

## Application for Associate Fellowship

SECTION ONE – Information about the applicant	
<b>Name:</b>	[REDACTED]
<b>Payroll Number *:</b>	[REDACTED]
<b>College/Service:</b>	CLES
<b>Role(s) Currently Held:</b>	Post-graduate Researcher (PhD) / Post-graduate Teaching Assistant (PTA)
<b>Job Family:</b> (where appropriate e.g. E&R)	Research, Teaching
<b>Full or Part Time:</b>	Full time
<b>Length of employment at University of Exeter:</b>	[REDACTED]
<b>Total number of years of employment in Higher Education:</b>	27 months
<b>Please list any relevant qualifications or awards you already hold, together with date of attainment:</b>	BA (Hons.) Cantab. Natural Sciences: Zoology <i>June 2013</i> Learning and Teaching in Higher Education, Levels 1 & 2 <i>Autumn 2014</i> PhD – Biosciences <i>in progress, upgrade passed Dec 2015</i>

## SECTION TWO – Clear evidence of success and effectiveness in teaching and/or supporting learning

	Date	Professional and developmental activities	A 1-5	K 1-6	V 1-4
1	Sep 2014 - present	Variety of demonstrating work – stretching across all undergraduate and postgraduate year groups; includes field, laboratory, computer and discussion practicals. Guiding students through understanding new material and skills – mindful of range of experience and background (especially mathematical /programming). College of Life and Environmental Sciences – have taught bioscientists and geographers. Often teaching same subject matter to very different year groups – takes a lot of effort to avoid a ‘one size fits all’ style of teaching specific topics, especially ranging 1 <sup>st</sup> yr UG to MSc students often older than myself. Teaching same lesson to multiple classes, or subsequent years, with other PTAs provides ample time for peer discussion and reflection on what the major problems were, what to try in future, and testing implementation.	A 2-5	K 1-6	V 1,2,4
2	Spring. Autumn 2015	Seminar leader for undergraduate module – ‘Critical Thinking & Scientific Reasoning’. Included planning, execution, assessment of students, mechanisms for feedback on myself & module. Dealt with students with special learning needs, passed on problem of lack of communication regarding such circumstances to PTA organisers. Two-hour lessons demanded variety of learning and teaching approaches to maintain interest, and allowed for me to challenge myself with different methods / ideas of how to teach group seminars. Repeatedly switched between small groups, whole class discussion, short didactic episodes, and personal reflection. Systems in place for highly structured discussion, followed by freeform comments from class, then back to more structured teaching. Individualised feedback and 4-part justification for marks given to each student after each class – CLES policy implemented in response to student feedback, given the emphasis on undergraduate satisfaction in the recently convened TEF.	A 1-5	K 1-3,5,6	V 1-4
3	Jan – May 2015	Delivered one-on-one statistics tutorials for finalists honours projects with Academic Skills team. Tailored to individual’s needs and abilities, including placing worthwhile skill development in the context of career intentions. Trouble in balancing help needed with rules regarding students only submitting their ‘own work’, particularly challenging with programming. Further challenged with balancing opinions of their supervisors against the requirements of the syllabus – often arrived attempting analyses beyond what they should be asked to complete. Had to be framed in the context of the student’s own ambitions / priorities.	A 2,4,5	K 1-4,6	V 1,3,4
4	June 2015	Planned and executed first annual British Ecology Society Summer School – 4 day residential field trip. Part of team of 6 PhD mentors, plus staff from BES. Undertook full-day training on teaching and planning. Assisted in lessons, gave tailored career advice, in charge of social program with other mentors. Solicited feedback from students throughout the event and afterwards. Liaised with peers to adapt teaching as field course unfolded. Full day of reflection and critical feedback between mentors and BES to improve on next year. Adapted to feedback from colleagues during the trip with regards to strategy for communicating with undergraduates. Many of the students were mature learners with specific individual goals and expectations of course – managing expectations identified as crucial for next year.	A 1-5	K 2-5	V 1-4
5	March, Oct 2015	Talks to MSc students detailing why they may consider a PhD, pathways to getting one, and advice if that is their intention. Tailored lectures to highlight variety of ways to achieve the same goal, diversity of possible backgrounds, and assurance that there doesn’t need to be a straight-and-narrow plan. Requested feedback from convener on presentation style, content and overarching message. Framed talks in context of higher education and research – the university’s need to fulfil REF requirements, and channelling of funding into fewer and fewer institutions.	A 1,2,4,5	K 2,3,4	V 1-4
6	April 2015	Represented the department and post-graduate degrees in undergraduate careers fairs. Prompted students on their academic experiences, provided insight into what direction their current opinions might point towards. Advised on what sort of experience they should be looking to gain if wanting to move into research, provided advice over changes in funding (Government Policy affecting HE). Challenge was in spotting students who were shy or uncertain in approaching to speak to us. Exploited role as near-peer and used active listening and open questions to explore their thoughts on academia.	A 2,4	K 3	V 1-4

7	October 2015	Interviews, talks and lectures to student / public societies and the wider media on my research topics. Delivered same talk to different groups with one observer providing me with requested feedback and comments on improvements. Have recorded talks to listen back to and reflect on where they are likely too fast. Found difficulty in prompting discussion / questions with very mixed groups. Always requested feedback from student societies but mindful that it is usually just gratitude. Podcasts & radio interviews more challenging due to usual reliance of visual graphics in explaining science, but feed-back again mostly complimentary.	A 1,2,4,5	K 1-5	V 1,2,4
8	Sep 2015 - present	British Ecological Society 'Ecological Ambassador' – schools outreach position to plan and execute lessons on ecology aimed at A-level students at local schools. Undertook full day of training in lesson planning, outreach, learning objectives etc. Prepared lessons, had feedback sessions with peers and colleagues to identify potential pitfalls, improvements and strengths. Received excellent feedback from other ambassadors and BES education team.	A 1-5	K 1-6	V 1,2
9	August 2014, 2015	Represented the department at annual large science outreach festival. Planned interactive activities and exhibits with other bee-researchers. Spoke with wide range of people, from young children to interested adults / hobbyist beekeepers. Took to the stage as part of a demonstration on plant defences – spoke as part of lecture and ate world's hottest chili pepper on stage. Consulted with other bee-team members to feedback on what facts and lines were being well received.	A 1,2	K 1,2,4	V 1,2,4
10	May 2015	Contributor / "staff" member of Annual USA Beekeeping Institute. Helped execute three day institute including lectures, practical classes, social events and examinations. Examiner for first grade beekeeping qualification (interstate recognised): observed amateur beekeepers undertaking routine hive maintenance and signed off whether or not they were competent. Asked set questions, was not permitted to give answers. Gave feedback.	A 1-5	K 1-4,6	V 1-4
11	August 2015 - present	Representative on the BES Early Careers Working group. Feed-back from peers informally and advise BES council on issues relating to early-career researchers including training opportunities (e.g. focus & structure for their e-seminars), internships, policy, conferences and career advice. Chair meetings in turn. Contributed to BES diversity survey and study.	A 1,5	K 3,4,5	V 2,4
12	Autumn 2014	Completed 'Learning and Teaching in Higher Education' levels 1 and 2. Developed micro-teach sessions, improving from level 1 to level 2. Group discussions on HE, best practice, differences in practice between disciplines. Drew on group's varied experiences, and provided introduction to education literature and scholarship, especially as an academic discipline in its own right.	A 1,2,5	K 3-5	V 3,4

