



NERC CDT in Oil and Gas: Training Committee Meeting Minute (Draft)

1st November 10:15am - 12:30pm
Enterprise Oil Building, Heriot-Watt University

ATTENDEES:

Andy Aplin (Durham University)
Andy Bell (Shell)
Anna Clark (NERC CDT in Oil & Gas)
Lorna Morrow (NERC CDT in Oil & Gas)
Mads Huuse (Manchester University)

Apologies from:

John Underhill (Heriot-Watt University)
Kate Gormley (Heriot-Watt University)
Ole Jacob Martinsen (Statoil)
Tony Doré (Statoil)
Zoe Shipton (University of Strathclyde)

1. Welcome and Overview

Andy Aplin welcomed Mads Huuse to the meeting as the replacement for Jonathan Redfern, who has now moved to be Manchester's representative on the CDT Management Committee in place of Kevin Taylor.

Overview of CDT training events held over the past 12 months and current plans in place for the year ahead.

Courses delivered in year 1:

Induction & Environmental Impact & Regulation (Heriot-Watt University) = 2.5 weeks
Petroleum Systems Analysis (Heriot-Watt University) = 1 week
Extending the Life of Mature Basins (Manchester University) = 2 weeks
Unconventional Hydrocarbons = 2 weeks (Durham University)
Exploration in Challenging Environments = 2 week (French Alps - Heriot Watt University & Aberdeen University)
Energy Communications = 2 days (Heriot Watt University)
Mentor Event = 1 day (Heriot Watt University)

10 weeks total.

Courses planned for year 2 or 3 (green indicates optional status):

Biostratigraphy and Sequence Stratigraphy (optional in 2015 (already held) - to be mandatory going forward) = 1 week
Environmental Assessment and Laboratory Skills = 1 week
Petroleum Economics = 1 week
County Clare Sedimentology field course = 1 week
Nautilus Optional Module = 1 week
GIS & Geomatics = 1 week (Newcastle & Durham Universities)
Skye Volcanics Field Course = 1 week (Aberdeen University)

Geological Interpretation of Seismic Data = 1 week (Oxford University)

Decarbonisation / Future Energy = 1 week (location undecided)

Reservoir Modelling Field course (Elgin) = 1 week

Courses in preliminary planning for years 2 or 3:

Core workshop = ? (Peter Haughton - ICrag)

Reservoir Engineering for Geoscientists = 1 week

Spain field course = 1 week (Shell to lead? University of Barcelona input?)

Dorset field course = 1 week

Environmental Science (lab-based module) = 1 week (Heriot Watt)

Shallow Subsurface Geoscience and Geohazards = 1 week (Southampton University)

Courses in preliminary planning for year 4:

Careers and Applicable Skills = 1 week?

The training committee would like the Careers and Applicable skills event to represent a culmination of the CDT training academy for each cohort. Ideally this would contain a small degree of field work / site visits, with a possible re-run of the earlier mentor event.

Action Points: Andy Aplin to contact Justin Dix at Southampton University to discuss the formation of the shallow subsurface geoscience course.

Anna Clark to source learning outcomes for Co. Clare field course and discuss inclusion of subsequent core visit.

Anna Clark to source and compile Learning Outcomes for all CDT modules where possible.

2. Discussion of Student Internships

The feasibility of official CDT-backed internships was discussed, with the conclusion being that where CDT students wish to apply for an industry internship, the CDT will provide assistance and references - but it will ultimately be down to each individual student to source, apply for and arrange their internship. It would be separate from the CDT training provision.

The point was raised as to whether NERC would need to be consulted about internships since if a student was enrolled into a lengthy internship, it is likely that their PhD completion deadline would need to be extended beyond the current four years.

One of the main supporting points for not progressing a model by which the CDT arranges internships for each student cohort is that internships for non-geoscience students would be far more difficult to arrange.

For CDT students who show an interest in applying for an internship, the CDT is willing to distribute their project details to the CDT industry sponsors.

Action Points: Lorna Morrow to contact NERC to seek guidance on their view of a suspension of studies to accommodate an internship. Students should be advised to discuss the implications for their completion dates with relevant staff at their registered institution as some universities have strict completion deadlines.

3. CDT Industry sponsor updates

Cairn Energy and Woodside Energy UK have both become CDT industry sponsors. Statoil have confirmed the renewal of their subscription to support the CDT training provision until 2019.

4. CDT Future Training Provision Plan

As per section 1, there are a number of courses in planning and pre-planning for delivery to both current and future CDT cohorts. The balance of mandatory and optional courses, and the logistics relating to each, were discussed in detail.

6 weeks (6 different courses) of mandatory training was decided upon for years 2 and 3, leaving 4 weeks of optional training from which to choose. If places are available students may opt to join further optional training courses, but any marginal costs for attendance (including travel, accommodation and subsistence) must be covered by the student's RTSG or other funding sources.

Further optional modules not listed in section 1 may also be available. These include:

Specialised software training by CMG (Europe) - Reservoir Simulation training.

