

Peter Wildy Prize Lecture Nomination Form

Awarded annually to an individual for an outstanding contribution to microbiology education and/or communication in order to stimulate interest and understanding in the subject

The Peter Wildy Prize Lecture award is a competitive process. Please complete all sections of the form below and attach a copy of the requested supporting documentation required by the rules of the award – see the Microbiology Society website for details:

www.microbiologysociety.org/prizelectures

The Microbiology Society supports [Equality and Diversity](#) and asks that those making nominations consider the entire talent pool available.

We appreciate the time and effort it takes to complete a final nomination so please note that, whilst recipients of prizes cannot be nominated again for the same prize, unsuccessful nominations can be resubmitted for one more round the following year.

1. Nominee

I wish to nominate:

Name	Tansy C Hammarton
Address	[redacted]
Email	[redacted]
Subject area	Molecular Parasitology (specifically cell division in African trypanosomes)

2. Nomination information

(a) Distinction of candidate's work and contribution to microbiology education and/or communication.

This section should describe the candidate's field of interest in microbiology, the approaches and tools they use or have developed for education as a primary goal. All levels and kinds of audiences are considered from primary education through to higher education, continued professional development and communication to the public.

If appropriate, please suggest others who might be able to comment authoritatively. Max 1000 words.

Tansy is a Senior Lecturer at the University of Glasgow, who focusses on the molecular events undertaken during cell division of the African trypanosome, *Trypanosoma brucei*. Whilst her work has contributed significant insights into the roles of multiple proteins in cytokinesis, it is her effort, energy and enthusiasm in Public Engagement that forms the basis of this nomination.

Tansy was one of the early 'pioneers' of outreach, working consistently over the last twelve years to develop material that engages the interest and curiosity of very disparate audiences. For each event, material has been created to ensure accessibility and stimulation according to the age range, experience and other demographics. This has generated a wealth of personal experience, which she has enthusiastically shared with other less experienced colleagues.

As such Tansy has 'cast a wide teaching net', with the main focus being direct to the principles of parasitism in its broadest sense. From nursery school teaching, where sessions highlight the importance of hand-washing 'germs', to primary and secondary education, including special needs pupils, pupils from deprived backgrounds and teachers, to educating the educators about public engagement activities.

Some of the highlights over this period include:

- 1. The development of workshops linked to British Science week** for 9-11 year olds. Each workshop comprises 5 interactive workstations ('bacteria, viruses & yeast', 'malaria', 'trypanosomes & *Leishmania*', 'worms' and 'jelly cells') and is preceded by an interactive talk in the school where pupils learn about bacteria, viruses and parasites and the diseases they cause at home and abroad. These workshops have run annually since 2006 and have now involved ~2500 pupils and teachers, with many schools returning year after year. Further, each year Tansy recruits >50 members of University staff & students to help prepare and deliver the workshops, which provides valuable training in Public Engagement for those who take part, while giving pupils the chance to chat with and question 'real' research scientists.
- 2. Menacing Microbiology Science Club** (Royal Society Partnership grant funded). This was a year-long project (2010-11) involving twice-monthly afterschool Menacing Microbiology science club meetings for S2 pupils backed up by lunchtime sessions run by their teachers, school talks and visits to the University to learn about helminth research and to Glasgow Science Centre. It considered how microbiology research was portrayed in the media, offered hands on lab sessions, supported the pupils as they studied individual organisms and provided them with opportunities to interview members of University staff about their research on that organism. Pupils then generated scientific posters on their organism, which they presented at a mini-symposium attended by parents, teachers, University staff, Maureen McKenna (Director of Education, Glasgow City Council) and the press.
Articles about the success of the project appeared in the Times Education Supplement Scotland and on STV news online. It was also featured as a Royal Society Case Study.
- 3. In secondary education**, she designed and delivered '**Microbiology Disease Detective**' labs for S5-S6 pupils as part of Glasgow Science Festival since 2011. This material has now been offered to ~500 pupils and teachers and provides the pupils with an opportunity to diagnose microbial disease. The pupils review the patient's history and through completion of various microscopic, biochemical, molecular and immunological techniques determine which parasitic or bacterial infection the patient is carrying. This material has been received enthusiastically with several schools returning year on year. Additionally, in 2013 Tansy adapted these to allow pupils with physical disabilities to attend and take part alongside able-bodied pupils.
- 4.** As a consequence of these interactions and in response to requests from local teachers she designed **4 x 30 min labs and talks for Advanced Higher Biology students**. These include: a) dissection of the apicomplexan parasite, *Monocystis*, from earthworms; b) *Trypanosoma brucei* diagnostic agglutination lab and talks on c) Malaria and d) *Toxoplasma*. These labs have run annually since 2008 reaching >700 pupils.

