TRAINING PATHWAY SPECIFICATION

Pathway name	Course code (where applicable)	Year
ARIES Doctoral Training Partnership (DTP) Training Pathway		2019

NOTE: Whilst the University will make every effort to offer the training pathway as detailed, changes may sometimes have to be made for reasons outside the University's control (e.g. illness of a member of staff) or because of sabbatical leave.

TP1 TRAINING PATHWAY SUMMARY

TP1.1	a	SCHOOL(S) OF STUDY	BIO, CMP, DEV, ENV, MTH
	b	FACULTY or FACULTIES	SCI, SSF
	c	NAME OF TRAINING PATHWAY LEAD	ARIES Director (Prof Bill Sturges) and Head of Training (Dr Iain Lake) (UEA-ENV)
TP1.2 *Note 1*	a	PATHWAY TITLE	ARIES DTP PhD
	b	COURSE CODE (where applicable)	
	c	FULL/PART-TIME (please specify)	FT/PT
	d	LOCATION (UEA Norwich, Distance Learning)	UEA Norwich, and ARIES Partner Institutes where PGRs are registered in one of the above Schools at UEA
	e	AVAILABLE FROM (date)	October 2019
TP1.3	EXTERNAL INPUT (please list here the input from external organisations e.g. employers, partner institutions into the development of this pathway)		
	ARIES Advisory Board, Strategy Board, Training and Progression Panel and non-academic Collaborative Partners		
TP1.4	FURTHER INFORMATION (web link to further information)	ARIES Training is described on our webpages at https://www.aries-dtp.ac.uk/study-with-us/our-training-provision/ and in more detail in the ARIES Handbook (https://www.aries-dtp.ac.uk/handbook-and-forms/). PGRs will also receive updates by email on training opportunities via a dedicated Facebook page and regular emailed newsletter to which all are automatically subscribed. The central repository of information for PGRs registered at UEA is at https://portal.uea.ac.uk/postgraduate-research	

TP1.5	AVAILABILITY BY AWARD (please tick all that apply)			
Masters Degrees by Research			Master of Philosophy	
PhD (3-year)	✓		PhD Integrated Studies (4-year)	
PhD by Publication			Doctorate in Clinical Psychology	
Doctor of Education / Master of Education			Doctor of Medicine	

	MANDATORY ELEMENTS OF TRAINING
TP1.6	There are a number of mandatory training elements incorporated into the ARIES DTP Training Pathway listed here, but PGRs are strongly advised to investigate the training opportunities available through (a) their own School of study and (b) via the UEA Graduate School's Personal and Professional Development service (PPD) – see https://www.uea.ac.uk/science/graduate-school/personal-and-professional-development. The latter has been specially developed with science-oriented PhD students in mind, and has a number of highly relevant and valuable courses that run across the year. These can be used in fulfilment of the requirement for ARIES PGRs to a acquire skills beyond those provided by the DTP training (see below). **The following additional UEA-based training is required for ARIES PGRs registered at UEA:**

Training component	How/when this will be delivered
Introduction to UEA and the research and training environment	During UEA-based induction. PGRs embedded at ARIES Research Organisation Partners must attend: travel costs will be covered by the DTP.
Equality and diversity training	Online training (HR and CSED; see https://portal.uea.ac.uk/equality/training1)
School Health and Safety induction (UEA)	During School induction. Also required for ARIES PGRs hosted elsewhere if they will be spending *a significant period of study* at UEA.
Information Compliance: Data Protection, Freedom of Information and Copyright	All three modules can be found via the "Information Compliance" link near the bottom of your BlackBoard page (under "My Organisations". The Data Protection module is compulsory, while the other two are highly recommended.
Participation in school seminar series and skills workshops	Within Schools, including mandatory introductory presentations in some Schools

Mandatory ARIES cohort training (for detailed synopsis of training offered at cohort events please see https://www.aries-dtp.ac.uk/handbook-and-forms/).

