these new members about the CDT model at today's earlier meeting. The meeting was pleased with the course feedback from students but asked that CDT management keep the survey return rate (currently @70%) under review. Statoil had given a significant percentage of their 2017 summer internships to CDT PhD students and had now begun to make job offers. This seemed to give the other companies something to think about and it is hoped that more internships will be offered in future years. It was noted that ring-fencing staff time for internships has been an issue for many companies during the recent years of oil price challenge.

IAB representatives were pleased that the Decarbonisation & Future Energies course had gone ahead as this is a topic of increasing interest in the sector. Companies also asked that the CDT Training Academy Committee considers sourcing an elective course in Big Data & Machine Learning. This should be a generic course as each company has its own data formats and agenda in this area.

7. Forward Planning

JU reported that NERC is not re-commissioning any of its CDTs and the DTP2 process also allows for new partnerships to bid. Vicki Durbridge, Senior Programme Manager (Research Careers) at NERC, had visited the CDT on 8th March 2017 to complement NERC's visits to DTPs as part of their re-commissioning process. JU thanked the students and industry representatives, Andy Bell (Shell) and John Clayburn (Cairn Energy) for their very positive contributions to the day. The CDT secretariat had provided extensive written comments to NERC's report and had received the assurance that these comments would be circulated with the report. However, it is still not clear how the report is, or has been used, and that our comments are being included with it. As no CDT or DTP is being directly re-commissioned, the purpose and value of the report are uncertain.

NERC DTP2 and EPSRC CDT are possible for a 2019 cohort start, but efforts are focused on exploring ways to fund a putative 2018 cohort. Options for a 2018 cohort are NERC CASE studentships, an allocation from a further tranche of National Productivity Investment (NPIF) studentships which may be announced in the Autumn Statement, HEI/JIP funding or a contribution from any Sector Deal that is matured.

The UK government's Industrial Strategy Fund has put additional money into the CASE studentship budget and this scheme is relatively cheap for companies. Knowledge of this scheme was limited among the IAB representatives and most expressed interest in it when the matter was raised at the earlier IAB meeting as the monetary commitment is minimal (min. £1k p.a. with KG suggesting the average is £7.5k p.a.) and the student needs to spend a minimum of 3 months in the company setting. Following this route would increase the IAB sponsors' subscription to £47.5k p.a. which most did not see as prohibitive. At present Shell and Total are the only companies we know of who have MoU's with NERC for CASE studentships. AF agreed to follow up with his BP contacts to see whether they already make use of this funding source.

It was noted that if NERC was no longer involved in funding, applications could be accepted from international and direct EU entrants, although the former would attract a higher tuition fee. Any

companies entering the CASE studentship scheme would still need to become subscribing CDT industry partners however. Increased project sponsorship from industry was welcomed by members present.

CDT academic partners who had accepted a full or 50% National Productivity Investment Fund studentship in respect of the 2017 cohort (replacing their own institutional funding share), had committed to deferring their funding to support a new cohort for 2018 entry. Associate partners would either need to pair up to provide a full scholarship in 2018, or source additional funding themselves e.g. industry or self-funded student. If there is no other funding, this CDT academic partner funding could support a small cohort for 2018 entry. This would have implications for the training programme, both for students and course leaders, but there is a possibility of generating income by opening up even mandatory CDT courses to paying students from partner universities or other CDT/DTPs. A number of members noted that they had funded positions that they would be happy to badge for the CDT in order for these students to gain access to the CDT Training Academy programme.

JU has been invited to present to NERC, EPSRC and BEIS in Swindon on 20th November 2017 and an update will be provided to Committee members after that meeting. In the meantime, JU/LM will email all current CDT academic partners to seek an indication of their likely commitment in terms of numbers of students that they would be prepared to fund as part of the CDT in the absence of any other RCUK funding.

8. Any Other Competent Business

It was suggested that Andy Pulham and Nigel Evans could be approached to lead a 3D seismic interpretation course to replace Joe Cartwright's elective course which ran in March 2017.

The Wessex field trip was coupled with the Stratigraphy course again in 2017 and although student feedback is good, it is clear that Mike Simmons is uncomfortable leading a large group on a mandatory course. Members proposed to the TAC that the Stratigraphy course be provided as an elective course in future and that other provision be sought for the second week of the Challenging Environments research theme course.

The 2017 Decarbonisation & Future Energies course was delivered with alternative presenters following Paul Younger's illness. The CDT extended thanks to Jon Gluyas and staff from University of Strathclyde for their contributions to the success of the course.

Following the announcement of The Geological Society's accreditation of the CDT training programme, members proposed a final 'graduation' ceremony at the GS's London headquarters for the 2014 cohort at the end of their studies. Students would be invited to present their research results and it would also be an opportunity to celebrate the GS accreditation of the TA programme and the students' successful completion of the 100 day training programme requirement.