Significantly, Tansy understands the importance of educating the next generation of scientists about Public Engagement and has championed its inclusion in our undergraduate teaching. This includes

offering opportunities to volunteer to help with activities around British Science Week and Glasgow Science Festival and to generate and orally deliver material to secondary school pupils. She has been a strong advocate of scientific communication, which is now part of the final year undergraduate curriculum, providing students with an opportunity to submit articles to the Biochemical Society Science Communication Competition. This resulted in several students reaching the final shortlist of the competition. In 2016, she edited a booklet 'Microessays 2016' of 4 shortlisted and 6 strong but non-shortlisted articles. These were made available online and sent to the British Society for Parasitology, Microbiology Society, all secondary schools in Glasgow, all independent schools in Scotland, and the Scottish Biology teachers' SYNAPSE network.

<http://www.gla.ac.uk/researchinstitutes/iii/research/engagement/microessays2016/>

For many public events Tansy has to recruit significant numbers of postgraduate researchers who willingly support and engage with the audience. To further capture and build experience in this generation of researchers she designed, co-ordinated and taught on a 2 day course specifically aimed at PhD students entitled 'How do I engage the public with my research?' This course has been run annually since 2011, with >150 students trained.

For the general public, she has championed the case of 'The remarkable Dr Robertson: the Edwardian woman who revolutionised tropical medicine' through presentation/publication of researched evidence and by generation of a blog to accompany this material

<http://blog.journals.cambridge.org/2016/12/20/the-remarkable-dr-robertson/>. Further, Tansy regularly uses Twitter (@Hammarton_lab) to share her Public Engagement work and microbiology research news with her followers.

Finally, she has also been involved in the education of the educators, helping to organise and chair sessions on Public Engagement for the British Society of Parasitology at three annual Spring Meetings, which aimed to promote good practice, provide inspiration and ideas to fellow members who wish to get involved.

Others who could comment authoritatively:

Dr Helen Price (University of Keele) h.price@keele.ac.uk

Dr Deborah McNeill (Director, Glasgow Science Festival) Deborah.McNeill@glasgow.ac.uk

Prof Mike Barrett (University of Glasgow) Michael.Barrett@glasgow.ac.uk

Dr Vickie Curtis (Wellcome Centre for Molecular Parasitology) Vickie.Curtis@glasgow.ac.uk

(b) Explicitly outline how the candidate's work has stimulated interest and understanding in the subject.

This section might include, but is not limited to, impacts from the candidate's work on education policy or curricula, changes in public perception of science/microbiology issues or feedback (including repeat invitations).

Max 1000 words.

The impact of Tansy's hard work is significant, with most of events initially designed for use in a single year, returning year on year as a consequence of demand driven by the strong positive feedback received and interest generated. Indeed, extra sessions have been scheduled for her British Science Week and Glasgow Science Festival workshops to accommodate the demand.

Further engagement, especially in the secondary school sector, has resulted in curriculum changes/changes in teaching approaches for microbiology in Scottish schools. For example, pupils from one school who attended her Menacing Microbiology Science Club went on to successfully campaign to be allowed to take three science subjects, rather than the customary two, for their examinations (Standard grades/equivalent to 'O' level). In particular, introduction of CPD Parasitism workshops for teachers has increased teacher confidence in teaching material especially at the higher educational boundaries including that defined by the Advanced Higher Biology syllabus, and has resulted in teachers across Scotland using Tansy's visual aids and *Monocystis*-earthworm dissection

and trypanosome diagnostic labs in the classroom to support their pupils' learning.

Her work has also had significant impact, with feedback from pupils, teachers and parents regularly suggesting that pupils are more interested in science as a result of having attended Tansy's activities. There are indications that as a consequence of this engagement there have been long-term changes in student behaviour including greater retention of pupils in science. This appears in some cases to reflect a combination of cementing a pre-existing interest with increasing understanding of the role of scientific research in the real world by engagement with those working in this area, but there is evidence that she has also inspired pupils to continue in science when they were considering dropping it. Indeed, several pupils who took part in the Menacing Microbiology Science Club returned to the University in subsequent years to undertake microbiology-related Silver/Gold CREST research projects.

For both undergraduates and postgraduates, her efforts have significantly increased awareness of importance of PE and allowed many to consider more novel teaching approaches, as a consequence of volunteering. Indeed as a consequence of exposure to Science Communication, several of our undergraduates have indicated an interest in careers in this area.