Welcome Event (DTP induction)	Residential cohort training in October of first year
Winter School	Residential cohort training in November of first year
C-CLEAR - ARIES Doctoral Alliance (CADA) conference and workshops	2 day event usually late March or early April every year. 2nd and 3rd PGRs are expected to attend and give an oral presentation at

|	least once during their PhD. Optional for 1st years.
Summer School 1	Residential cohort training in June of first year
A *non-mandatory* Year 2 activity is under development	Summer of Year 2
Summer School 3	Residential cohort training in June of third year

The following training is mandatory for *some* PGRs:

Training component	PGRs for whom this is compulsory
Research Ethics (PPD training run by FMH or SSF). There is a more general introduction to ethics at the Winter School.	All SSF PGRs, and all other PGRs for whom research will involve human subjects, animals, or tissues
Data protection and information security training (online)	All SSF PGRs, and all other PGRs for whom research will involve data related to identifiable individuals
Home Office Licence (run externally)	All PGRs for whom research will involve procedures on live animals
Sea Survival Training (run externally)	All PGRs for whom research will involve working on board research vessels
First aid training	All PGRs who will carry out fieldwork (see fieldwork checklist for guidance)
Radioactive substances training (run by USS once a year)	All PGRs for whom research will involve handling of radioactive substances or using ionising radiation
Training in teaching (detailed requirements vary between schools)	Mandatory for all PGRs wishing to work as Associate Tutors (e.g. Demonstrators). See "working as an Associate Tutor at UEA" at portal.uea.ac.uk/postgraduate-research/pgr-students/further-pgr-information.

Preparation for the probationary review	ARIES PGRs may opt to take the PPD course "Preparing for the Probationary Review Meeting". There are SCI and SSF variants of this (e.g. SCI2RF4Y and CCETR23Y). However, there is significant overlap with material covered in the ARIES Year 1 Summer School. Please note that for most PGRs this Summer School takes place *after* the Probationary Review.

TP2   PATHWAY LEARNING OUTCOMES

TP2.1 Learning Outcomes

ARIES Training is based on our mission to "*train PhD students to become 21st Century Scientists: leaders in the science and sustainable business of the natural environment*". These skills are identified as belonging to five 'pillars' and training is directed towards PGRs attaining these skills:
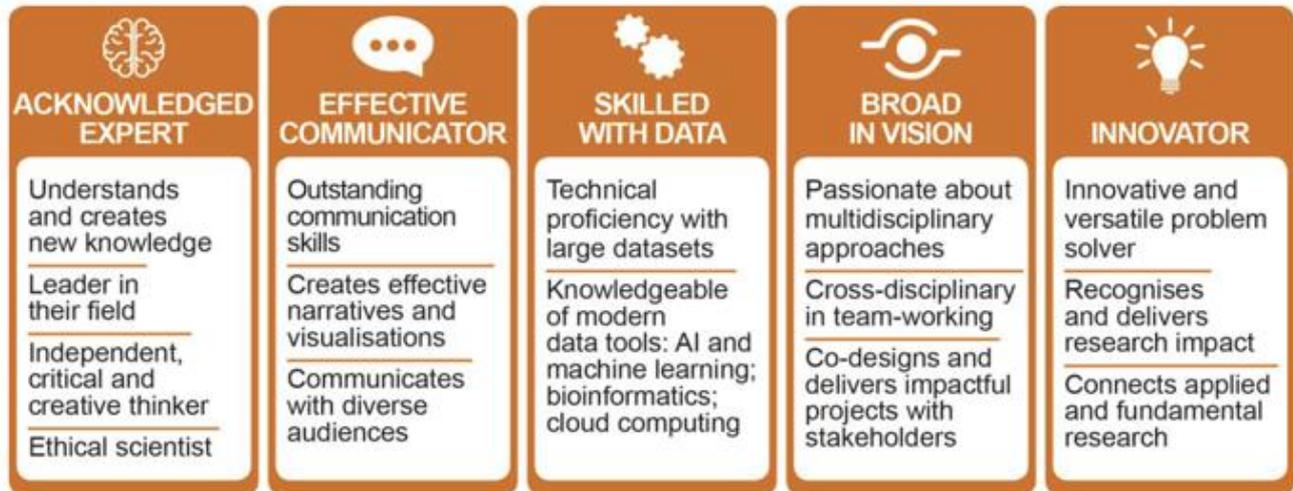
Overall the training aims to:

