

## 2015 First Year Experience (FYE) grants Embedding transition pedagogies in the curriculum

### Application form

Project applications (expressions of interest) must be submitted on this form.  
Applications must be submitted by **January 19th, 2015**.

Applications are to be submitted by email to Kathy Egea, UTS FYE coordinator at [Kathy.Egea@uts.edu.au](mailto:Kathy.Egea@uts.edu.au).

<b>Project applicant/team leader:</b>	
Name: Megan Phillips	Position: Subject Coordinator, The Biosphere
Contact email: Megan.Phillips@uts.edu.au	Contact phone no:
Faculty: Science	
School/Department (if applicable): Environment / Life Sciences	
<b>Other applicants if team application:</b>	
Name: Dr Yvonne Davila	Position: Learning Designer, Science
Name: Dr Andrea Leigh	Position: Senior Lecturer, Science
Name: Dr Brad Murray	Position: Senior Lecturer, Science
<b>Title of project:</b> Engaging and inspiring first-year Environmental Science students through hands-on learning: Introducing a field trip component to The Biosphere	
<b>First year subject involved:</b> 91107 The Biosphere	
<b>Endorsement by Associate Dean (Teaching and Learning)</b>	
I ..... endorse this project application and confirm that embedding of the project outcomes in the subject will be supported by the Faculty.	
Signed:	
Date:	
<b>Have you received one or more FYE Grants previously?</b>	
<input type="checkbox"/> Yes – please attach a progress summary (max 1 page) for any 2014 grant that is not yet completed. Reports from earlier grants will be taken into account.	
<input checked="" type="checkbox"/> No – M Phillips, no previous (also: Y Davila & A Leigh, yes previous; B Murray, no previous.)	

## Project outline (max 1-2 pages) (See guidelines for detail)

### A brief description of the aims and rationale for the project

#### Background and Aim of Project:

Field trips are a major part of the curriculum for environmental science university students.

The benefits of field trips include:

- Increased motivation for learning<sup>1</sup> and enabling deeper learning through direct experience of field work<sup>2</sup>
- Delivery of real-world relevant content<sup>3</sup> and authentic activities for deeper learning<sup>2</sup>
- The acquisition of key knowledge, as well as practical and transferable skills through first-hand experience<sup>4,2</sup>
- Enhanced student retention<sup>2</sup>

Large class sizes have previously prevented field trips being undertaken in the first year core subjects of Environmental Science degrees. Environmental science students often say that they find it frustrating to not be experiencing field work until second year. From 2015, 91107 The Biosphere will cater to a specialised cohort of approximately 110 predominantly Environmental Science students, paving the way for a redesigned subject to incorporate authentic 'experiential learning'<sup>2</sup>. The new-look Biosphere will become the 'welcome mat' subject for new environmental science students. Through a field trip from the first year of an Environmental Science degree, the new field trip will serve to **improve student transition into their Environmental Science degree by building a sense of belonging and professional identity amongst like-minded peers and increase student engagement with hands-on field activities.**

In this project, our broad aim is to **support student transition and engagement in first-year environmental sciences.** To achieve this aim, we will develop a complete pre-trip, trip and post-trip series of learning activities<sup>5</sup>. The pre-trip workshop will **engage students with the importance of field-based learning.** The post-trip activities **provide ongoing opportunity for learning and reflection.**

A major consideration is that first year university students, particularly those from low socio-economic status backgrounds, can lack confidence in their academic abilities and self-esteem, which can in turn negatively affect their overall sense of belonging in higher education and their choices about seeking support<sup>6</sup>. Early efforts in building a sense of belonging among students, particularly those from low socio-economic status backgrounds, has been shown to pay dividends in terms of *both increased student engagement and the improved quality of learning they experience*<sup>6</sup>. Field trips present a unique and exceptional opportunity for Environmental Science students to grow confident in their abilities and their identities as scientists; they learn through hands-on experience with nature, within an inspiring natural green space setting, alongside their fellow students in a supportive team environment.