Although Tansy's Public Engagement work has largely been with schools, she has also taken any opportunity to stimulate interest in microbiology/parasitology amongst the general public. Most recently, she was invited to speak about the pioneering Edwardian protozoologist, Muriel Robertson, at the Glasgow Encounters with Tropical Disease Symposium, which was attended by members of the general public, librarians, archivists and school pupils in addition to scientists. Her talk was very well received and she was invited to write a follow-up article about Muriel's life and work for the journal 'Parasitology'. Her article was awarded 'Paper of the Month' in December 2016, leading to her being asked to write an accompanying blog post.

Other illustrations of her activity in this area include:

1. The use of her electron micrographs of a dividing trypanosome was displayed along the Clyde Walkway outside the Glasgow Science Centre in 2011 as part of the 'Images of Science' exhibition; this image is still available on the Glasgow Science Centre website <http://www.glasgowsciencecentre.org/images-of-science/parasite.html>
2. Taking part in more unusual Public Engagement activities, including participating in Glasgow's West End Festival Parade in 2010, carrying a giant 7 m long purple trypanosome parasite and handing out comics about the Wellcome Centre for Molecular Parasitology's research, which caused quite a stir. <http://www.youtube.com/watch?v=XyX2mH18-xA>
3. In 2015, she gave a talk 'A Pint of Parasites' to a packed pub at the Pint of Science Festival in Glasgow.

(c) Any other comments or information you feel relevant to the nomination, for example, contribution to the Society.

Examples might include a contribution to the Society, invitations to share practice from other disciplines or other organisations. Max 1000 words.

Within the University of Glasgow, Tansy has held a number of Public Engagement-related Offices. She was the Public Engagement Coordinator for the Wellcome Centre for Molecular Parasitology from 2005-2012 and has been the Public Engagement Champion for the Institute of Infection, Immunity and Inflammation since 2013. She currently chairs the Institute Research Communications and Public Engagement Working Group, and is the Public Engagement/Research Communications lead within the Institute's Management Group. Thus, she has played an active role over many years in championing the importance of Public Engagement across her research Institute. She also regularly shares her approaches to Public Engagement across the University, working closely with the College of Medical,

Veterinary and Life Sciences Public Engagement Officers and Dean for Public Engagement, the University Researcher Development Manager and the University Public Engagement Officer. She has been invited to give talks about the importance of Public Engagement to new College PhD students, and to share her practice in teaching Science Communication with course coordinators across the College of Medical, Veterinary and Life Sciences.

As a consequence of her significant experience in this area, she has been invited to organise sessions on Public Understanding of Science for the British Society for Parasitology. These sessions aimed at promoting good practice in, and providing inspiration for, Public Engagement amongst the membership. This initial session was so successful that she has had repeat invites at two subsequent Spring Meetings and has further contributed via delivery of two talks outlining her experiences.

Tansy has been a STEM Ambassador since 2005 and in 2011 was a finalist in the STEMNet Awards for the 'Most Dedicated STEM Ambassador' category. She has shared her approaches to Public Engagement via STEM Ambassador events and newsletters.

Tansy has also developed her own Public Engagement skills through attendance of appropriate training courses, including a 'Research, Impact and the UK Parliament' course and media training. She shortly afterwards put the media training to good use when she was filmed for two British Society for Parasitology promotional/educational videos <https://www.youtube.com/watch?v=Ebo3l1aCyyM> <https://www.youtube.com/watch?v=ATPsls7lcko> and was interviewed on film about her Public Engagement work at the University of Glasgow <https://www.youtube.com/watch?v=PVjn42cc59s>.

Given the evidence provided above, it is clear that Tansy is an individual who has worked tirelessly to introduce the widest possible audience to the wonderful world of microbiology. In doing so, she has ensured that the next generation of researchers are equipped with the experience and knowledge to facilitate greater interaction between scientists and the public, guaranteeing greater understanding of importance of science in the future.

Bibliography – please supply the following data from ISI web of knowledge <http://wok.mimas.ac.uk>.

Number of papers (results found)	53
Sum of the times cited	739
Average citation per item	13.94
h-index	14

3. Statement

Full rules of Society awards can be found on our website: www.microbiologysociety.org/prizelectures. Please read them carefully before confirming that by submitting a nomination you agree to abide by the rules of the scheme.

I confirm that I have read, understood and agree to abide by the rules of the award scheme.
(please put 'X' in box to confirm).

4. Nominator(s)

I confirm that I am a Member of the Microbiology Society (please put 'X' in box to confirm).

I confirm that the nominee is aware of the nomination and accepts all the terms and conditions of the prizes as set out on the website: www.microbiologysociety.org/prizelectures (please put 'X' in box to confirm).

Nominated by:

Name Dr Gillian Douce Email [redacted]
Date 6.6.17

Seconded by:

Name Dr David Bhella Email [redacted]
Date 6.6.17