

## Expression of Interest Form (Staff funding)

**Please complete this form and, after sign off by your Head of Department, return a signed hardcopy via internal mail to The Academic Manager, Institute for Advanced Teaching and Learning, Millburn House**

An additional electronic copy should be sent to [iatl@warwick.ac.uk](mailto:iatl@warwick.ac.uk)

|  |   |
|--|---|
| <b>Name of lead applicant / co-applicant</b>   | <b>Department / Centre</b>  |
| Dr. David Wood   | Maths   |
| <b>Email address</b>   | <b>Telephone</b>  |
| david.wood@warwick.ac.uk   | 23592   |
| <b>Title of project</b>  |   |
| Teaching Abstraction in Open Spaces  |   |
| <b>Names of others involved (if applicable)</b>  |   |
| Name<br>Jonathan Heron   | Department/Centre<br>IATL   |
| Name<br>Barry Sheils   | Department/Centre<br>OSL  |
| <b>Which of the Institute's objectives does the project address? (Please include all that apply and give details of how they will be addressed)</b>                        |   |
| Academic literacy<br>(the ability to read, think, write and share)   | This intervention will use an innovative pedagogy in an experimental mode to encourage those students who are struggling with mathematical abstraction to re-engage with the subject and process curricular knowledge in a kinaesthetic way. It targets students with learning styles that are better suited to dynamic workshops than standard lectures. |
| Engagement with global culture   |   |
| Interdisciplinarity<br><br>(the encounter with knowledge sets, methodologies and skills from more than one established academic discipline combined with reflection on the | This combines the expertise of mathematicians teaching a core module from the second year of the maths curriculum and that of OSL practitioners who have built up conventions of academic interdisciplinary workshop practices over the last three years. The intervention  |

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| relationships between the sets of knowledges, skills and methodologies explored)                            | emerges from an interdisciplinary workshop 'How Does a Theorem Act?' which brought together participants from Theatre Studies, Education and Maths. It will use techniques from Theatre and Education in the context of academic Maths.  |
| Open-space Learning<br>(enactive, inquiry-based, and experiential learning, applied drama, role play, etc.) | <b>This is based on the OSL methodology and emerges directly from the HEA funded project.</b>  |
| Community engagement  | Fostering inter-disciplinary relationships; creating new exchanges between postgraduates and undergraduates; creating practice that could be disseminated through the International Gateway for Gifted Youth. We hope this project will stimulate performances for local communities outside of the academy.   |
| Research-led learning   | This project is a continuation of the OSL practice-as-research initiative and will yield further data on student response and academic efficacy. It will also emphasise the role of student researchers by engaging maths PhD students to help facilitate the workshops, document the feedback and provide evaluative reports. This will contribute to a co-authored final report. |

**Please indicate which funding stream you think is most appropriate for your application**

- An Academic Fellowship
- Pedagogic Intervention grant
- Strategic Project grant

**Outline of proposed project**

*Please describe your project in not more than 500 words*

*Please include answers to the following:*

- *What do you want your project to achieve?*
- *How many students will your project reach?*
- *Which stakeholders will you involve? (Projects are normally expected to engage students at all stages.)*
- *What support would you like from IATL staff?*

This project is an intervention in the second year maths syllabus. Whereas first year maths deals with more concrete ideas and provides continuity for most students with the advanced level school syllabus, second year maths marks an important shift in academic register. Mathematical abstraction proves especially difficult for many students at this stage as it operates on a different level from the concrete maths they are used to. These workshops will be designed to help struggling students cope with this shift. It has been noted that in the past those students who struggle at this critical stage can progressively disengage from the degree course as a whole so it is important to explore new methods for engaging and re-engaging these students. Open studio spaces are ideal both academically for exploring abstraction and pedagogically for engaging different learning styles.

These workshops will be offered to all second year maths students with a cap of 100 places (4 individual workshops). Students who are struggling with abstraction will be especially encouraged to apply. We will also encourage applications from students who find abstraction particularly interesting and would like to explore the academic content in a new dimension.