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## SECTION THREE – Clear evidence of success and effectiveness in teaching and/or supporting learning

### *Example One – Leading a Seminar on ‘Reading a Scientific Paper’*

This was the second time I was teaching this seminar, the learning objectives of which focussed on critical reading and scientific methodology, but also compromise and the constraints placed on scientists by the publishing landscape. The paper to analyse had not been encountered before, and so was first introduced in small groups which then built up to class-wide discussion. As the learning objectives focussed on styles of thinking, I regarded this teaching as an exercise in ‘Conceptual Change’ and planned my content accordingly, with a greater emphasis on learner-focussed teaching (Trigwell and Prosser, 1996). This was not in line with my previous experiences of STEM teaching, where emphasis is typically on ‘Information Transfer’ (Lueddeke, 2003). Because the practical was assessed on the basis of input, and mindful of my desire to focus on learners, I assigned each a number, one of which was randomly called out at each stage of the class-wide discussion to prompt a new point, at least assuring each student could speak once and opening up opportunities for better performance. I was particularly keen to encourage personal interpretations and insights into how science should be done, as I considered the concept of phenomenography (Fung, 2006) critical to teaching this module. I then asked students to leave feedback anonymously at the end of the session, and the ‘numbers’ idea was well received, with many students commenting on it being easier for them to be given a specific chance to speak. I discussed this technique with my peers and module convener afterwards, commenting that I thought it worked well so long as I was mindful to prompt the student to expand on a point if their answer was timid or under-developed.

This technique did raise one issue however, in that a student with specific learning needs was (unknown to me) in my class. The student required extra time and specific equipment to read text passages, and was concerned at the idea of being randomly called upon. I did my best to adjust, speaking with the student outside the classroom and agreeing their number would be called when discussing the abstract, which they would have time to read. This seemed to work fine, although retrospectively I think I over-marked the student, simply because I was more attuned to notice when they spoke. I’ve since read on this type of ‘halo effect’ – particularly in Biggs (2011), and have modified my method for tracking discussion involvement to be less affected by ‘noticing’ frequency of student involvement. I discussed (with the student remaining anonymous and their permission) this incident with my peers also teaching these seminars, to find a more severe similar incident had occurred with a student who was partially deaf in another class becoming upset and leaving. As a consequence, we raised the issue with the module convener and the teaching co-ordinators, asking for the idea of PTAs being notified of when they were teaching students with special learning needs. I now check with conveners or the teaching lab before sessions.

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Biggs, J.B., 2011. *Teaching for quality learning at university: What the student does*. McGraw-Hill Education (UK).

Fung, D., 2006. *Telling tales: a fresh look at student experience and learning in higher education*, in: BERA Conference, Warwick, September.

Lueddeke, G.R., 2003. *Professionalising teaching practice in higher education: a study of disciplinary variation and “teaching-scholarship.”* *Stud. High. Educ.* 28, 213–228. doi:10.1080/0307507032000058082

Trigwell, K., Prosser, M., 1996. *Congruence between intention and strategy in university science teachers’ approaches to teaching*. *High. Educ.* 32, 77–87. doi:10.1007/BF00139219



### **Example Two – Snails and Rain: Leading a ‘Welcome Week’ Biology Practical**

This field practical took groups of ~16 newly arrived biosciences undergraduates around campus, where they were tasked with recording and marking garden snails, as an introduction to population monitoring. Whilst there was a scientific underpinning to the activity, this was the students' **very first** taught university experience. The practical was designed to make a good impression, provide social bonding opportunities, and help students get to grips with the layout of campus. These latter purposes are what I placed most emphasis on.

Most of the students had come immediately from A-level teaching, and it became quickly apparent that some did not adapt to being led by a near-peer as readily. Near-peer teaching is something I support wholeheartedly, particularly because of its proven benefits in providing role-models and improving ambition amongst students (Bulte et al., 2007), and seemed ideal for this practical. I attempted to encourage a more informal rapport from the beginning, providing information on my background and science. From experience this is usually well received, however a major hurdle was the absence of any yet developed specific scientific interests from the students – they hadn't been biologists long enough. This was not a problem I had encountered before when teaching, but was similar to outreach experiences. It now acts as reminder for me to better adapt my approach based on academic level.

Once the practical was underway I tried to push more general conversation and give something of a tour, partly so the students could get to know each other and become familiar with the campus. This had a mixed effect – some students reacted well, and naturally began conversation offshoots amongst themselves, leading me to think I will apply that approach in future. Others – who were particularly enthusiastic about the science at hand – clearly found the perceived tangential direction of the discussion to be frustrating. Whilst I feel comfortable respecting and dealing with the needs of individual learners in terms of ability, I found it difficult to balance different priorities amongst the student group. This difficulty became aggravated when we were caught in prolonged rain. Those students who were keen on continuing the practical were at odds with those who would rather keep dry and discuss non-snail-related matters. This kind of field incident is widely ignored in much of the education literature (e.g., little mention of field teaching in Race (2014)), as it is highly discipline specific. I discussed this motivational difficulty with other PTAs more accustomed to field work after the session, as well as the module convener as to whether it was correct of me to offer an early finish to those group members who were clearly not enthusiastic about the session once it began to rain. No students did in fact opt out early - and being made aware it was their choice to stay seemed to improve moods, interest and group cohesion. I therefore consider my decision to have been the right one. Retrospectively, I see the experience as a lesson in providing choice to undergraduates with respect to their learning.

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Bulte, C., Betts, A., Garner, K., Durning, S., 2007. Student teaching: views of student near-peer teachers and learners. *Med. Teach.* 29, 583–590.  
doi:10.1080/01421590701583824

Race, P., 2014. *The lecturer's toolkit: a practical guide to assessment, learning and teaching.* Routledge.

### Example Three – One-To-One Statistics Tutorials: Striking the Balance

Finalist students were given the opportunity to book one-to-one, 30 minute statistics tutorials for their honours projects. Tutors were under strict instruction as to what help we could give, as projects needed to be the student's sole work. This presented a range of challenges. Statistics and programming are some of the most widely disliked or perceived as difficult topics amongst undergraduates – particularly at institutions like Exeter which do not require maths A-level. Statistics in biology has evolved very rapidly over the last decade, and there are strong arguments within the STEM-education literature that rapid development inevitably leads to academic elitism, where only the strongest students with the correct background knowledge can keep up with the syllabus (Muller, 2014).

Trying to counter this difficulty in a single half-hour session proved challenging, especially in approach. A one-to-one tutorial focussing on the student's own work, where they must come to the correct end of their own accord, is a style of learning typically aligned with 'conceptual change' (Lueddeke, 2003; Trigwell and Prosser, 1996); however the nature of the task at hand – for which there is a simple right answer – is an exercise in 'information transfer'. This troubled me. I focussed on creating questions with the students which they needed to be able to answer to correctly perform their statistics, as well as spending up to a third of the sessions detailing where they would find suitable help – particularly textbooks. I convened with the other tutors, and accounts were similar amongst all of us; some tutors were giving much longer sessions for no pay. Having described my tactic of signposting where next to look, the other tutors incorporated that as part of their sessions, with apparently good results. I consider developing these abilities to teach one-on-one important; I expect that increasing individualised teaching will be a widespread response to the TEF, which will majorly influence my career.

