

HE Bioscience Teacher of the Year 2012 Application Form

Dr Momna Hejmadi – University of Bath

1. Individual excellence in the development and implementation of teaching bioscience

In not more than 500 words please outline, with evidence (references are not included in the 500 word limit), how the candidate displays individual excellence in the development and implementation of approaches to teaching that have proven successful in promoting bioscience student learning and achievement

In the ten years that Dr Hejmadi has been teaching at the University of Bath, she has established an impressive record of enhancing student learning, particularly in the biosciences. Seen by her colleagues as the 'gold standard' of teaching, Dr Hejmadi has won all our internal teaching prizes in recognition of her achievement (1,2,3). In spite of this, for each of the last five years, her students and colleagues have continued to nominate her. In 2009, she was one of three finalists for the Ed Wood Teaching Prize, UK Centre for Bioscience. She has been at the forefront of introducing innovative and effective teaching practices, underpinned by funding from the University Teaching Development Fund in 2005,2007,2008. Among her many notable achievements include:

- Faced with the challenge of teaching large and diverse classes, she developed interactive online learning resources and used these to enhance the taught contact time for better learning. The benefits to the student learning experience have been disseminated widely (4) and have been included in the JISC/HEA-funded Open Education resources pilot project in 2010.
- She showed peer assessments to be an effective way of giving quality student feedback while reducing staff times, especially for large practical reports, student-led seminars and problems classes. This has been taken up as an 'example of good practice' and adopted by many colleagues.
- To solve the challenge of providing a quality research experience for students despite resource constraints (lab space), she introduced group-based laboratory research projects (students work in pairs) conducted in large teaching labs (underused outside of practical time) with new assessment criteria. These changes were designed to help students to not only understand the process of scientific research, but also develop key skills for employability. The strategy was commended by the External Examiner '...these carefully designed 'teaching' research projects can be more informative to a student than a poorly-planned or speculative 'real' research project. They also provide a more level playing field for the assessment of the abilities of these

students'. This unit has run successfully since 2006 and has been adapted by several colleagues in the department. A detailed case study of this project was published by the UK Centre for Bioscience (4).

- In 2008, she introduced a multidisciplinary course in biotechnology and business, designed to challenge final year students interested in pursuing a career at the interface of technology and commerce. This course was a novel one in the departmental context and included seminars by eminent biotech entrepreneurs combined with workshops on basic business principles. A 'Dragons Den'-style pitch was especially popular with students and the unit has since expanded into an MSc programme.

'Momna has this exceptional gift of grasping the nettle of any educational problem and turning it from an irritating weed into a prize winning perennial. She has a track record of inquisitive questioning of educational problems, until the core is understood and a constructive solution becomes visible.

Gwen van der Velden, Director of Learning and Teaching Enhancement, University of Bath
References:

1. Mary Tasker Award for Excellence in Teaching (2002), University of Bath
2. Innovations in Learning and Teaching (2008), University of Bath
3. Leadership in Learning and Teaching (2011), University of Bath
4. Improving the Effectiveness and Efficiency of Teaching Large Classes: Development and Evaluation of a Novel e-Resource in Cancer Biology (2007) Bioscience Education, Vol 9 <http://www.bioscience.heacademy.ac.uk/journal/vol9/beej-9-2.pdf>

2. Involvement in scholarly and professional development activities

In not more than 500 words please describe all scholarly or professional development activities that the candidate has undertaken, which have influenced and enhanced the learning of bioscience students

Dr. Hejmadi has an outstanding external reputation for her innovatory practices. She now has several peer-reviewed publications to her name which relate directly her innovation projects, six of which were funded through successful competitive bidding to our Teaching Development Fund. This external recognition contributes to her reputation here at Bath, where her colleagues view her as a sound and academically credible voice for professionalism in learning and teaching. A couple of these are highlighted below:

Learning through placements: 'Do placements enhance undergraduate learning and employability?' The work placement experience for undergraduates may be a key contributor to its high academic standards and the employability of graduates. Research led by Dr. Hejmadi

and colleagues from Education and Engineering (TDF 2008, 2010), confirmed the value of placements in enhancing academic confidence, career progression and employability prospects, but also noted the growing barriers to participation in this extended work experience (7,8,9,10). As a result, a number of enhancements were made to organise and support placement students. Feedback events for students to reflect on their first professional experiences were also introduced. This project was seen by our central strategic management as a leading project on placement evaluation, and led to an institutional review (2008/09).

