HE Bioscience Teacher of the Year 2016 Application Form
Dr Kevin Coward – University of Oxford

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

Kevin Coward is the Director and Founder of the MSc in Clinical Embryology at Oxford, a course targeted at creating future leaders in the treatment of human infertility. He designed and created the course in its entirety. The course commenced in October 2008 and has proven to be very successful, with 89 graduates (18 with '*Distinction*') now distributed all over the world. Its success lies in its holistic approach to the subject area. Kevin has instigated a unique MSc programme that utilises a number of modern teaching methods to facilitate, enhance, and optimise the student learning experience, including class lectures, group tutorials, laboratory practical classes, in-house demonstrations, class visits to external institutions and laboratories. He has also arranged for students to receive regular lectures from world experts. Other pedagogical techniques deployed include problem-based learning and class-directed techniques to promote collective analytical thinking and deep learning. He has revived numerous awards highlighting his dedication to teaching (please see below for detailed list).

2015 – Titular Commendation for Teaching Excellence, University of Oxford. Citation: '*For consistently outstanding teaching and sustained commitment to course design and development of novel methodologies for practical laboratory classes and for inspirational engagement with teaching and quality assurance at Divisional and University levels'.*
2014 - University Teaching Excellence Award for 'innovative use of information technology in teaching and learning'. Presented by the Vice Chancellor, Rhodes House, November 2014
2014 - OxTALENT Award (Teaching and Learning Enhanced with New Technology) in the category of 'Interactive Infographics' for a project entitled 'Mobile interactive whiteboard technology for video-enhanced poster display during viva voce examinations'.
2013 - University Teaching Excellence Award for innovative use of information technology in teaching and learning. Presented by the Vice Chancellor, Rhodes House, November 2013
2013 - OxTALENT Award (Teaching and Learning Enhanced with New Technology) in the category of 'Innovative Use of Technology in the Classroom' for the HEA-funded project 'Mobile interactive board technology for wet laboratory practical teaching'.
2012 – Major Educator Award - University of Oxford Teaching Excellence Award for 'an outstanding contribution to postgraduate education in the Medical Sciences Division'.

Presented by the Pro-Vice-Chancellor for Education, Rhodes House, November 2012.

Furthermore, Kevin is also a Principal Investigator and has an active research team comprised of one Laboratory Manager, a Post-Doctoral Teaching Fellow, an MSc Administrator, a Marie Curie Fellow, three PhD students, two pre-clinical medical students and one internship student. Finally, he supervises extended essays and laboratory research projects for medical students and is an instructor for Special Study Module in Reproductive Medicine (5th Year Medical Students). He welcomes ERAMUS and visiting students from other countries and universities. In addition, he disseminates his excellence in undergraduate and postgraduate teaching through a variety of techniques including leading critical discussion of current literature and actively encourages his students to write manuscripts for peer review and popular science journals: Thus far, Kevin has supervised 90 research project students in total. He has published over 84 peer-reviewed papers .He was the Senior Editor of 4 Academic books including the Textbook of Clinical Embryology (17 October 2013), a book based upon the MSc course and featuring chapters written by course lecturers.

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

In 2008, Kevin instigated a unique MSc programme that utilises a number of modern teaching methods to facilitate, enhance, and optimise the student learning experience. This includes class lectures, group tutorials, laboratory practical classes, in-house demonstrations, class visits to external institutions and laboratories, and has arranged for students to receive regular lectures from world experts. He designed the course such that students can employ self-directed learning strategies, thereby permitting study on an individual basis without formal direction. In 2012, Kevin was awarded a Teaching Development Grant from the High Education Academy entitled”Problem-based learning in the development of laboratory teaching skills and methodology”. Kevin recognises that postgraduate students will inevitably be responsible for teaching and inspiring future generations of students. This exercise provides students with unique insight into research-based careers, helps them develop metacognitive skills, and facilitates a holistic understanding of their subject. This project led to OxTALENT Awards in 2013 and 2014 for innovative use of information technology in the classroom. However, Kevin’s teaching is not restricted to just the MSc Course. He makes an active contribution each term to the Medical Division (Oxford University), and the wider University. Kevin became a full Fellow of the Higher Education Authority (HEA) in 2011 and has been contributing to the Medical Science Divisions Skills Training Programme since 2009. In this capacity, he leads or assists with several workshops including Teaching Skills I-*Small Group and Tutorial Teaching*, *Managing your Supervisor*, *Transfer of Status Preparation*, *Viva Preparation*. Kevin also plays a keen role with the University’s Oxford Learning Institute, both as a as a Mentor and Tutor. He acts as a mentor and examiner for teaching porfolios prepared by candidates for HEA Associate Fellowship accrediation and Fellowship accreditation. He is a tutor at a workshop organised by the Oxford Learning Institute for newly appointed academics which run annually in October. He has been a