1. Develop a cohesive self-supporting cohort of PGRs
2. Provide foundation skills for PGRs to quickly & efficiently begin their PhDs
3. Develop a range of advanced skills relevant to their programme of work
4. Build a wider set of transferable research skills
5. Offer career-specific training and support
6. Be efficient delivered; i.e. substantially (but not entirely) replacing University PGR training with short, intensive multi-component courses
7. **Equality of opportunity, diversity, and wellbeing** are all core to delivery of the programme

The delivery mechanisms include:

1) Mandatory **residential whole-cohort events** (see above)
2) **Continuous professional development** to become a rounded professional
3) **Career** and **research profile** building to optimise employability
4) Training tailored to you:
     Advanced courses for your research and horizon-broadening:
     Experiential learning, e.g. networking, engagement, placements, innovation, presenting

For training planning and tracking purposes we have adopted the well-known Vitae Researcher Development Framework (RDF; see https://www.vitae.ac.uk/). The RDF is commonly used by researchers from postgraduate level to University Professors and leaders of industry and policy. It emphasises the knowledge, behaviours and attributes of successful researchers, helping you achieve the most from your time as a PGR.

The RDF will be introduced in detail at the ARIES induction.

Some learning outcomes may be achieved through experiential learning activities e.g. attending and presenting at conferences, participating in outreach activities in schools, working as an associate

tutor, supervising project students, organising workshops, and so on. We will support these activities wherever possible. Experiential learning may also occur outside the academic environment, e.g. sports club committee membership, involvement with a charitable organisation; school governor, etc.

ARIES sponsors additional optional training in advanced, multidisciplinary, career-focussed and innovation skills, etc. These are usually free for ARIES PGRs to attend. ARIES PGRs may attend training offered by other ARIES Universities and Partners, which is also usually available at no cost.

DTP-funded ARIES PGRs (i.e. not those who are "Associated" ARIES PGRs) are also eligible to attend NERC-sponsored training. Associated PGRs may be able to attend some NERC courses depending on course capacity, but they may need to pay a fee to do so. DTP-funded PGRs can also apply for funds from ARIES to attend training that is (a) essential to their thesis, (b) identified as necessary in their TNA, and (c) is not available via the above routes or is better value for money.

TP2.2 How will these learning outcomes be reviewed?

Each PGR will complete the ARIES Initial Training Needs Assessment (TNA) self-assessment spreadsheet within six weeks of the beginning of their period of study, and develop a training and development plan for the first year of their research, as well as considering any longer-term objectives (e.g. in the context of possible careers after graduation). This process uses an electronic form developed specifically for ARIES PGRs, *so PGRs should use this form, instead of any other UEA document.* The PGR will complete the form and discuss it with their supervisor/team, who then sign to confirm their approval. At this stage the supervisor should also identify any training courses they consider necessary for the PGR to undertake during the period of their studies.

The PGR's skills development should be discussed at every interim progress meeting with their supervisory team.

At around the time of each annual review, including the Probationary Review in Year 1, the PGR will complete an ARIES Continuing Skills Assessment (TNA) electronic document, with reference back to earlier Initial and Continuing TNAs. This will include a list of training completed, short reflective reports reviewing their progress on meeting their learning objectives, and setting out training and development objectives for the following year. This should include skills needed to progress their research, to develop wider transferrable skills, and towards longer-term career goals.

The supervisory panel will discuss this with the PGR and add comments and feedback. The completed form is submitted to the ARIES Office and experienced staff within ARIES provide written feedback which is returned to the PGR and their Primary Supervisor.

The PGR may also discuss their training progress, research progress and impact, and their career aspirations with their Independent Research Impact Advisor (IRIA). The IRIA is appointed by ARIES, and is entirely independent of the Supervisor Panel (i.e. they do not attend Panel meetings).

Due consideration is given to relevant pre-existing training qualifications and experience in assessing the above, although we still expect attendance at all mandatory cohort events.

