

Hands-on DNA: Exploring Evolution Project invitation and information

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The UK Association for Science and Discovery Centres (ASDC) in partnership with At-Bristol, Centre for Life and Nowgen is delighted to launch a new national project funded by the Wellcome Trust to celebrate molecular biology and evolution with students across the UK.

The project aims to provide high-tech equipment, alongside training and other support to enable 15 new organisations to market and deliver cutting-edge molecular biology and evolution workshops as part of their on-going schools programme in 2012 and beyond.

This project has grown from a former Wellcome Trust funded project involving At-Bristol, Centre for Life and Nowgen who collaboratively pioneered a new molecular biology workshop for post-16 students. This workshop, 'A Question of Taste', has been a huge success, giving students the opportunity to take part in a full day hands-on PCR workshop where they discover their ability to taste a bitter compound and then test which version of the bitter taste receptor they have using modern laboratory techniques and cutting-edge equipment.

To date, nearly 2,700 students have participated in the workshops at these three centres and the feedback has been hugely positive. For information on the workshop, please visit www.survivalivals.org/a-question-of-taste/.

Our vision is to make the opportunity to explore evolution through high-quality, engaging molecular biology experiences, accessible to students across the UK. Hands-on DNA: Exploring Evolution will make this possible by providing training and equipment to enable new organisations to deliver either the 'A Question of Taste' PCR workshop, or for those organisations with less experience of molecular biology, a simpler two hour DNA workshop.

We therefore seek applications from interested organisations as outlined below. The deadline for applications is midnight 4 July 2011.

In summary, the project will offer the following to the 15 selected organisations:

- The equipment you need to run your chosen workshop

- A choice of two schools workshops, one for organisations with experience of molecular biology, the other for ‘new starters’
- Full and detailed training on how to run your workshop, including:
 - A two day training academy for two of your staff with their travel, food and accommodation all paid for
 - A visit to one of the partner science and discovery centres (At-Bristol, Centre for Life and Nowgen) to watch the workshop being run with school students, with your travel expenses paid
 - ‘Buddy training’ – you will be paired with an expert trainer from one of the partner centres who will provide support and training, including two visits to your organisation to help set up and run your first workshops.
 - On the phone technical support from ASDC
- A full marketing pack, including photos of the workshops for your schools leaflets, curriculum links for teachers, press releases and suggested charging models for the workshops
- Full assessment of the equipment you will need by ASDC, delivery of this to your site and any training required on its use
- An invitation to a National Hands-on DNA Meeting in spring 2012 to meet all those in the UK interested in this topic and to join the network

In return, the 15 organisations will agree to embed the workshops into their schools programme and run them to an agreed quality.

The details of the application and the commitment needed from each of the 15 selected organisations are outlined below. More detailed information can also be found on the website www.sciencecentres.org.uk/projects/handsondna/invitation_and_information.html.

Ensuring you have the equipment you need

This project will provide 15 participating organisations with the equipment required to run either ‘A Question of Taste’ for or the new two hour workshop. ASDC will assess in detail the equipment each organisation has, and what they need to run their chosen workshop. This equipment will be ordered centrally, and delivered to each of the 15 UK organisations.

Which workshop should you apply for?

In the application form, you will be asked to choose one of the two workshops and associated training courses, based on your experience with molecular biology and PCR. You are welcome to contact Michaela to discuss this in advance of your application. The choice of workshops is as follows:

1. The full-day ‘A Question of Taste’ PCR workshop for post-16 students
2. The new two hour workshop for 14-15 year old students

Both workshops explore aspects of evolution through hands-on DNA techniques and are fully curriculum-linked.

We would expect organisations with significant experience of delivering hands-on DNA workshops and/or significant molecular biology expertise on site to choose the 'A Question of Taste' PCR workshop. However, organisations that have never run any DNA workshops and do not have staff with hands-on experience in this area would be advised to apply for the new 2 hour workshop for 14-15 year old school groups.

The new two hour workshop is currently being developed by the project team and will be:

- focussed on evolution and natural selection in the context of contemporary DNA science
- targeted primarily at 14-15 year old students, but adaptable to 12-14 year olds and post-16 students
- based around practical laboratory techniques including gel electrophoresis and the use of micropipettes
- accompanied by appropriate teacher resources
- fully curriculum-linked
- developed with input from teachers

The project partners charge schools to attend 'A Question of Taste' workshops. To ensure that these workshops are sustainable, we suggest that new organisations can also charge schools and will provide guidance on this as part of the project.

Selection of the 15 participating UK organisations

Organisations wishing to participate will need to fill in the application form, which can be found on the ASDC website (www.sciencecentres.org.uk/projects/handsondna/application.html). The 15 participating organisations will be selected by ASDC in partnership with the Wellcome Trust and the project team.