Taught 1 week modules offered by Total

NERC Advanced Training Short Courses Programme

Non-seismic geophysics (Peter Styles - Keele) = 1 week

The committee felt that we have reached a stage where the numbers of courses on offer to the CDT students must be carefully balanced to ensure that there are sufficient numbers available to attend courses, as well as there being sufficient administrative resource to handle the logistics of delivering the programme.

In the 2015/16 academic session, the optional modules will be open to 28 students in total, rising to 59 in the 2016/17 session.

Action Points: Andy Aplin to contact Stuart Harker for advice on Total course selection, before contacting Van-Thang Nguyen.

Andy Aplin to contact Peter Styles regarding non-seismic geophysics.

5. 2016 course provision

2014 Cohort:

2 out of the 3 weeks of mandatory courses in 2016 have been arranged and booked. These are:

Petroleum Economics - 29th February - March 4th (Heriot-Watt). This is a classroom-based module with a strong focus upon exercise sessions and group work. It will be taught by David Palmer from AGR Tracs Training, an Aberdeen-based training provider.

Environmental Science and Laboratory Skills (Heriot-Watt) - This course will comprise classroom, laboratory and field site visits. The students will collect water and sediment samples from different sites on the Lothian and Fife coastlines in order to carry out a lab-based assessment of them. There are plans for this course to also contain a 1 day visit to The Underwater Centre in Fort William to learn about use of ROVs in offshore environments.

Andy Aplin is progressing plans for a 1 week **GIS/Geomatics** course - to be held in either Durham or Newcastle in June/July. Ken McCaffrey (Durham University) to lead.

Action Point: Andy Aplin to liaise with colleagues at Durham and Newcastle and CDT staff to develop and schedule this course.

2015 Cohort:

7 out of the 10 weeks of mandatory courses in 2016 have been arranged and booked (2 have already run in November 2015). These are:

Induction Programme and Environmental Impact and Regulation - 3rd November - 13th November (Heriot-Watt) - 2 weeks of lectures and exercise sessions and a 1.5 day visit to The Underwater Centre in Fort William.

An Introduction to Geology for Non-Geologists - February 5th (Edinburgh) - This one day event will directly precede the Petroleum Basin Analysis course. This has been arranged in response to student feedback that too much geological knowledge was assumed during the Induction.

Petroleum Basin Analysis - February 8th - 12th (Heriot-Watt) - No changes have been made to the 2015 format of this course due to a successful run in 2015.

Extending The Life of Mature Basins - 3rd May - 11th May (Manchester University) - Some adjustments and updates have been made to this course for 2016, based on 2015 student feedback. This course will contain the first geology field element for the 2015 cohort, a 2 day fieldtrip to the Derbyshire Peak District,

Unconventional Hydrocarbons - 26th June - 8th July (Durham University) - This course will follow the same format as in 2015 due to a successful run in 2015.

Anna Clark is progressing plans to pair the 1 week biostratigraphy and sequence stratigraphy course with a 1 week fieldtrip to Dorset to study the Wessex Basin. The most likely timing for this is mid-late September. The **Biostratigraphy and Sequence Stratigraphy** course would be led by Mike Simmons (Halliburton), while the **Wessex Basin field trip** would be led by Al Fraser (Imperial College London).

Anna Clark is progressing plans for the arrangement of an **Energy Communications** course and a **CDT Student Mentor Day** - timing for this is yet to be determined.

Action Point: Anna Clark to liaise with Mike Simmons and Al Fraser to schedule and develop the above courses.

The inclusion of a CDT Mentor Day into the training calendar was discussed, with no firm conclusion on when and where to host it. Despite each of the 2014 student cohort being paired with an industry mentor in early 2015, few have felt the need to contact their mentor. Three students have been found new mentors due to finding that their mentor has been affected by the sweeping job cuts in the oil and gas industry at present.

The possibility of moving a mentor event until years 3 or 4 was discussed, perhaps linked into the proposed year 4 careers event.

At present the industry mentors have been provided through the PESGB / AAPG YP grouping. The Industry Advisory Board members had asked at their meeting in November for details of the scheme to be passed to them so that they could propose employees as mentors. Lorna Morrow has actioned this and to date, E.ON has replied with 3 volunteers.

6. 20 Week Training Quota

In response to student queries, the degree of flexibility in the 20 week CDT training quota was discussed. The CDT staff have been asked by more than one student whether non CDT training, specific to their research projects, can count towards their 20 week quota, resulting in non-attendance at some CDT training elements. The Training Committee agreed that non-CDT courses could not replace mandatory training elements, but that scope existed for flexibility in replacing optional training elements. Such a system would allow for non-geologists in particular to dedicate time to training more aligned to their research projects.

Where students opt to replace CDT-administered optional modules with independently sourced training courses, it was agreed that the Training Academy budget should provide a contribution, the exact amount of which would be included in the policy guidance document that will be put out for consultation as set out in item 6 above

Any costs in excess of this default amount would have to be met from the student's RTSG or other funding sourced by them. This would need to be managed on a case by case basis by the CDT staff.