The other major challenge was a discord between the level of ability students were expected to evidence according to the syllabus, and the approaches they were instructed to attempt by their supervisors - the latter more complicated. I believe this is part of a wider issue STEM where academics are researchers first, and teachers second (Porter et al., 2006); supervisors err on the side of getting publishable work out of dissertations. This is a researcher-oriented consequence of the wider context of H.E.: the academic landscape of 'publish or perish'. The students seeking help were typically not the most able, and so were the wrong candidates to push for an early publication. My reaction to this frequent problem was to make it clear what students needed to do to achieve the higher marks, and then framed the choice to undertake something more complicated in the context of their career ambitions. I called in to discuss this with the honours project convener for biology and discussed it at length with the other tutors. All agreed that this tactic was the best option, and our feedback provided a mandate for the problem to be raised amongst senior academics.

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Lueddeke, G.R., 2003. *Professionalising teaching practice in higher education: a study of disciplinary variation and "teaching-scholarship."* *Stud. High. Educ.* 28, 213–228. doi:10.1080/0307507032000058082

Muller, J., 2014. *The future of knowledge and skills in science and technology higher education.* *High. Educ.*, 1–8.

Porter, A.L., Roessner, J.D., Oliver, S., Johnson, D., 2006. *A systems model of innovation processes in university STEM education.* *J. Eng. Educ.* 95, 13–24.

### Example Four – Teaching MSc Students: Navigating the near-peer boundary and perceived authority

Across my higher education employment, the most common course I have taught is statistics and R (programming language) at Masters level. One particular personal teaching challenge that I have reflected on extensively is navigating the near-peer teaching boundary when the students perceive me (correctly or otherwise) as their junior in age. To contextualise, this sort of demonstrating typically involves classes of 50+ students, working at computers, following guides and question sheets, with roaming demonstrators at hand to tackle questions. These practical sessions conflate teaching the concepts and application of statistics with programming in the R language, with students rarely being confident at both. This combined focus, and the complexity of statistics widely adopted across ecology and environmental sciences, creates a fairly unique teaching paradigm which can be difficult to advise upon from more general sources – a problem recognised throughout STEM, where a balance must be struck between acknowledging the unique demands of topic-specific teaching and not succumbing to myopic views of how to teach (Skelton, 2004).

In dealing with students who are likely to perceive me as near-peer, I have often relied on the admission that R & stats is a necessary evil, and that I only enjoy it after being forced to learn the program well during employment, citing difficulties in grasping the subject during my taught degree. From my perception of student attitudes and unsolicited feedback from students, this informal, pragmatic admission seems successful. However a subset of students – mature students studying for Masters degrees – as a rule struggle more with these modules and do not seem responsive to this personal narrative tactic. Replies to encouragement often refer indirectly to age – e.g. “*Its hard to pick this up at my age*”, “*I’m too old to learn this new stuff*”, “*I didn’t grow up with this technology like you did*”. Unwillingness to learn is often cited as a common frustration amongst new lecturers dealing with (younger) students (Barlow and Antoniou, 2007), however there is little discussion of the reverse situation. I’ve discussed this with many of my peers as well as some mentors, although am conscious that amongst the PTAs I am relatively young and perceptibly younger than reality, making it harder to find similar experiences. Part of the issue is certainly my lower confidence in dealing with learners who are significantly older than I am, with extensive career experience, as it disarms my usual tactics of framing programming and statistics as a major help when applying for future career steps (despite this remaining true).

I have not yet finished tackling this challenge, although replacing my own personal narratives with discussion of the lecturers who had to adapt to new technologies has been a successful improvement. It will be difficult to say whether time and experience lead to better solutions to the problem, or if simply being older and with more experience will change the student-teacher paradigm and remove the problem.

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Barlow, J., Antoniou, M., 2007. Room for improvement: the experiences of new lecturers in higher education. *Innov. Educ. Teach. Int.* 44, 67–77.

Skelton, A., 2004. Understanding “teaching excellence” in higher education: a critical evaluation of the National Teaching Fellowships Scheme. *Stud. High. Educ.* 29, 451–468.

### Other Information

Having taught in Higher Education formally for over two years, with a will to continue doing so for the rest of my career, this application feels fitting to the experience and intention I have. It provides a remit for me to set aside time alongside my research to reflect and develop my skills in outreach, learning support and active teaching – something I am fortunate in not having to defend verbally to my supervisors, but would value when speaking with Doctoral Training Programmes. I have focussed on gaining as broad a teaching experience as possible to best understand what teaching in my discipline fully involves – for example, the BES residential field course, an opportunity my department doesn’t provide. Formal accreditation as a result of these efforts would then allow me to seek out ‘higher levels’ of experience, with opportunities to teach entire modules during my time as a visiting researcher at [REDACTED] (soon to commence). Further, I respect the efforts made by my institution to pioneer reflective teaching practice across all levels of teaching, and consider applications to ASPIRE to be a mutual benefit for both myself and University of Exeter.

## SECTION FOUR – Referees

### First referee

**Name:** [REDACTED]

**Job title:** Lecturer

**College/Service:** CLES - Biosciences

**Email address:** [REDACTED]

[REDACTED] was the module convener for various classes I taught, including the critical thinking seminars and essay skills group teaching. Consequently, I discussed teaching ideas more extensively with [REDACTED] as there was greater scope for PTA-led approaches, as well as reported to [REDACTED] with some of the issues discussed above. [REDACTED] took the time to informally observe episodes of my teaching as part of good practice and to give feedback, as well as formally observing one of my 2-hour seminars (see attached observation and reference based on that teaching episode). Further, [REDACTED] co-ordinated a lot of the career, learning support activities, and outreach both on and off campus which I was involved in. These included undergraduate careers fairs, presentations given to MSc students who wished to apply for PhDs, as well as public and schools outreach such as 'Science in the Square' - which I was part of [REDACTED] team in delivering. [REDACTED] therefore witnessed the full spectrum of my teaching and learning support styles: ranging from my more formal lecturing style ('How to get a PhD'), to my seminar and group discussion teaching, to my most informal / conversational approaches when doing careers fairs / outreach. Further, [REDACTED] method of teaching and interacting with students was always based on mutual respect, honesty, and a conversational style of exchange, an approach I greatly admire and draw inspiration from.

### Second referee

**Name:** [REDACTED]

**Job title:** Lecturer [REDACTED]

**College/Service:** CLES – Biosciences

**Email address:** [REDACTED]

[REDACTED] was the biosciences convener for the 1-on-1 statistics tutorials we ran in collaboration with the academic skills team (ASK). As such, [REDACTED] was the first port of call for questions or feedback on specific problems and overall feedback on how the 3<sup>rd</sup> year undergraduates were responding to the tutorials, or what difficulties they were experiencing as a cohort. [REDACTED] worked alongside the tutors to try and boost numbers attending tutorials as soon as possible, conscious that we were seeing signs of most students waiting until close to the hand-in deadline for help. Further, [REDACTED] was available to speak to me when I raised questions of approach, especially in respect to students who were being asked to attempt statistics well beyond what the syllabus called for. Following the end of the tutorial period, [REDACTED] solicited conversational feedback which could be implemented in the future as part of planning for honours projects, and to improve the ongoing tutorials for the following year. More generally, I would consider [REDACTED] to be one of the senior academics in the department who I speak to frequently and freely, and so has a good measure of my teaching endeavours and approaches, as well as full knowledge of my other activities in supporting learning and widening access to higher education. [REDACTED] is very well respected in the department as an enthusiastic and innovative lecturer, with a wealth of experience and insight into teaching ecology from the classroom to the field. I consider [REDACTED] style of teaching, and more broadly [REDACTED] persona as an academic, as something I aspire towards.