ACTIONS AND AGENTS

Action	Agent(s)
Imperial to seek guarantee of deferred studentship funding for 2018 entry cohort in return for receiving the remaining unallocated studentship from the NERC CDT grant for the 2017 entry cohort	AF
Update Guidance to Students and Supervisors document with ruling on provision of CDT transcripts on completion of Training Academy programme	LM

Contact BP to find out whether they already have an interest in the NERC CASE studentship scheme	AF
Contact all current CDT academic partners to seek an indication of their likely commitment in terms of numbers of students that they would be prepared to fund as part of the CDT in the absence of any other RCUK funding.	JU / LM
Training Academy to investigate possible contributors to a new elective course in Big Data and Machine Learning	AC / TAC Chair
Approach Andy Pulham and Nigel Evans for replacement 3D Seismic Interpretation course	AC / TAC Chair
Offer Stratigraphy course as an elective and source alternative provision for 2 nd week of Challenging Environments research theme course	AC /TAC Chair
Gauge interest at The Geological Society (GS) London to host a student research results presentation event as part of a 'graduation' ceremony for the 2014 cohort to mark the completion of their studies and the GS accreditation of the CDT's training programme.	LM

APPENDIX

Report from Awards Committee Chair, Professor Kevin Taylor (provided 08/11/17)

The Awards committee was chaired by Kevin Taylor, and comprised Keith Gerdes, Richard Swarbrick, Alan Roberts, Al Fraser and Dorrik Stow. It held a half day telecom meeting to discuss each PhD project outline and considered each for (i) fit to the CDT themes; (ii) Novelty of the research; (iii) achievability of research proposed for the PhD student; (iv) availability of data needed for the research; and (v) expertise of the supervisory team. In addition, by viewing all submissions we were able to ensure that duplication across the CDT was minimised. We were in the position to approve the majority of the proposals with no further action needed. For a minority, the committee requested clarification prior to approval. In only a very small number of cases did we feel we could not approve, due to either duplication or concerns over the data set availability. Overall the committee felt that the range of projects provided breadth, were spread evenly across the CDT themes, and represented the needs of both the academic and industry community.

Report from Graduate Committee Chair, Dr Stuart Clarke (tabled at meeting)

Summary of Graduate committee meeting – 6th of March 2017

Discussion at the last graduate committee meeting focused primarily on two topics:

1) *The training academy programme past and future*

While graduate representatives provided direct feedback to the meeting on individual academy courses, the consensus among the student cohorts was that the training academy was excellent, valuable, worthwhile and thoroughly enjoyable. There was particular praise for industry-lead and industry-focused courses, which provide real insight into the industry, and for joint courses between year cohorts, which provide the opportunity to integrate with the years below and above. The graduate committee generally expressed their gratitude to those people from both industry and academia who gave their time and resources to provide academy courses.

The meeting provided the opportunity to convey to the student representatives some of the less-than-complimentary comments that have been received by the CDT board from course leaders regarding student etiquette. These issues range from non-engagement with teaching to behaviour on field based courses that may

be construed as effecting health and safety. The student representatives were unanimously appalled by such behaviour and expressed their opinion that it was disrespectful to the course contributors and to the companies that fund the CDT training academy. It was generally agreed that trainees on CDT courses should behave in a manner commensurate with that expected of industry professionals on professional training courses. Consequently, it was proposed and agreed that 1) students and supervisors should sign a guidance document as an informal contract indicating their commitment to uphold the principles of the CDT when it comes to training etiquette, and 2) the student representatives would email their own cohorts with etiquette ground rules for training, to use peer pressure as a means of stamping out poor etiquette by the few.

2) Variations in CDT Student expectation within universities

The cohort has expressed some concern over disparities between expectations and requirements of CDT students between different universities. Some students have expressed concern over specific universities' annual reviews and progression procedures that require CDT students to perform to the same level as non-CDT students who do not have training commitments, particularly in the 1st year. Equally, students considering internships -which NERC strongly supports with extensions to completion dates - have come up against barriers from universities that insist on a maximum 4-year-from-start PhD submission date across the board, and do not take into account that the CDT PhD is already 4 years and funded for the entire period. It is difficult to see a clear answer to these problems while maintaining the obvious necessity for individual universities to administer their own PhD students in line with their own policies. Discussion centred on the role that the CDT representative in each university should play in these matters, and that perhaps these problems of disparity could be communicated to them so that they are fully aware.

Finally, fully aware of the time limits on the contracts of Anna Clark and Lorna Morrow, the student representatives expressed their gratitude for all of their hard work in organising the various aspect of the CDT, and offered whatever help they could to bring about extensions. It was clear from the meeting that the student body of the CDT is strong, supportive and fully engaged with what they consider to be a very valuable PhD programme. The commitment of the representatives to the committee on which they sit and the student body they represent is excellent and impressive, and it was clear from the enthusiasm of the 4th year in particular that they consider the CDT to be the 'cream' of PhD schemes in their field.

Report from Training Academy Committee Chair, Professor Andy Aplin (tabled at meeting)

1. Committee met August 2017
2. Generally very good feedback on courses. Some comments that 2 week courses are too long; we do not provide much training for the more environmental contingent and getting the right balance of training for people with different backgrounds is sometimes challenging. Overall, some relatively minor negatives amidst a sea of general positivity.
3. Overall, we feel that the training adds significant value to the PhD and gives the students technical and generic skills which will enhance their employability in and outside the oil & gas industry.
4. Some students have themselves sourced some of their optional modules. The Committee has been generally supportive of this approach in that the CDT is not able to provide the more specialist training. Courses are checked to ensure that they meet CDT quality guidelines. A minor annoyance is that students tend to ask if courses can be counted after they have taken them, despite clear guidance to ask in advance.
5. Into the future, we need to evaluate the training component of any new CDT, ensuring sustainability in terms both of finance and also time.