TP2.3 Training Structure

The overall structure of the mandatory cohort elements is illustrated below:
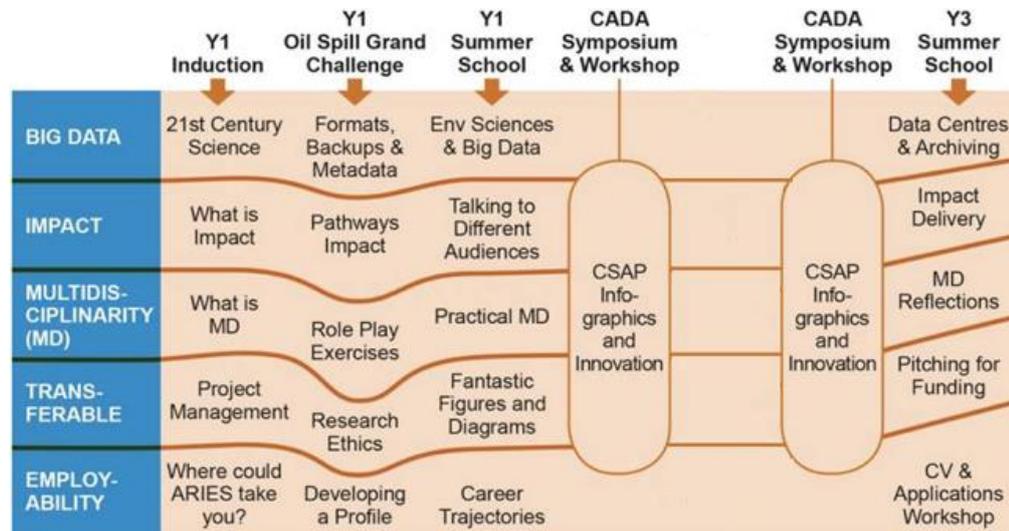
Activities in Year 2 are still under development.

Whilst flexibility is required due to individual PGR needs, some guidelines for training expectations in addition to the cohort activities can be given:

- Suitable and sufficient Advanced Research Training required for the PGR to effectively carry out your programme of research. This may be achieved through one or several training activities, but we expect will consist of a **minimum of 5 days of tuition per year**. This can include time spent on direct tuition with your Supervisor or members of your research team.

- We strongly recommend that PGRs undertake additional Advanced Research Training beyond their immediate research area to achieve advanced capabilities in other areas of the environmental sciences. Of particular value may be transferable research skills such as statistics, computing (e.g. data management, programming/coding), and/or modelling. This can also include self-study and online tutorials.

- Training in advanced data techniques is a specific requirement; this could be a course in statistics, data mining, machine learning, etc. ARIES-funded PGRs may use their travel and training budget to cover the cost of any such training, but note the above instructions about ensuring value for money from external training.

- Additonal continuing professional development training to achieve a broad portfolio of transferable skills for the workplace; this will likely require an investment in **2 days training per year**. This might include, for example, media/public engagement training; innovation/enterprise training; or more generic courses such as, project management, etc.

- Sufficient careers training as required in addition to the cohort training. For example, training in job-hunting; interview skills and practice; etc.

- Presentation (oral or poster) at an international conference.

- We also encourage additional experiential learning activities (not duplicating any of the above), for example: writing a blogpost (e.g. our own SciENVY blog); contributing to the E^{3}I Club's activities; delivering a research seminar/presentation to your research group/department, etc.

Adjustments will be made where necessary to accommodate part-time PGRs or PGRs needing to interrupt their studies.

TP3 PATHWAY COHERENCE AND EMPLOYABILITY

TP3.1 Learning Progression

How will progression in terms of skills, knowledge and understanding be reflected in the pathway between activities/courses in any one year and across the years as research degree candidates make progress through their course of study?

Training in year one (years 1 and 2 for part-time PGRs) should focus particularly on mandatory training, and skills that are essential to allow the PGR to carry out their research. In subsequent years, PGRs will be encouraged to develop the learning outcomes that they articulated using the descriptors and levels of the Vitae RDF. It is anticipated that most PGRs will be at Phase 1 in most areas of the RDF at the start of their degree and hence should progress from there. Some PGRs may already be at higher Phases and could, if they wish, develop their capabilities further through the course of their studies.