As well as maths academics and OSL practitioners this project will involve PhD lead learners. These students will be involved at all stages from planning to facilitation to reporting on outcomes. They will also gain valuable experience teaching maths in an innovative fashion: a practice which they may wish to develop in new directions in future as the compatibility of maths and open spaces becomes more apparent.

IATL spaces will be used to run these workshops. IATL will provide at least one OSL practitioner (perhaps 2 so that we can run parallel sessions). IATL will also be engaged with a final report into the further uses of OSL.

**Intended outcomes of the proposed project**

- To establish an innovative and effective academic practice within the maths department and provide maths students with a distinctive learning experience
- To help students, especially those struggling with abstraction to approach and re-think the topic in an interesting way and improve their academic performance
- To record the impact of OSL practice: looking at student feedback and results; the reports of 'lead learners'.

**Timescale**

|                       |                       |
|-----------------------|-----------------------|
| Estimated start date: | October/November 2011 |
|-----------------------|-----------------------|

**Milestones and Targets throughout the duration of the project: (100 words)**

In October/November there will be an initial meeting between academic staff from maths OSL practitioners and two student lead learners. Here the workshops will be planned, combining the techniques of OSL with the mathematical themes.

Term 2 (January/February): Workshops will be run: feedback collected

Term 3 Lead learner reports; final report on the workshop in maths model.

|                           |           |
|---------------------------|-----------|
| Proposed completion date: | July 2012 |
|---------------------------|-----------|

**This project is focussed on students from which discipline(s) and year(s) of study?**

Discipline(s): Maths

Year(s) of study: second year

**How will the outcomes of the project be embedded in the University?** [Not required for applications for Pedagogic Intervention funds]

**How will the outcomes be disseminated more widely outside of the university?** [Not required for applications for Pedagogic Intervention funds]

There is potential for a collaborative journal article on the efficacy of the OSL approach in maths.

**How will this project link with ongoing work in the IATL?** [See [www.warwick.ac.uk/go/iatl/projects](http://www.warwick.ac.uk/go/iatl/projects)]

This project is applied and performative in the same way as many of the other pedagogic interventions. It extends the methods of rehearsal into new academic terrain. It follows on from and helps embed IATL strategic projects such as 'Making Space for Interdisciplinarity' and the two year NTFS scheme 'Open Space Learning in Real world Contexts'

**Budget**

|  |       |
|--|-------|
| Please state the total amount of funding for which you are applying: | £1000 |
|--|-------|

Please give a detailed breakdown of all the costs associated with the project, including teaching replacement

Additional OSL practitioner for 2 workshops £500  
2 PhD lead learners £300  
Materials (t-shirts, props, prepared material) £200

**Statement of ethics**

By signing below, you are confirming that your project conforms to the University's Guidelines on Ethical Practice, which are available to view at <http://www2.warwick.ac.uk/services/rss/services/ethics/statement/guidance/#>

**Signature of applicant**

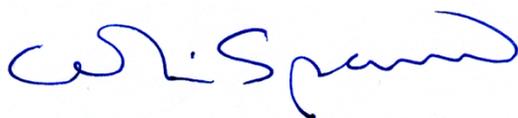
  
Signature:

Name (please print): Dr. David Wood

Date: 1/6/2011

**Declaration of support by Chairs of Department/Directors of Centre of the applicant/co-applicant.** Please ensure that you have consulted with your Head of Department/Director of Centre before submitting your application.

Comments: This proposal has my strong support for two main reasons. First, we are challenged by the fact that some of our students do seem to disengage in the 2<sup>nd</sup> year, and our conventional teaching interventions have only very limited success. Second, mathematics is largely taught in very conventional ways, and it is in general an exciting idea to see how and whether it can be taught in other ways – and how and whether colleagues will engage with these possibilities.



Signature:

Name (please print): Prof. Colin Sparrow

Date: 1/6/2011