Field work activities positively impact student learning about Environmental Science<sup>7</sup>. However, common problems with undergraduate fieldwork are the lack of preparation and feeling overwhelmed and anxious in an outdoor learning environment, both of which act as barriers to learning<sup>8</sup>. To enhance pre-trip preparation and alleviate pre-trip anxiety, the workshop will also introduce the *key concepts of field-based work*, and *set the expectations for students upfront*. We will recruit experienced and personable Teaching Associates to run the discussion workshops, along with enthusiastic later-year undergraduate mentors who can be present to engage in friendly discussion with our first year students during the pre-trip workshop. The experienced students and Teaching Associates can answer questions about how a field trip runs, foster a sense of excitement for the trip itself, and also help alleviate field trip anxiety and while improving student preparation for the trip. This format also will provide the opportunity for more intimate questions from students, who might feel anxious or uncertain about asking questions to a senior teacher in front of a wider audience.



**First Year Curriculum principles for Transition Pedagogy addressed by the project (tick the appropriate box(es) Select the 1-2 strongest principles that you are addressing.**

Kift (2009) First Year Curriculum principles for Transition Pedagogy - <http://fyhe.com.au/transition-pedagogy/fy-curriculum-principles/>

- Transition
- Diversity
- Engagement
- Assessment
- Design (broader focus)
- Evaluation and Monitoring (broader focus)

**Provide detail of how the selected principles are addressed in your project.**

Transition:

*The curriculum and its delivery should be designed to be consistent and explicit in assisting students' transition from their previous educational experience to the nature of learning in higher education and learning in their discipline as part of their lifelong learning.*

This project will assist transition **into first year** through students:

- being introduced to fieldwork in a collaborative way alongside their fellow environmental students, allowing them to *feel a sense of familiarity and belonging* at UTS.
- beginning to *build their identity as new environmental scientists*, by being introduced to a diverse range of research interests showcased by a selection of approachable and enthusiastic marine and terrestrial UTS scientists

This project will also assist student transition through **to later years** by:

- providing students with an *inspiring introduction to field work*, which is expanded upon in second and third year subjects that utilize more advanced fieldwork skills as a learning tool.
- building students' *confidence in learning to conduct themselves as scientists* in the field.

Engagement:

*Learning, teaching, and assessment approaches in the first year curriculum should enact engaging and involving curriculum pedagogy*

This project will use **in-person discussion workshops** to:

- thoroughly *prepare and motivate* students for their field trip in an informative way

This project will use the **field trip** to:

- provide the very first opportunity at UTS for *hands-on learning* of fieldwork skills that are applicable to a diverse range of environmental careers
- deliver *memorable, real-world relevant environmental content* in an engaging field setting

This project will use **interactive online learning modules** (built in Captivate) to:

- promote *student comprehension* of the utilities of field-based studies
- encourage students to *reflect upon their learning experiences* in the field
- allow *direct and immediate feedback* for questions linked to the module content