member of Congregation at Oxford since 2008 and has sat on the Divisional Graduate Studies Committee and the Divisional Audit Sub- Committee since 2013. He also sits on the Departmental Graduate Studies Committee. He was a Lecturer in Medicine at Worcester College for much years.In addition, he acts as an extended essay supervisor, and research project supervisor, for the pre-clinical medical school (FHS), contributes an afternoon's seminar to the Fertilisation and Human Development lecture series in the Molecular Medicine Option, and acts as an examiner for this option. He was recently awarded a place, following competitive selection, on the Postgraduate Diploma in Learning and Teaching in Higher Education (PGDipLATHE) beginning in September 2015.

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

I have worked with Kevin for over 7 years in my role as the Laboratory Manager for the MSc in Clinical Embryology, and as a technical researcher within his research group. I am constantly amazed by Kevin's dedication toward his students and his ability to help, support and encourage colleagues and students alike. In addition, he has always encouraged me to take part in extended skills training programmes within the University including working towards a teaching portfolio for Higher Education Authority Associate Fellowship. Such training has helped tremendously in developing my practical, managerial and presentation skills, including, but not limited to, providing me with the skill base to present lectures for the MSc, which I now do regularly.

Kevin has supervised over 90 researchers in the laboratory now, many of whom have published as a direct result of working in Dr Coward's laboratory. Several of his undergraduate students have appeared as co-authors on group publications, and two students a national essay writing competition under Kevin's supervision. He approaches his teaching, both in the research laboratory, and in the classroom, with rigour and motivation.

In 2011, he was a scientific advisor for a portion of the full dome film 'Cell! Cell! Cell1 funded by the Wellcome Trust and produce by NSC Creative A 24 min film describing the inner workings of cells, rendered in exquisite detail and targeted to a teenage audience. He was invited a an external expert for an accreditation panel for the Commission for Academic Accreditation (CAA) in the United Arab Emirates to evaluate a proposed MSc course in Human Reproductive Biology. Furthermore, he sat on a review panel for the Higher Education Academy National Teaching Fellowship applications (2013-2014).In 2013, he was invited by the HEA to carry out a survey of the use of laboratory practical teaching on UK undergraduate courses (May 2013, commissioned consultant). The survey was presented at a national conference and published as a dedicated report.

In 2015, he was invited by the Medical Sciences Division (University of Oxford) to act as one of four Divisional judges for heats and final of 'The Three Minute Thesis' competition.

4. Exhibit innovation that has proven to improve their teaching practice to

enhance student learning

In not more than 500 words please provide evidence of how the candidate exhibits nnovation in their teaching practices to enhance student learning

Since 2011, Kevin has developed a new problem-based learning technique focussing specifically upon the development of laboratory teaching skills. This project aims to develop novel methodology for laboratory teaching that is a complete departure from classical teaching paradigms. This new method encourages students to utilise their creativity, promotes deep learning and understanding, provokes discussion, and demonstrates how lecture-based material can be enhanced by parallel laboratory sessions. In addition, such methodology aids the development of metacognitive skills and facilitates a holistic understanding of the subject material - a style of teaching that is very different to didactic teaching in a lecture room. In such an exercise, students design an experiment during a problem-based learning exercise and run their own practical class for their peer group. This novel style of problem-based learning is deployed in the Nuffield Department of Obstetrics and Gynaecology (University of Oxford) in which students registered on the MSc in Clinical Embryology learn how to design and present their own laboratory practical class. Groups of students focus particularly upon experimental design in order to highlight potential pitfalls, areas of difficulty, safety, and teaching strategy. Students use electronic whiteboard technology to deliver their own practical class to other students, including a briefing and debriefing. This new strategy was developed due to the notable lack of appropriate training opportunities for students who may move into a career where there is an expectation to teach in the laboratory. It was important to bridge this gap as laboratory teaching requires a distinct suite of teaching skills that are very different to those deployed in conventional classroom teaching. This teaching exercise is incredibly insightful, both for the students and the teaching staff. The students participate in creating a laboratory practical and then undertake the practical created by their peers. Therefore, the students apply a theoretical concept proposed by their peers and they lead a laboratory practical. Both processes helped the student to grasp the difficulties involved in solving problems in a teaching laboratory, either from the tutor’s point of view, or from the student’s point of view. The feedback collected to date is unanimously positive amongst the students who have undertaken the exercise.