Action Point: Lorna Morrow to liaise with the CDT Management Committee and Industry Advisory Board to draw up new procedural guidelines addressing this issue.

7. Nautilus Optional Courses

The lack of certainty regarding CDT student access to Nautilus courses as optional elements of their training was addressed. The committee were satisfied that enough training provision exists to account for the possible loss of access to Nautilus courses in future. It is hoped that access will remain for the foreseeable future, but this cannot be guaranteed due to the current pressures faced by Nautilus at this time of low oil price.

Action Point: Anna Clark to contact Gary Nichols (Nautilus MD) to progress course access for the 2014 cohort throughout 2016 and 2017.

8. Training Course Budgets

The committee agreed that the present approximate £27k-£32k budget per two week offering (approximately £15k for a 1 week course) is reasonable. The extra cost of fieldwork elements and how to manage costs, particularly for optional modules, was addressed.

The committee agree that at present a slight over-spend on mandatory field courses, where extra funding can be procured, is acceptable so long as reasonable effort is made to keep costs as low as possible. However, for optional modules it is agreed that keeping within budget restrictions is important.

The CDT training course with the highest cost so far, and the only course to exceed the agreed budget, has been the French Alps field course. The duration of this course in 2015 was shortened to 9 field days to bring down overall costs. It is proposed that this be shortened further to 5/6 days and for it to be retained as a 1 week optional module in future.

9. Arrangement of next CDT Training Committee Meeting

It is proposed that the committee next meet in Q2 2016, either in Edinburgh or Manchester.

Action Point: Anna Clark to send out poll to determine best date and location.

Year 4 Mandatory		
	5	
	4	
	3	
	2	
	1	Careers and Applicable Skills week

Year 3 Optional		
	5	Water Pollutants - environmental module
	4	Wessex Basin Field Course
	3	Reservoir Engineering for Geoscientists
	2	Reservoir Modelling Field Course
	1	Nautilus Optional Module

Year 3 Mandatory	5	
	4	
	3	Decarbonisation / Future Energy
	2	Geological Interpretation of Sesimic Data
	1	Conference

Year 2 Optional	5	Environmental Science based course
	4	County Clare Sedimentology Field Course
	3	Isle of Skye Volcanics and Reservoirs field course
	2	Biostratigraphy & Sequence Stratigraphy
	1	Nautilus Optional Module

Year 2 Mandatory	5	
	4	
	3	Applications of GIS
	2	Environmental Assessment and Laboratory Skills
	1	Conference

Year 1 Mandatory	10	Energy Communications	Mentor Day	Induction	Induction
	9	Exploration in Challenging Environments - French Alps Field Course			
	8	Exploration in Challenging Environments - French Alps Field Course			
	7	Unconventional Hydrocarbons - Durham University			
	6	Unconventional Hydrocarbons - N Yorks Field Course			
	5	Extending the Life of Mature Basins			
	4	Extending the Life of Mature Basins			
	3	Petroleum Systems Analysis			
	2	Environmental Impact & regulation			
	1	Conference	Environmental Impact & regulation		

2015 Cohort Training Matrix (rough draft)

Year 4 Mandatory					
	5				
	4				
	3				
	2				
	1	Careers and Applicable Skills week			

Year 3 Optional		County Clare Sedimentology Field Course			
	5	Environmental Science based course			
	4				
	3				
	2	Reservoir Modelling Field Course			
	1	Nautilus Optional Module			

Year 3 Mandatory	5	-			
	4	-			
	3	Decarbonisation / Future Energy			
	2	Geological Interpretation of Sesimic Data			
	1	Conference			

Year 2 Optional	5	Environmental Science based course			
	4				
	3	Isle of Skye Volcanics and Reservoirs field course			
	2	Exploration in Challenging Environments - French Alps Field Course			
	1	Nautilus Optional Module			

Year 2 Mandatory	5	-			
	4	-			
	3	Applications of GIS			
	2	Environmental Assessment and Laboratory Skills			
	1	Conference	Petroleum Economics		

Year 1 Mandatory	10	Energy Communications	Mentor Day	Geo-intro	xxx
	9	Biostratigraphy & Sequence Stratigraphy			
	8	Wessex Basin Field Course			
	7	Unconventional Hydrocarbons - Durham University			
	6	Unconventional Hydrocarbons - N Yorks Field Course			
	5	Extending the Life of Mature Basins			
	4	Extending the Life of Mature Basins			
	3	Petroleum Systems Analysis			
	2	Environmental Impact & regulation			
	1	Conference	Induction	Induction	Environmental Impact

Further proposed optional modules

		Reservoir Engineering for Geoscientists	
Years 2/3 Optional		Spain Field Course	
	5	CMG software course	
	4	Southampton Shallow Hazards	
	3	NERC Statistics	PESGB North Atlantic
	2	Total course	
	1	Non-seismic Geophysics	