The applications will be available from 1 June and the deadline for applications is midnight on 4 July 2011. Successful organisations will be notified on 15 July 2011.

Organisations that are eligible to apply, along with the criteria that will be used to select the 15 organisations, are shown in table 1 and further information is included below.

Criteria for selection of the 15 partner organisations

Applications are sought from not-for-profit and charitable organisations across the UK.

Experience of, or strong willingness to learn, hands-on molecular biology workshops	Essential
Strong links to local schools and teachers	Essential
Ability to integrate the new workshop into your existing schools programme	Essential
Infrastructure within your organisation, or through a partnership sufficient to deliver molecular biology workshops into the future*	Essential
Ability to embed the workshop into your FUTURE schools programme so that it will continue to run after June 2012	Highly desirable
Experience of facilitating dialogue activities	Desirable
Significant reach, either in terms of school visitor numbers, or geography	Desirable

Table 1: Criteria by which submitted applications will be assessed

*By infrastructure we refer to both the facilities (a room which could be used as a 'lab', and venue accessible to public for the majority of the year), and education/learning personnel available to deliver the workshops.

Priority will be given to organisations that:

- Have a remit to engage the public and school students with science*
- Are members of ASDC, or could become members of ASDC
- Have access to publically accessible venues for the majority of the year
- Have expertise in engaging students with science
- Have existing education or learning personnel
- Can demonstrate the desire and ability to embed one of the workshops into their future learning programmes
- Are science and discovery centres or museums

*Please note, science is used here in its broadest form

Geographical considerations

The goal of this project is to make the opportunity to explore evolution through high-quality, engaging molecular biology experiences accessible to students across the UK. Therefore in the selection of the 15 new organisations, consideration will be given to a national spread of workshops, ensuring all areas of the UK are covered. To make these workshops sustainable we aim to avoid organisations competing for the same students, and this will be relevant to our selection.

Please note, the workshops are already being delivered in Bristol, Manchester and Newcastle, and to ensure the long-term sustainability of these workshops, we will not consider applications from these cities.

In addition to geographical considerations, we will also consider the amount of equipment required and choice of workshop when selecting the 15 new organisations.

Examples of those who might apply

- Science and discovery centres
- Science museums
- Scientific institutions with a remit for education, and engagement with science

We will consider applications from the following if they can demonstrate that they fulfil the criteria of organisations which will be given priority:

- Zoos
- University departments

We would be happy to receive applications from the following if in partnership with organisations with year-round publically accessible venues such as science centres and museums:

- Freelancers
- University departments without a dedicated outreach or teaching space

Please feel free to get in contact to discuss whether you should apply.

Your commitment

To be considered for this project, your organisation needs to commit to the following:

- To embed the workshops in your future schools programme
- To run at least five schools workshops before 30 March 2012
- For two staff to participate in all elements of the training programme (your expenses paid)
- To send two staff to the National Hands-on DNA Meeting
- To market the workshops in accordance to guidelines given by ASDC and the project team

Organisations wishing to apply should refer to the training and delivery schedule below to ensure that their chosen members of staff on this project are available to attend the academies and keep to other deadlines.

Training and Delivery Schedule

Selection Process begins	1 June 2011
Deadline for applications	Midnight on 4 July 2011
Notification of success	15 July 2011
Discussions with the 15 organisations to assess the equipment they need, including site visits for 10 organisations.	18 July – 18 Aug 2011
Delivery of marketing pack	July-August 2011
Delivery of equipment	26 Sept – 13 Oct 2011
A Question of Taste Training Academy	3-4 Oct 2011
New workshop Training Academy	2-3 Nov 2011
Deadline for buddy training	16 Feb 2011
Deadline for delivery of five workshops by new organisations	30 March 2012
National Hands-on DNA Meeting	March/April 2012
Project ends and ASDC report back to Wellcome Trust on outcomes	30 April 2012

Table 2: Key dates in the Hands-on DNA project

How to apply

To apply, please fill in the application form attached (also available from the ASDC website) including a 'statement of commitment' of no more than 500 words telling us how you would benefit from taking on either 'A Question of Taste' or the new two hour workshop, and how you would embed this into your workshop programme and continue running it in the future. Your proposal should also address how you will achieve the criteria listed in table 1.

You can return your application to us by email or post.

Applications must reach ASDC by midnight 4 July 2011.

Please feel free to call Michaela Livingstone if you would like to discuss whether to apply 0117 915 0184.

Once all the required documents have been completed, please send them to: Michaela Livingstone

By email: michaela.livingstone@sciencecentres.org.uk

By post:

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