## LTHE Record of Teaching

### University of Exeter Teaching:

Module / Title	Date(s)	Hours	Students	Description
Geographical Information Science and Systems	Autumn Term 2014: Weeks 1 – 7	Six 2 hour teaching sessions + 1 hour prep. time per session <b>Total: 18hrs</b>	~ 50 students 2 <sup>nd</sup> year undergrads - geography	<ul style="list-style-type: none"> <li>Six computer practical sessions working on increasingly complex single mapping project</li> <li>1<sup>st</sup> experience with GIS</li> <li>Detailed guidance / instructions – mostly an exercise in attention to detail, <b>forward reading</b>, good file organisation</li> </ul>
Exploring Data and Comparing Groups in R	24/10/14	Two 3 hour sessions + 1.5 hours prep time <b>Total: 7.5hrs</b>	~35 students 2 <sup>nd</sup> year undergrads – biosciences	<ul style="list-style-type: none"> <li>Comp lab demonstration – statistics and R</li> <li>Important to differentiate between stats and programming aspects when teaching</li> </ul>
Critical Thinking & Scientific Reasoning - Scientific Paper	05/02/2015, 06/02/2015	Two 2 hour sessions + 45 mins prep time <b>Total: 4.75hrs</b>	~18 students 2 <sup>nd</sup> year undergrads - biosciences	<ul style="list-style-type: none"> <li>Journal club style 2 hour seminar – small group work followed by larger discussion, <b>marks for participation / effort</b></li> <li>Assigned each student a number + called on them to start next discussion point each time</li> <li>Biggest challenge in persuading students to understand how hard science / publishing is – can't expect perfection</li> </ul>
Critical Thinking & Scientific Reasoning – How To Give A Talk	26/02/2015, 27/02/2015	Two 2 hour sessions + 45 mins prep time <b>Total: 4.75hrs</b>	~18 students 2 <sup>nd</sup> year undergrads – biosciences	<ul style="list-style-type: none"> <li>Small groups give presentations on different papers – whole class feedback + input from me, <b>marks for participation / effort</b></li> <li>Important to stress simplicity and clarity – <b>always</b> too much text</li> <li>Give praise where it is due, especially for good verbal delivery / articulation</li> </ul>

Critical Thinking & Scientific Reasoning – Formal Debate	13/03/2015 13/11/2015	Two 2 hour sessions + 45 mins prep time <b>Total: 5.5hrs</b>	~18 students 2 <sup>nd</sup> year undergrads – biosciences	<ul style="list-style-type: none"> <li>• Small group debates on pre-researched topics, <b>marks for participation / effort</b></li> <li>• Can't expect formal debate experience – concentrate on logical fallacies</li> <li>• Rigorous turn-to-speak structure to avoid few students dominating the class.</li> </ul>
Statistical Modelling	January – February 2015 Weeks 2-7	Five x two 3 hour sessions + 3 hours prep time per week <b>Total: 45 hrs</b>	~ 50 students MSc – biosciences	<ul style="list-style-type: none"> <li>• Computer practical sessions – statistics and R, from basics to ecology publishing standard</li> <li>• Assumes background statistical knowledge as MSc course</li> <li>• Course covers a lot of ground – must ensure statistical concepts are understood for programming skills to be worth learning</li> </ul>
Key Skills – Essay Writing for Exams	10/3/2015	One 3 hour session + 30 mins prep time <b>Total: 3.5 hrs</b>	~ 65 students 1 <sup>st</sup> year undergrads – biosciences	<ul style="list-style-type: none"> <li>• One-off 'practical' / 'lab' session which actually focuses on exam technique – what warrants a 1<sup>st</sup> class mark etc</li> <li>• 1<sup>st</sup> year students – must move away from A-level thinking</li> <li>• Attainability of high marks – possible just by knowing your subject matter very well</li> </ul>
Population Monitoring: 'Scavenger Hunt'	15/09/2015	One 3.5 hour session <b>Total: 3.5 hrs</b>	~16 students 1 <sup>st</sup> year undergrads – biosciences	<ul style="list-style-type: none"> <li>• First experience of teaching for new batch of UG students</li> <li>• Biological lesson objectives second to social acclimatisation of new students at university</li> <li>• Outside – group work. Challenge to keep track and speak to everyone individually</li> </ul>
Analysis of Biological Data	22/10/15, 23/10/15, 12/11/15, 13/11/15	Two twice-taught 3 hour sessions + 1.5 hour prep time each <b>Total: 15 hrs</b>	~35 students 2 <sup>nd</sup> year undergrads – biosciences	<ul style="list-style-type: none"> <li>• Comp lab demonstration – statistics and R</li> <li>• Mostly an exercise in building confidence with unusual user interface and showing simplicity of programming commands</li> <li>• Later sessions can build on core statistical idea building, once fear of programming is lessened</li> </ul>

Species Area Relationships: Rocky Shores	20/10/2015	1 hour session <b>Total: 1 hr</b>	~40 students 2 <sup>nd</sup> year undergrads – biosciences	<ul style="list-style-type: none"> <li>• Comp lab demonstration – statistics, R and ecology</li> <li>• Mismatch in teaching year means skills required haven't been used since 1<sup>st</sup> year</li> <li>• Student mathematical knowledge often rusty – makes discussion difficult</li> </ul>
Discussion: De-Extinction	03/11/2015	2 hour session + 1 hour marking <b>Total: 3 hrs</b>	7 students in group, part of class of ~70 2 <sup>nd</sup> year undergrads - biosciences	<ul style="list-style-type: none"> <li>• Facilitate small group discussion, with marks awarded for contribution</li> <li>• Marks part of Athena SWAN analysis – females on average under-perform</li> <li>• Not to lead discussion – but must moderate (chair – in my mind) to allow for all to speak</li> <li>• Individual feedback and mark justification given to each student – liaise with convener and other demonstrators for consistency</li> </ul>
Statistics Tutorials: Dissertation Projects	January – May 2015	11 sessions – 30 mins + 15 mins prep time each <b>Total: 8.25 hrs</b>	1 – on – 1 tutorials: 3 <sup>rd</sup> year undergrads – biosciences	<ul style="list-style-type: none"> <li>• Tailored stats advice for 3<sup>rd</sup> year students doing research projects</li> <li>• Directed advice / instruction boundary – latter not allowed</li> <li>• Deal with mismatch between syllabus-level stats and supervisor's desired stats</li> <li>• Context of individual aspirations / abilities – including career</li> </ul>