The PGR and the supervisory team will regularly assess and reflect on the PGR's skills development and record this both as part of UEAs progress and reporting requirements, and via the DTP TNA.

ARIES has a stated expectation that "**By the end of your studentship, you will have achieved Phase 3 in at least six items (descriptors) from each of the four RDF domains of the Planner and Phase 4 in at least two items (descriptors) from each of the four RDF domains**". We do, however, recognise the need for flexibility in this and that achievement of a particular Phase is a matter of self-assessment and personal judgement. For that reason we place much greater emphasis on assessing your engagement with the TNA process.

There are also *minimum* requirements for submission of written work:
By the end of year 1 a literature review, PhD project proposal/work plan and timetable
By the end of year 2 a structured piece of scientific writing
By the end of year 3 a draft thesis chapter, plus a further draft chapter *or* a draft paper, a detailed thesis plan and a robust timetable for completion.
ARIES does not need to see these items; instead the Supervisor confirms that they have been completed.

The award of an *ARIES Certificate of Advanced Postgraduate Study* at the end of the 3rd year of study is contingent on completion on all mandatory elements of training, completion of wider training as outlined above, satisfactory completion and submission of all TNAs and written work, and evidence of progress across the domains of the RDF.

TP3.2 Feedback Cycle

Please explain how feedback from supervisors and others will support the coherence of the programme. How will this feedback impact on subsequent activities/courses?

Experienced members of staff from the DTP (e.g. Directors, Heads of PGR Training, academic leads of hosting organisations, etc.) will review all TNA reports and give feedback to the PGRs and their supervisors via the feedback part of the form.

The ARIES Training and Progression Panel (TPP) continuously monitors and works to improve training provision across the DTP. PGRs reps from each cohort year are members of, and report to, the TPP and liaise with their cohorts. The DTP Director is a member of, and reports to, the Science Grad School Executive and UEA Doctoral College Executive. The TPP reports to the ARIES Strategy Board.

Feedback from ARIES PGRs is sought at almost every juncture: evaluation sheets are collected daily from all cohort training, as well as any ARIES-sponsored activities. In addition, feedback flows in two directions from PGRs and Supervisors via TNA forms, Annual Activity Reports, etc. These are all reviewed by the TPP and inform decision making. NERC conducts its own Mid-term Review involving PGRs, Supervisors, and other staff.

TP3.3 Employability

How is employability embedded into the pathway?

All PGRs receive an introduction to the university careers service (and to the many opportunities/services they offer), including an opportunity to meet their designated PGR Careers Advisor, at their PhD induction session. The importance of being widely employable in the current job market is also highlighted at induction in a dedicated PPD/Training Overview session.

Career opportunity and progression is reinforced by ARIES at every Winter and Summer School, and at the ARIES Induction. At all of these events there are talks about career pathways from those who have formerly undertaken postgraduate training: e.g. former PhD students, alumni, stakeholder representatives, staff from other partners, etc. They discuss what key skills they acquired as a PGR most benefitted their subsequent careers.

All ARIES-funded PGRs are also appointed an Independent Research Impact Advisor with whom they can discuss their career aspirations and strategies needed to achieve their goals.

We provide training on CV writing and building a profile, Fellowship and Research Grant writing, career progression, etc., embedded in to our mandatory cohort training. This is also encouraged through the E3i enterprise and innovation club (http://www.enveast.ac.uk/innovation/e3i-student-innovation-club), inter-DTP "envEXPO" events, and internship schemes.

In addition, numerous training sessions are run at UEA, notably by CareerCentral (https://www.uea.ac.uk/careers), including sessions on preparing successful applications and achieving interview success in both academic and non-academic contexts, how to use the 'My Career Central' software effectively, and a PGR Opportunities Fair run each year.

The development of transferrable skills will enhance PGR's employability. The TNA-RDF system allows PGRs to conceptualise how their skills are developing, to identify the training they need, and readily evidence their personal skills and capabilities when applying for positions.