A particular area where Dr Hejmadi is leading new developments is the establishment of international masters level programmes and exploration of cross cultural pedagogies. Using UKIERI funding she has set up a highly innovative programme that is part taught in India and Britain, with a view to building bridges between university teaching in both cultures. The programme has exceptional advantages for students, but Dr Hejmadi is broadening the learning from this venture, to include staff, through exchange visits and pedagogical debates. Recently in 2010, she has also introduced a new suite of MSc programmes and a unit on Clinical & Translational Medicine, designed to further broaden student learning.

References:

5. M V Hejmadi (2007) Improving the effectiveness and efficiency of teaching large classes: Development and evaluation of a novel e-resource in cancer biology. Bioscience Education Electronic Journal Vol 9-2 (<http://www.bioscience.heacademy.ac.uk/journal/vol9/beej-9-2.htm>)
6. MV Hejmadi (2008) Mentoring scientific minds through group research projects <http://www.heacademy.ac.uk/TeachingGuides>
7. K. Bullock, Gould G, Hejmadi MV, Lock G (2009) Work Placement Experience: Should I Stay or Should I Go? Higher Education Research Development 28: 5, 481 — 494.
8. Lock G; K. Bullock, Gould G and Hejmadi MV (2009) Exploring the industrial placement experience for mechanical engineering undergraduates. Engineering Education Vol 4 (1) pp 42-51.
9. M V Hejmadi, K. Bullock, Gould G and Lock G (2011) Is choosing to go on placement a gamble? Perspectives from bioscience undergraduates. Assessment and Evaluation in Higher Education (First published 28 April 2011)
10. K. Bullock, M V Hejmadi, and Lock G (2011) Bioscience Placements: Are they really necessary. J. Biological Education (Available online 18 July 2011)

3. Supporting colleagues and influencing learning

In not more than 500 words please provide evidence of how the candidate supports colleagues and influences bioscience student learning beyond their department and institution

Within the University, Dr. Hejmadi is most generous in sharing her ideas with colleagues through formal and informal networks. She has formally mentored and supported more than 30 probationary lecturers through the institutional programme since its inception in 2003. She not only continues in this role, but also contributes workshops on 'lecturing to large classes' and 'Refreshing teaching' workshops through central staff development activities. She is a major contributor to our annual Innovations Week and is a learning adviser, examiner and workshop leader on our probationary lecturers programme.

A naturally reflective and inquisitive academic by nature, Dr Hejmadi stands out because of her personable, genuine approach to her profession: enquiry, consideration, debate and reflection are key to her outlook on life. At large international conferences and in campus-based networks alike, Dr Hejmadi invites her colleagues to question educational practices. Basing her responses in the scholarly literature, she will always seek further depth in any educational enquiry raised, but with humour and a genuine appreciation of alternative points of view. It is precisely those abilities that attract all those willing to learn towards her. She is one of the Bioscience Representatives in her department, regularly involved in sharing good practice with her colleagues nationally through the networking fora and conferences (11,12,13).

More recently, she has introduced open educational resources to the university through her role in both the pilot phase and second round of the OER initiative, led by the UK Centre for Bioscience (14). As the discipline consultant in Cell biology, she worked alongside specialists from across the country to produce a wiki for the benefit of the bioscience community, to explore the potential of OERs across a range of disciplines. The intention was to guide staff new to Open Educational Resources in the Biosciences towards valuable examples, and the routes to find them (15).

'Momna has a track record of internal and external recognition and has consistently used this to support her colleagues and particularly junior staff in strengthening their teaching abilities. Using a gentle and facilitative approach she has challenged many of her colleagues' assumptions about teaching and enhanced practices within her department and the wider faculty. After years of excellent practical projects, Momna is increasingly leading scholarly developments on learning and teaching. It came as no surprise that Momna was one of the first to be promoted under our new criteria, which has meant a boost to the status of learning and teaching within the university, as Momna is so well known and respected by her colleagues'

Gwen van der Velden, Director Learning & Teaching Enhancement Office.

References:

11. M V Hejmadi (2009) How effective is peer assessment and feedback? An evaluation across diverse teaching activities (SLTC conference 2009)
12. M V Hejmadi (2009) Laboratory practicals: Strategies to enhance student learning (SLTC conference 2009).
13. MV Hejmadi (July 2011) Engaging international students in biotechnology & enterprise. (International conference on Effective Learning in the Biosciences July 2011)
14. OER Pilot Project 2009-10
http://www.bioscience.heacademy.ac.uk/resources/oer/projectpartners_CancerBiology.aspx
15. OerBITAL Project 2010-11 .<http://heabiowiki.leeds.ac.uk/oerbita/>