## Additional (Non-Exeter) Teaching:

Activity	Place / Date(s)	Approx. Hours	Students	Description
MSc Statistics Demonstrating	University of Exeter – Autumn 2013	20 hours active teaching	~75 MSc students – geography / environmental sciences / ecology mixed	<ul style="list-style-type: none"> <li>• Demonstrated full course on stats and programming in R</li> <li>• Basic introduction through to linear modelling - comprehensive</li> <li>• Marked coursework</li> </ul>
MSc Statistics – Tutorials	University of Exeter – Autumn 2013	9 hours active teaching	1-on-1 Masters students – requesting help / additional stats teaching	<ul style="list-style-type: none"> <li>• One-to-one tutorials for students who request extra help with statistics / coursework</li> <li>• Frequently mature students</li> <li>• Coursework assessed – help given cannot be too guided.</li> </ul>
British Ecological Society Ambassador – Training day	BES Offices – 9/10/2015	Full day of training – 8 hours	N/A	<ul style="list-style-type: none"> <li>• Training in delivering ecology-based lessons to A-level students</li> <li>• Focus on outreach and exposure</li> <li>• Overlap with LTHE course – good refresher on learning outcomes / objectives, lesson planning etc.</li> </ul>
British Ecological Society – Undergraduate Summer School - Field Course Mentor	20/07/2015 – 24/07/2015  BES – Malham Tarn Field Studies Centre, West Yorkshire	20/07/2015 – 24/07/2015 <b>Residential</b> + full training day and extensive prep time  <b>5 days</b> on site + approx. >20 hours prep / planning / training	56 1 <sup>st</sup> year biology undergrads – institutions from across UK (approx. 50 Universities)	<ul style="list-style-type: none"> <li>• Field course mentor for 1<sup>st</sup> ever BES summer school – part of team of 6 PhDs</li> <li>• In charge of entire social program –spanning 9pm onwards each day + morning activities</li> <li>• Expected to assist with teaching sessions</li> <li>• Expected to offer careers advice and 1-on-1 CV / career tutorials</li> <li>• Exploit 'near-peer' PhD position to act as approachable staff member and mentor for UGs</li> <li>• Large number of UGs older than myself – manage dialogue accordingly</li> </ul>



## Peer Observation of Teaching Record

<b>Name and role of person observed</b>	██████████ Senior Lecturer (Biosciences) - Lecturing
<b>Programme of study</b>	2 <sup>nd</sup> Year Undergraduate Biologists
<b>Title of module</b>	(BIO2422) Critical Thinking and Scientific Reasoning
<b>Level of module</b>	2 <sup>nd</sup> Year UG
<b>Location of class within the module</b>	Week 6 – Autumn Term
<b>Type of class (lecture, lab, seminar...) or 'teaching episode' within the class<sup>1</sup></b>	Lecture – observation of full session
<b>Number of students</b>	80+
<b>Name of observer</b>	██████████

<sup>1</sup> It is sometimes helpful to nominate a specific 'teaching episode' or activity for observation, rather than a whole 'class', particularly if it is a long session, or if the person being observed plays a specific role in leading or supporting a particular kind of learning activity.

**1 Preparation - before the class is observed:** to be completed before the class by the person being observed, and given to the observer before the class

### **Broad aims of this class within the programme**

*The lecture is part of the key skills series which 2<sup>nd</sup> year undergraduates are put through to better prepare them for future exams and projects.*

*Session aims to give first pointers in how to develop an appropriate scientific writing style, separated then into essays for exams and 'paper-style' writing for projects. It is a first introduction to what will be their third year project.*

*Students should start referring to help available on scientific writing, and begin applying ideas in their essay writing in preparation for further assessment. They should also begin thinking about research project directions.*

### **Specific intended learning outcomes of this class**

**By the end of the session, students should be able to:**

- > Practise scientific writing for essays
- > Reflect on how what makes good and bad scientific writing
- > Plan the outline of a scientific paper

### **Students' preparation for this class**

*Students are expected to have attended lectures and discussion groups in the module. They should be familiar with the concepts of critically reading scientific writing, putting together arguments, how to present scientific findings.*

### **Assessment of the intended learning outcomes**

*Assessment will be inherent in other teaching tasks which require writing. Informal assessment optional through ASK / tutors.*

*Other assignments may use 'LERO' system to make assessment criteria clear when met.*

### **Students' learning after the class**

*Students will be expected to apply concepts covered in the lecture in the following practical for this module, where they will write up a simple paper as a teaching exercise.*

*Students will have the option to write an essay for their tutor to mark.*

*Otherwise, application of concepts throughout the rest of their learning.*

**2 Observation of the class:** to be completed immediately after the class by the observer, and given, with verbal feedback, to the person who being observed.

### Opening the class

■■■ opened the class informally, asking for feedback on the module, and in particular requesting improvements that could be made immediately (for the remainder of the course).

The outline of the lecture was then overviewed, with differentiation between writing for essays, exam essays, and research projects. I would question the degree to which essay writing and report writing were communicated as the same skill, as I didn't regard them as such.

■■■ drew parallels with previous bits of writing the students were likely to have done, but also signposted what was likely to be novel about the writing they are expected to do from this point forward. This successfully placed the content of the lecture in a context of prior knowledge and learning goals, and something I will remember for my own talks and teaching sessions, especially when teaching often more challenging 'core skills' such as this.

### Main part of the class

Structure of the talk was clear throughout, with a split in topic from exams to research project half way through. Each slide was clear as to the main points, and appropriately broke up the topics covered, without singular slides either too broad or too niche.

■■■ varied ■■■ pacing throughout the lecture, taking on a slower rate of speech when discussing novel points, or ideas the students are unlikely to have seen before, compared to points the students had already encountered – this is definitely something I would like to try in my own teaching, and more widely in talks I give elsewhere. It is a simple and subtle technique that helps break up the principally didactic teaching method, and makes best use of time.

■■■ broke up the lecture with a more engaged session, comparing between two example essay introductions. Whilst the idea was clearly well received and certainly improved the lecture and engagement, it may have been better placed at the half way point in the lesson. This would have meant that all the concepts to be introduced relating to essay writing could be applied to the critical analysis. Further, the 'break' in the didactic teaching would have been more worthwhile at the half way mark, the 15 minute one being a bit soon to reap full effect of allowing students to talk and then re-focus.

The discussion of the research project, and how we write scientific papers / reports, was well structured. However most of the points ■■■ introduced remained as general, amorphous concepts. The lecture may be improved by providing very explicit examples – from papers – and highlighting exactly what makes a paragraph or figure good.

Engagement was higher than I anticipated for this type of lecture at 5pm on a Friday. ■■■ made a point of being honest in ■■■ appraisal of writing, recognising the struggles ■■■ faced and still faces in doing scientific writing. Anecdotes and humour were employed throughout, which helped to temper the otherwise dry topic. ■■■ still however took the work seriously, and consistently referred to the work the students would undertake as 'science' and the writing of 'their papers' – this subtle use of language was important as it didn't trivialise the work the students would undertake, or skills she was trying to introduce.

**Closing the class** *Summary of learning achieved - further linking to later/parallel work - expectation of learning activity to be undertaken after the class?*

Throughout the session ■■■ referred to when and how every point discussed would be applied and how it could be practised. ■■■ clearly signposted the resources in the university (ASK, tutors) which students could utilise, and

referred to specific future teaching episodes. This included the planned practical as part of this module, stating what they can expect to do during it and how they would be expected to employ the content of the lecture.