<p><b>Other University/Faculty/Course/Subject priorities addressed (optional)</b></p> <ul style="list-style-type: none"> <li>• Responding to several years of student requests for field work in first year</li> <li>• Increasing student retention in Environmental Sciences degrees</li> <li>• Development of specific graduate attribute – professional skills and their application</li> <li>• Improved student learning in an inspiring, supportive environment</li> </ul>
<p><b>Key project activities and timeline, including appropriate activities that engage the overall teaching team (if applicable)</b></p> <p>Pre-semester period 2015:</p> <ol style="list-style-type: none"> <li>1. Preparation of all four pre- and post-trip online learning module materials using Adobe Captivate, including time spent learning from IML Captivate walkthroughs.</li> <li>2. Preparation of all pre-trip discussion workshop materials.</li> <li>3. Prepare the field trip activities, including recruitment and organisation of academics and their learning activities.</li> <li>4. Recruitment of experienced Teaching Associates for the pre-trip discussion workshops.</li> <li>5. Recruitment of experienced undergraduate mentor students for the pre-trip workshops.</li> </ol> <p>Autumn semester:</p> <ol style="list-style-type: none"> <li>1. Week 1 – Upload field trip information and workshop materials on UTSONline.</li> <li>2. Week 3 and 5 – Students complete pre-trip online learning modules.</li> <li>3. Weeks 6 and 7 – Students attend pre-trip readiness discussion workshops.</li> <li>4. Mid-semester break period – Students attend field trip at Hawks Nest and Stroud, completing assessable field journals which document their learning experience.</li> <li>5. Week 8 – Students complete post-trip online learning module and reflection.</li> <li>6. Weeks 10-12 – Design, promote, run and analyse a survey to assess overall student engagement and satisfaction of the new field trip as well as pre- and post-trip activities.</li> </ol>
<p><b>Your evaluation strategy i.e. how you will know that the project has been successful, with particular focus on the transition pedagogies that you have chosen, and how will you collect information to improve the outcomes?</b></p> <ul style="list-style-type: none"> <li>• Successful completion of online learning modules and participation in discussion workshops. Marks for the module will reflect comprehension of ideas; if marks are low the first time, discussions with students will be designed to tease out why so that modules can be adapted to increase motivation and learning.</li> <li>• Analysis of 91107 The Biosphere SFS, particularly the qualitative comments and questions relating to engagement and learning support.</li> <li>• Potential comparison of first-year Autumn semester student retention figures from 2014 to 2015, pending data availability</li> <li>• A voluntary online survey to assess overall student engagement and perceived value in field trips as a key learning tool for environmental science students.</li> </ul>

**Project Budget** (insert table or spreadsheet if appropriate) and budget justification (remember to add on-costs – approximately 17%).- <http://www.hru.uts.edu.au/conditions/pay/rates.html>

Activity	Hours	Rate	Total
Pre-semester item 1	24	Casual academic, other academic activity – PhD' rate projected at \$50.72 per hour (current Jan 2015 rate) including 17% on costs	\$1424.22
Pre-semester items 2,3,4,5	24	As above	\$1424.22
Autumn items 1- 5	16	As above	\$949.47
Autumn item 6	3	As above	\$178.02
		<b>TOTAL</b>	<b>\$3975.93</b>

**References:**

- [1] Kern E, Carpenter J (1984) Enhancement of student values, interests, and attitudes in earth science through a field-oriented approach. *Journal of Geological Education* 32: 299-305.
- [2] Scott GW, Goulder R, Wheeler P, Scott LJ, Tobin ML, Marsham S (2012) The Value of Fieldwork in Life and Environmental Sciences in the Context of Higher Education: A Case Study in Learning About Biodiversity. *J Sci Educ Technol* 21: 11–21.
- [3] McGuinness M and Simm D (2005) Going global? Long-haul fieldwork in undergraduate geography. *Journal of Geography in Higher Education* 29: 241-253.
- [4] Mackenzie A, White R (1981) *Fieldwork in geography and long-term memory structures*. Paper presented at the American Educational Research Association, Los Angeles, CA.
- [5] Myers B, Jones L (2004) *Effective Use of Field Trips in Educational Programming: A Three Stage Approach*, AEC373 - Agricultural Education and Communication Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida.
- [6] Devlin M, Kift S, Nelson K, Smith L, & McKay J (2012) Effective teaching and support of students from low socioeconomic status backgrounds: Practical advice for teaching staff. *Office for Learning and Teaching, Department of Industry, Innovation, Science, Research and Tertiary Education*, Sydney.
- [7] Bitgood S (1989). School field trips: An overview. *Visitor Behavior*, 4: 3-6.
- [8] Cotton DE, Cotton PA (2009) Field biology experiences of undergraduate students: the impact of novelty space. *Journal of Biological Education* 43: 169-174.