Skills were framed in the content of future exams, drawn against marking criteria and when students would be expected to be able to successfully write exam essays and scientific reports.

further introduced the next lecture which would be delivered, and explicitly stated which points would be expanded on during that session. invited questions, and following the end of the lecture some students remained behind to ask for advice or clarification, especially about their ideas for research projects.

### **Overview**

Pacing the lecture was a particular strength and something I would certainly maintain. Similarly, rapport with the students struck the balance of tone between respectful and honest / informal, an approach I think works very well when dealing the dry, but critical, skills such as scientific writing.

Resources were exhaustively pointed out with a high degree of clarity, and again was a strength of the session.

### **Quality of the apparent student learning experience in this class:**

#### ***Points of good practice worthy of wider dissemination***

Variation in pace in line with degree of novelty of information / points / concept is something I think greatly helps with didactic teaching, and is something I certainly think would work well in my teaching and all talks I give in general. It is something I plan to watch out for in other lectures and recommend when giving future feedback.

The tone of the lecture was also very well thought out, especially the subtle types of language used. coupled an informal, often personal / anecdotal approach with language that always referred to the student's work as 'science', 'research', and their writing as 'their papers'. This combination meant that there was a degree of respect / peer-mentoring underlying the talk, which is of great value when dealing with dry topics. The informal tone kept students engaged, whilst the use of serious language ensured the skills weren't trivialised. This is something I think a lot of teaching could benefit from and I will be drawing upon it elsewhere in my practice.

#### ***Suggestions for areas to develop***

More specific examples of good practice throughout the lecture, with exact critical appreciation of what makes for good scientific writing would benefit the lecture. Currently, many points seem amorphous and in a way 'obvious' without examples of how to precisely implement the concepts introduced. This may put a greater time constraint on the sessions but I think would greatly help with demonstrating the point, and could be expanded to be easily interactive. This kind of exercise could also be easily linked to previous sessions in this module, especially the discussion seminars which students seem to respond well to.



**3 Reflection following the class :** to be completed by the person who taught (or supported learning in) the class, following receipt of the observer's comments

**Reflection on achievement**

*The lecture went as well I could have hoped. It is a topic I don't enjoy teaching. Students seemed engaged for the time and topic. I was glad to see some stayed behind to ask questions after the lecture. I was pleased with the amount of feedback that the students gave as this module needs continual improvement.*

*We will monitor how many students opt to hand practise essays to their tutors and what uptake of ASK resources is from this cohort.*

**Reflection on planning**

*The interactive parts of the lecture were not enthusiastically met. Part of that is the placement of the lecture in the day and the topic. Students have the opportunity for extended discussion throughout this module in their seminars. It is not crucial they speak during lectures, but would improve it. It is probably worth setting a task in the lecture which they will be asked to speak about in a future discussion group.*

**Reflection on observer's feedback**

*██████ and I discussed whether there needs to be greater demarcation between essays and reports. We agreed that referring to review papers as essays in future would be beneficial. ██████ agreed with me about not painting the skillsets at too different at this stage.*

*The point ██████ makes on structure and moving the critical reading of example introductions is a fair one. Students will be better placed to analyse the excerpts after seeing all the appropriate slides and the break would be better placed at the actual half-way of the lecture.*

*I was interested to hear ██████ comments on my pace variation depending on what I was talking about and the language I used. These are things I haven't consciously focussed on developing and will take notice of them in future. I expect these qualities are marks of experience ██████ will gain with time but are clearly worth sharing with new teachers.*

## Peer Observation of Teaching Record

<b>Name and role of person observed</b>	██████████ (PhD Student) – leading seminar
<b>Programme of study</b>	2 <sup>nd</sup> Year Undergraduate Biologists
<b>Title of module</b>	(BIO2422) Critical Thinking and Scientific Reasoning
<b>Level of module</b>	2 <sup>nd</sup> Year UG
<b>Location of class within the module</b>	Week 3 of Term 2 (where most of this aspect of the module is covered – approx. 8 weeks total)
<b>Type of class (lecture, lab, seminar...) or 'teaching episode' within the class<sup>2</sup></b>	Seminar – observation partial throughout full session
<b>Number of students</b>	18
<b>Name of observer</b>	██████████
<b>1 Preparation - before the class is observed:</b> to be completed before the class by the person being observed, and given to the observer before the class	
<b>Broad aims of this class within the programme</b> <i>The seminar is designed as the first encounter the students will have had with reading a scientific paper – particularly an experimental paper rather than a review. It is important the students realise that published science is not necessarily infallible and that all papers will have flaws / weaknesses as well as positives. Students should hopefully become confident discussing the merits and disadvantages of specific papers with their peers. They should also hopefully understand the roles publishing requirements and the guidelines of specific journals can play in scientific research (and what implications this has).</i> <i>They may also touch on representing science in the popular media and extend their critical viewing to outside paper, if prior topics run dry with time to spare.</i>	
<b>Specific intended learning outcomes of this class</b> <ul style="list-style-type: none"> <li>&gt; Discuss with their peers their opinions on particular research</li> <li>&gt; Critically evaluate a scientific paper based on both its methodology and communication</li> <li>&gt; Explain some of the roles publishers can play in how scientific research is communicated</li> </ul>	

<sup>2</sup> It is sometimes helpful to nominate a specific 'teaching episode' or activity for observation, rather than a whole 'class', particularly if it is a long session, or if the person being observed plays a specific role in leading or supporting a particular kind of learning activity.

### **Students' preparation for this class**

*Attend the 4 lectures in the module covered so far. Otherwise no preparation was asked – material to be critically evaluated should not have been seen until introduced in the seminar.*

### **Assessment of the intended learning outcomes**

*Assessment is principally going to be informal through group discussion throughout the 2 hour seminar, but contribution to the seminar is marked and forms part of their module grade. Students will be encouraged to engage with class discussions – techniques to give each student an opportunity to speak will be used (e.g. students given a number and each number volunteered to start a new discussion point). Quality of knowledge or input is not necessarily crucial, but a willingness to venture ideas and adopt a critical mind frame. Ability to listen and respond to other's comments insightfully or constructively is highly desirable.*

### **Students' learning after the class**

*Ideally, students will begin critically evaluating papers they read from now on throughout the rest of their course modules. This should be a fairly organic process alongside their wider scientific learning. The need to extend this practise in their wider learning will be stressed during the seminar.*

*Final assessment for this class will be part of their summer term exam (when they will have had more opportunities to critically evaluate papers and hopefully become more familiar with scientific literature). It is expected that their progress evaluating scientific literature will form a core part of the rest of their learning outside this module.*

**2 Observation of the class:** to be completed immediately after the class by the observer, and given, with verbal feedback, to the person who being observed.

**Opening the class** *Clarity of purpose/intended learning outcomes - review of previous work - links to other classes/module/programme - activity expected of the students in the class - reference to assessment?*

The opening of the class was very effective. [redacted] greeted each member of the class as they entered the seminar room, encouraging them to complete the register and providing them with a numbered piece of paper. [redacted] introduced [redacted] well and very quickly showed that [redacted] was friendly and approachable which enabled the students to relax and to promote a comfortable environment for learning. This is an important aspect of these seminars during which participation is of the greatest importance. Throughout the seminars we wished to ensure that students had the confidence to provide answers even if they weren't certain that they were correct, and were happy to engage in discussion about their opinions on the scientific content and writing style of the scientific paper that was chosen for the session. [redacted] provided a good introduction to the content of the session and showed clear enthusiasm for the importance of gaining the skills to evaluate papers in a wider context.

The students had received similar assessment for previous sessions during this module and were aware of the assessment format before attending this session.

**Main part of the class** *Appropriateness of structure, presentation and pace - sensitivity to students' reaction - variety of learning activities - conveying enthusiasm? Engagement of students in active learning?*

The students were encouraged to read the paper and it was clear that they were engaged during the reading. They were then given defined times to complete each activity and the structure of the session was made clear. The students discussed the content and style of the paper in small groups. [redacted] had arranged the tables before the session to encourage small group working. [redacted] circulated around the room during the discussion section to listen and to provide insight. One real positive to this section was that [redacted] had made some expectations very clear. He asked that each group agree on several aspects of the paper that they would improve that could be shared with the class during a larger discussion. This provided an excellent basis for discussion of the paper and provided a motivating factor throughout the discussions. In addition, [redacted] made the class aware that they would be required to provide an answer during the main discussion that would be allocated based on the number that they had been given when they entered the seminar room. During the period that [redacted] was circulating around the groups [redacted] asked the students questions that related to the paper. An area to improve would be to ask more open questions that would provoke a deeper consideration of the material and learning. In addition, providing a little longer for students to answer before providing a prompt is likely to be highly beneficial too. It was clear that the students were happy to engage with [redacted] during this discussion. Whilst reminders were given about the amount of timing remaining for activities there were some groups that were less engaged. It would be useful to have additional questions to provoke renewed discussion in these groups. Following the discussion [redacted] led an extended discussion with ease. The use of numbers provided a good level of engagement and ensured that students were fully focused on the questions. [redacted] offered additional background with answers and the discussion encouraged students to ask their own questions too.



**Closing the class** *Summary of learning achieved - further linking to later/parallel work - expectation of learning activity to be undertaken after the class?*

■■■■ reviewed the session and encouraged the students to use critical thinking on a broader basis during their studies. ■■■■ provided assessment marks for their contribution during the session and several students stayed behind to ask ■■■■ more about his research.

**Overview** *Appropriateness of structure/pace - effectiveness of presentation - encouragement of personal skills development - appropriate use of resources - rapport with students - motivation/engagement of students?*

In overview, the session was taught very well and as the module convenor I was happy that the students had gained the skills that the session was designed to facilitate. ■■■■ had a good rapport with the students and ■■■■ made the content interesting and showed that ■■■■ valued the points of discussion that the students introduced.

**Quality of the apparent student learning experience in this class:**

***Points of good practice worthy of wider dissemination***

- ■■■■ had clearly considered the potential difficulties of encouraging all students to engage in the discussion. ■■■■ use of numbers to ensure that all students would provide an answer was effective and ensured that students were focused on the material.
- ■■■■ was approachable and clearly had a good rapport with students. This resulted in an effective learning environment that encouraged students that were less confident to voice their ideas.
- ■■■■ used ■■■■ own experience in research to add background which clearly demonstrated to the students that the skills that they gain when evaluating material are of use in a real research context.

***Suggestions for areas to develop***

- Try to ensure that you ask open questions that encourage students to provide extended answer to promote deeper learning.
- Try to make sure that you check regularly that each group is still focused on the study activity and consider additional extension activities/questions for those groups that have completed the main points for discussion.

**Reference for ASPIRE HEA application for Associate Fellow status:**

At the time of writing this, [redacted] has been based in biosciences for 12 months and has been actively teaching since [redacted] arrival. I have known [redacted] throughout [redacted] time here, observed [redacted] practice on multiple occasions, spoken to [redacted] about teaching, and given feedback on [redacted] ideas. [redacted] has always appeared enthusiastic about demonstrating, and clearly views teaching as important to both to [redacted] career and in its own right. [redacted] has taken the initiative to go beyond the minimum instructions given to PTA demonstrators - particularly when leading seminars. [redacted] has been innovative in teaching methods and contextualised [redacted] proposed modifications with educational theory. I was keen to see [redacted] share and reflect on these proposals, especially when they drew on [redacted] expertise – for example, [redacted] knowledge of formal debating was put to use in restructuring our scientific debate seminars, with positive feedback both from students and PTA colleagues.

Further, [redacted] has been involved with supporting learning and outreach events, readily putting [redacted] forward on occasions where I have needed volunteers. This included speaking to MSc students about getting a PhD, and the department's annual scientific outreach events, where [redacted] spoke to the public and helped showcase our 'live zone'. Again, [redacted] engaged wholeheartedly with these duties; for our outreach event, [redacted] designed and implemented additional child-friendly activities based on [redacted] prior experiences, and shared [redacted] ideas and responses with [redacted] peers and myself.

I also know [redacted] has been proactive in searching out opportunities to further develop [redacted] teaching, both within the university and as part of public or schools outreach; for example, ongoing involvement with British Ecology Society schemes. [redacted] commitment to professional development in this regard is without question.

Having viewed [redacted] teaching portfolio, and heard from other staff that what I have seen first-hand of [redacted] practice is true across all his teaching endeavours, I can confirm that [redacted] meets all UK PSF criteria needed to apply for Associate Fellow status of the Higher Education Academy through ASPIRE. I therefore fully support this application.

Signature: [redacted]

Date: [redacted]

Print name: [redacted]

Position: Lecturer in Biosciences

### 3 Reflection following the class : to be completed by the person who taught (or supported learning in) the class, following receipt of the observer's comments

**Reflection on achievement** *To what extent do you feel you achieved your aim(s) for this session? What were you particularly pleased with?*

*In this case, I divided my aims into two types: participation aims and learning aims. In terms of participation, I was keen to see every student participate in class-wide discussion. Whilst there will always be some students who are less inclined to speak, especially to the whole class, I was pleased that every student both raised a point and either responded to another student's comment on that point, or commented on a point raised elsewhere in the whole class discussion. Small group discussion posed less of a challenge as groups of 4-6 were small enough that all students could be seen to participate, especially with prompting. This achievement was my favourite thing about teaching the class, although room for improvement will always be apparent. I was especially glad to receive anonymous informal feedback students left on their number cards – much of which praised the opportunity to be called to speak specifically without feeling 'singled out'. I had been worried students would not respond well to being randomly called on, but the response was entirely positive and as described, helped me meet my participation aims.*

*In the context of learning aims, students were certainly engaged in assessing the paper, although were often overly-critical without due consideration for practical difficulties and publishing constraints. These were points I endeavoured to push throughout the discussion, and whilst slow on the uptake there was a noticeable tendency as the two hours progressed towards more balanced assessment of parts of the paper. The basic aim of being able to critically read a paper and identify the case for science being fallible was certainly met, and any further nuance of scientific publishing taken in by the students is a bonus. Trying to maximise this in future would be worth further consideration – however, time needs to be taken for students to move towards more nuanced ways of thinking – ultimately this module was an exercise in conceptual change. I was keen to provide evidence of my own experiences in my research of where these balances and constraints manifest – hoping that students would respond better to personalised accounts, as it can be easy to dismiss faceless authors as lazy or poor scientists. Spoken accounts on my behalf garnered interest, and some students stayed behind to ask further questions about what I said, something I consider to be a great compliment.*

**Reflection on planning** *If anything did not go as planned, was it a problem or a benefit? What is there to learn from it with regard to future planning?*

*The pacing of the lesson was different to what I anticipated, based on the speed at which the whole-class discussion progressed with previous groups. A previous group had been in danger of overrunning with the group discussion, without moving onto the 'bonus' learning objectives of media and public communication. Consequently I was conscious of not overrunning with this group, but the opposite occurred and I found myself frequently trying to draw out discussions to make best use of the time. I suspect this is a lesson all teachers quickly learn – the same class taught to different groups can be wildly different, especially in pacing.*

*There was a benefit to this, in that we could expand into the extra material on communicating research – I gathered an impression that this engaged some of the students more distanced from an interest in pure research and more inclined towards science for policy and education. Seeing how well this small section was received would probably lead me to make specific time for it in future, even at the slight expense of the main discussion.*

*A more amorphous learning experience for me would certainly be the need for flexibility in times of lessons,*

*and to adapt to how a class naturally paces itself. I've endeavoured to undertake some further reading in techniques to slow or speed up discussion-style practicals, but ultimately expect that built in contingency time and contingency topics will always be the number one solution. Fortunately, senior module conveners have unsurprisingly built these into lesson plans, evidence of the value of experience.*

**Reflection on observer's feedback** *Are these fair comments? Did anything here surprise you?*

*What action will you take to build on and share with colleagues the points of good practice noted by the observer, and to follow up any suggestions for development?*

*I consider the feedback to very fair– most surprising perhaps are the positive comments on my demeanour and rapport with the students. I am conscious that my teaching style, especially in the context of discussion practicals, is very informal; this sometimes leads me to worry that the teaching paradigm loses any sense of expertise or authority. This was clearly not perceived to be case, and I will endeavour to maintain the 'comfortable' atmosphere of my teaching to encourage students to venture opinions and thoughts – exactly what I hope my style achieves.*

*Feeding into this is my personalisation of evidence / examples from my own career. This is a technique I will now recommend to my PTA colleagues, as it something anyone can do and was identified here as effective. I began to do this naturally in response to over-critical attitudes, it is in my nature to speak about my own experiences, and would not have identified it as communicable technique without it being specifically pointed out here.*

*The point about open-ended questions being used more is very fair and something I have already begun work on. Retrospectively, I think this is a carry-over from the majority of my teaching being information transfer – especially in the context of my most taught subjects, statistics and programming. Whilst in those lessons I ask very specific questions to help guide students to the (only) answer, it is not the appropriate approach for these conceptual change teaching episodes. Having had this pointed out to me, I have begun cultivating the idea of different teaching headspaces for different topics and learning objectives – it is not enough just for me to have a 'teaching mode' – I need to develop different styles of teaching I can take on for different scenarios. This comment on favouring open-ended questions for discussion and concept work is a perfect example of why that is necessary.*

*I anticipate developing more open-ended questions and a better conceptual change style will also help me in keeping groups engage with questions whilst I am elsewhere in the class. My overly specific questions likely left the students with a false sense of having got to 'the desired answer', when what should have happened is a continuation of discussion developing deeper understanding of a more open ended question. This is something I will be making an effort to monitor, and am keen to see if purposeful use of more open prompts will also solve this problem. I'll further be consulting teaching guides and likely solicit advice from module conveners of further discussion practicals, if the desired improvement doesn't appear.*



## LTHE ASPIRE Reference Pro Forma

Name of the ASPIRE applicant: [REDACTED]

### Reference

[REDACTED] began his PhD at Exeter in September 2014, immediately and enthusiastically engaging with teaching, learning support, and outreach. Having already taught at previous institutions, [REDACTED] was confident in taking on a variety of different teaching opportunities and broadening [REDACTED] experience. [REDACTED] efforts across this last year are the basis for my full support of [REDACTED] application for Associate Fellowship of the HEA through ASPIRE.

[REDACTED] is an engaged, articulate, and personable PhD student, qualities which extend into [REDACTED] teaching and presentation styles. [REDACTED] makes a point of ensuring people feel at ease and comfortable around [REDACTED], which benefits [REDACTED] efforts as a tutor, post-graduate teaching assistant, mentor, and public-facing scientist.

My own experience of [REDACTED] teaching and learning support came about when I was recruiting statistics tutors as part of a joint endeavour with the Academic Skills Team (ASK) to offer 1-on-1 help for 3<sup>rd</sup> year finalists completing their honours projects. [REDACTED] was eager to help implement these tutorials, clearly placing a great deal of value on small group and individually tailored teaching. [REDACTED] was very proactive in this role – when uptake of the tutorials was initially low [REDACTED] prompted myself and the ASK team to remind students not to leave this resource wasted or until the last minute, and took opportunities when [REDACTED] was interacting with finalists (e.g. Careers Fairs) to promote the sessions. [REDACTED] drew on [REDACTED] knowledge and experience of both statistics and tutorial-based teaching to develop how best to use the tutorial time, with frequent discussion between [REDACTED] and our other two tutors. In particular, [REDACTED] highlighted the need to point students towards appropriate reference and help materials, and was mindful of the limited help tutors were supposed to offer when faced with direct questions on a student's individual project write up. When common issues were emerging in tutorials, which related back to the module and syllabus, [REDACTED] was quick to discuss them with me, and was clearly invested in giving critical insight and feedback on the way we run projects. This commitment to constant improvement and reflection on how we teach is exactly the sort of quality that leads me to support [REDACTED] application.

In addition to [REDACTED] teaching within university, [REDACTED] has frequently demonstrated a commitment to outreach and engagement. [REDACTED] has endeavoured to become involved in schools, public outreach, and science communication. Of particular note was [REDACTED] eagerness to volunteer to help with our department's annual 'Science in the Square Event'; [REDACTED] stepped up in front of a hundreds-strong public audience as part of a lecture on plant adaptations, including showcasing the physiological responses to eating hot chili peppers by consuming the world's hottest pepper live on stage. I'm also aware that following interest in [REDACTED] current and recently published work, he's given [REDACTED] own lectures, interviewed for podcasts, radio and print press, by student societies, regional and national media. [REDACTED] is unreserved in his willingness to extend scientific teaching and communication to outside of the university.

Overall, [REDACTED] has demonstrated a deep commitment to higher education, improving practice and [REDACTED] own personal development when teaching. [REDACTED] efforts to be proactive and engage with as broad a spectrum of learning as possible mark [REDACTED] as a deserving candidate for associate fellowship of the HEA, and I fully endorse his application.

Has the applicant shown you a copy of the application?

Yes ☒

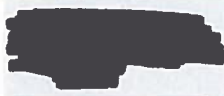
No ☐

Has the applicant shown you a copy of the LTHE Guidance Notes for Referees?

Yes ☒

No ☐

Signature:



Print Name:



Position Held:

Lecturer

Institution/Address:

University of Exeter  
Penryn Campus TR10 9FE, UK

Email Address:

