

# **Evaluation of HE STEM Outreach activities**

**Report of a survey of HE STEM practitioners conducted  
for the NCCPE**

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## **Summary**

161 people responded to the survey which was conducted during November 2011. Respondents were well distributed across HE STEM subject disciplines. Respondents were also well distributed geographically and across different types of institutions, with the majority coming from universities.

Nearly 80% of respondents are interested in participating in learning more about evaluation. The survey provides useful indicators to the kind of support preferred and the areas around which that support should be provided, and these are set out in the report.

## **1 Background to the research**

The National Co-ordinating Centre for Public Engagement (NCCPE) and the Beacons for Public Engagement have been funded by the National HE Stem programme as part of a Practice Transfer Partnership (PTP) to develop evaluation training to support people working in HE STEM outreach projects. The project will support practitioners to develop and utilise evaluation methodologies to improve their own practice and to demonstrate the impact of their outreach activities.

The Centre commissioned Farmer Research Associates to undertake a survey of HE STEM outreach practitioners to inform the design of the programme, and this is a report of the findings.

## **2 Purpose**

The purpose of the survey was to provide information to inform the details of the joint HE STEM Programme/Beacons for Public Engagement project to develop evaluation training for HE STEM Outreach Practitioners.

## **3 Methodology**

The survey was designed in discussion with the Deputy Director (DD) of the NCCPE. The final design was agreed with National HE Stem Project Manager, representatives from the Beacons and the DD, who signed it off in early November 2011. The survey was conducted electronically using Bristol Online Surveys (BOS), between 2<sup>nd</sup> and 30<sup>th</sup> November 2011.

The survey was divided into four sections:

- 1) The respondents: their job roles, the types of outreach involved in, their subject(s), the names of their institutions or organisations, and their locations within them;
- 2) Knowledge and understanding of evaluation for HE STEM Outreach;
- 3) Levels of involvement in evaluation of HE STEM Outreach, the kinds of materials used, and attitudes to evaluation;
- 4) Interest in personal development in the evaluation of HE STEM Outreach, and preferred ways of receiving support.

Annex A provides more detail about the content of the survey including the text of the Introduction and of the 21 main questions.

## 4 Findings

The findings in this report are structured to reflect the responses for sections 1) to 3), and analysing these results mainly in relation to responses to section 4). This approach is intended to enable NCCPE to identify more readily the key messages from the survey for planning the support programme. 161 people responded to the survey. Annex B provides the full results.

### Section 1: Information about the respondents

#### 4.1 Employment status and involvement in HE STEM outreach (Tables 1 and 1a)

Respondents were asked about their employment status and the extent to which their job role is committed to HE STEM activity. Table 1 shows that the largest group of respondents (105, 65%) were people who were employed full-time in an institution, with roles that are partly committed to HE STEM outreach. 32 of the remaining 56 people were evenly split between those who are full-time in an institution and wholly committed to HE STEM outreach, and those who are part-time and partly committed to HE STEM outreach. 15 of the 19 people not in these categories were in roles that were partly-committed to HE STEM outreach.

**Table 1: Employment status of respondents and involvement in STEM**

Results are for Question 2, job role, cross tabulated by Question 1 employment status

My current job role	Full time at my institution	Part-time at my institution	Part-time at more than one institution	On a self-employed basis	Student	Other	Totals (% of all respondents)
Wholly committed to HE STEM outreach	18	6	1	1	1	0	27 (17%)
Partly committed to HE STEM outreach	105	14	1	4	5	5	134 (83%)
<b>Totals (% of all respondents)</b>	123 (76%)	20 (12%)	2 (1%)	5 (3%)	6 (4%)	5 (3%)	161

Respondents whose role was partly committed to HE STEM outreach were asked about the sort of activities that the rest of their role was given to, and the results are shown in Table 1a. Of the 134 respondents in this group, undertaking academic work was cited most commonly (70 times) with other forms of engagement cited at about one third of that rate, (23, 20 and 17 times). Further, within the group of 70 respondents who cited academic work as the remainder of their role, Business Engagement was cited 5 times, Community Engagement work four times, and Other Outreach Work twice. Of the 27 who cite Community Engagement, 10 are also involved in Business Engagement, while academic work gets mentioned by this group only four times. The extent of the overlap between these types of activity has not been fully analysed, but it does appear that within the 134 respondents who are partly committed to HE STEM outreach, there is an approximate 50/50 split between: (a) those whose job role consists of STEM outreach and academic work, and (b) those whose work consists of STEM outreach and other forms of engagement.

**Table 1a Remainder of job role for those partially committed to HE STEM outreach**

	% of all respondents	Number
Academic work (teaching and/or research)	43%	70
Academic-related work	15%	24
Community Engagement work	14%	23
Outreach in other subjects	12%	20
Business Engagement	11%	17
Charity work	1%	2
Other	17%	28
<b>Totals</b>		<b>134</b>

#### 4.2 Place of respondents within an institutional structure and type of institution (Tables 2 and 3)

Nearly 60% of respondents work in academic departments (see Table 2), while the rest are divided between departments/units with responsibilities across an academic institution, and those who work in other types of institution. The spread of responses to other questions suggests that this is broadly representative of HE STEM practitioners in general – although this cannot be validated. As Table 3 shows, respondents also came from a reasonable spread of types of institution; three quarters came from universities, with the remainder from a range of other organisations. Respondents from universities were reasonably well spread amongst the four home nations and from pre- and post-92 institutions. A list of all 56 universities is provided in Annex B.

**Table 2: Place of respondents within an institutional structure**

	% of all respondents	Number
An academic faculty/department	59%	95
A department/unit which organises outreach activities across my institution	18%	29
I am not located in an academic institution	14%	22
Other	9%	15
	100%	161

**Table 3: Institutions and organisations respondents work for**

Institution	% of all respondents	Number
UK University	75%	120
Commercial organisation	6%	9
Research Centre	4%	6
Research Council	3%	5
Professional Body	3%	4
Non-UK University	2%	3
Other	7%	14
Total	100	161

### 4.3 Subject specialisms (Table 4)

As shown in Table 4, respondents were fairly evenly spread across the four subjects on which the National HE STEM programme has been concentrating; it should be noted that some respondents work in more than one of these subjects. Other STEM subjects were also represented, with 34 references to Biological Sciences. Subject discipline demonstrated no significant differences in the responses to other questions in the survey.

**Table 4: HE STEM subjects specialised in for HE STEM Outreach**

	% of all respondents	Number
Mathematics	35%	56
Physics	34%	54
Engineering	32%	52
Chemistry	29%	47
Biology and related sciences	21%	34
General/interdisciplinary	10%	16
Medicine and medical-related	7%	11
Environmental Sciences	6%	10
Other	16%	26

### 4.4 Interest in further support (Table 5)

Since a major purpose of the survey was to identify levels of interest in further support for evaluation, the overall response to the question that directly asked about this is included at this point. Taken all together, just under 80% of respondents indicated that they are interested in further support for their evaluation work (Table 5). However, as the analysis presented in the following sections will show, these responses were generally fairly evenly distributed across all types of respondents (i.e. there is no one factor that predisposes a respondent to want, or not to want, further support). Furthermore, lack of interest in further support does not preclude expressed interest in further types of resource. Only 9 of the 35 respondents not interested in further support also gave no answer to Question 20 about resources (see Paragraph 4.12). So it would appear that this question was interpreted by respondents as referring to direct training, rather than a broader definition of support that includes resources.

**Table 5: Interest in further support: responses to Question 19.**

Interest in/willingness to participate in learning more about evaluation	% of all respondents	Number
Not interested in receiving any further support for my understanding of or practice in evaluation:	21.7%	35
Interested in activities or events to enhance my GENERAL understanding of and practice in evaluation:	54.7%	88
Interested in activities or events to enhance SPECIFIC aspects of my understanding of and practice in evaluation:	23.6%	38
	100%	161

#### 4.5 Outreach activities (Table 6)

STEM outreach can take many forms. Respondents were asked to identify the types of activities they engage in, and this response has been cross tabulated with interest in further support, to explore whether there is any obvious connection between types of outreach provided by respondents and levels of interest in support. Respondents are involved in a wide range of HE STEM outreach activities. The types of outreach most commonly mentioned (by between 53% and 65% of all respondents) are all teaching or presentation based (i.e. workshops, lectures, open days and experiments and practical activities).

However, as Table 6 demonstrates, the only category of activity in which respondents were engaged, where there was also 100% interest in some further support was Theatre Projects. All other categories of activity are associated with some form of further support, with at least 70% interest, and in most cases up to 80% interest, associated with every other type of activity.

**Table 6: Types of Outreach activity respondents are involved in cross tabulated with interest in further support**

Types of Outreach activity involved in:	Not interested in receiving any further support	Interested in activities or events to enhance my GENERAL understanding.	Interested in activities or events to enhance SPECIFIC aspects of my understanding	Totals (% of all respondents)
Hands on workshops	16	62	27	105 (65%)
Theatre projects	0	13	4	17 (11%)
Experiments and practical activities	13	49	24	86 (53%)
Competitions	8	30	12	50 (31%)
Games	4	12	8	24 (15%)
Lectures	19	59	23	101 (63%)
Videos/CDRom	3	13	9	25 (16%)
Master classes	17	29	16	62 (39%)
Online interactive	5	15	15	35 (22%)
University open days/visits	18	52	23	93 (58%)
Festivals	10	47	20	77 (48%)
Teaching Resources for use by school teachers	11	43	23	77 (48%)
Work shadowing by school/college staff	5	9	3	17 (11%)
<i>Other</i>	10	20	6	36 (22%)
<b>Totals</b>	139	453	213	805

## Section 2: Knowledge and understanding of evaluation for HE STEM Outreach

### 4.6 Knowledge and understanding cross-tabulated with interest in further support (Tables 7-9)

Responses to this section provide information about the current level of knowledge and understanding of evaluation amongst HE STEM practitioners, compared with their interest in receiving further support. As Tables 7-9 show, those who regard themselves as having a thorough knowledge of all aspects of evaluation (theories, purposes and methodologies) are less likely to be interested in further general support than those with adequate or less knowledge. Respondents in this category are also more interested in support for specific aspects of evaluation than for support that will enhance their general understanding. The specific aspects of support suggested are discussed in Section 4.4 above in the analysis of responses to Question 19 in Table 5.

**Table 7: Q7, Knowledge of theories of evaluation, cross-tabulated by Q. 19, levels of interest in further support**

Knowledge of theories of evaluation	Not interested in receiving any further support	Interested in activities or events to enhance my GENERAL understanding	Interested in activities or events to enhance SPECIFIC aspects of my understanding	Totals (% of all respondents)
Thorough	9	4	8	21 (13%)
Adequate	10	40	19	69 (43%)
Limited	13	35	11	59 (37%)
None	3	9	0	12 (8%)
<b>Totals</b>	<b>35 (22%)</b>	<b>88 (55%)</b>	<b>38 (24%)</b>	<b>161</b>

**Table 8: Q8, Knowledge and understanding of the purposes of evaluation, cross tabulated by Q 19, levels of interest in further support**

Knowledge and understanding of the purposes of evaluation	Not interested in receiving any further support	Interested in activities or events to enhance my GENERAL understanding	Interested in activities or events to enhance SPECIFIC aspects of my understanding	Totals (% of all respondents)
Thorough	12	14	15	41 (24%)
Adequate	16	53	19	88 (55%)
Limited	5	18	4	27 (17%)
Non-existent	2	3	0	5 (3%)
<b>Totals</b>	<b>35</b>	<b>88</b>	<b>38</b>	<b>161</b>

**Table 9: Q9, Knowledge and understanding of methodologies of evaluation cross tabulated by Q, 19, levels of interest in receiving further support**

Knowledge and understanding of methodologies of evaluation	Not interested in receiving any further support	Interested in activities or events to enhance my GENERAL understanding	Interested in activities or events to enhance SPECIFIC aspects of my understanding	Totals (% of all respondents)
Thorough	9	4	9	22 (14%)
Adequate	19	42	22	83 (52%)
Limited	4	35	7	46 (29%)
Non-existent	3	7	0	10 (6%)
<b>Totals</b>	<b>35</b>	<b>88</b>	<b>38</b>	<b>161</b>

### Section 3: Involvement in evaluation of HE STEM Outreach and interest in further support

Responses to this section provide information about the current level of involvement in evaluation by HE STEM outreach practitioners, and their attitudes to evaluation more widely.

#### 4.7 Evaluation undertaken (Table 10)

70% of respondents undertake their own evaluation of their HE STEM outreach activities, and 19% report that someone else undertakes the evaluation. About 11% report that there is no evaluation that they are aware of. Lack of interest in further support is spread across all three categories, with around 18% of those who undertake their own evaluation not interested, compared with around 30% for the other two categories of levels of involvement in evaluation.

**Table 10: Involvement in evaluation activities cross-tabulated with interest in further support.**

Involvement in evaluation activities	Not interested in receiving any further support	Interested in activities or events to enhance my GENERAL understanding	Interested in activities or events to enhance SPECIFIC aspects of my understanding	Totals (% of all respondents)
Yes, do it myself	20	61	31	112 (70%)
No, but someone else evaluates it	10	17	4	31(19%)
There is no evaluation that I am aware of	5	10	3	18 (11%)
<b>Totals</b>	<b>35</b>	<b>88</b>	<b>38</b>	<b>161</b>

#### 4.8 Purposes of evaluation undertaken (Tables 11 and 12)

The suggested purposes in the survey were adapted from those in Moore (2011)<sup>1</sup>. Evaluation for improvement (81% of all respondents) and evaluation for impact (78% of all respondents) were the most common purposes cited, and these match the intended focus of the programme as described in the Introduction to the Survey (Annex A). Evaluation for funding (or to satisfy

<sup>1</sup> Moore, Ivan (2011) *A guide to practice: evaluating your Teaching Innovation*: The National HE STEM programme Curriculum Innovation Projects: Royal Academy of Engineering, Engineering Subject Centre

the funders) was the third most common reason given, cited by 40% of respondents. Again, as Tables 11 and 12 illustrate, the reason respondents give for the purposes of their evaluation do not relate directly to their interest in further support, with people not interested in further support citing all the major reasons for their STEM Evaluation.

**Table 11 Q12, Purposes of current evaluation activities**

Purposes of current evaluation activities	% of all respondents	Number
To help improve the practice of HE STEM Outreach:	81%	131
To demonstrate the impact of HE STEM Outreach activities:	78%	126
To contribute to the overall knowledge base about evaluation:	23%	37
To inform and/or demonstrate commitment to institutional Access Agreement.:	16%	25
To secure funding:	40%	64
I am unclear what the purposes are:	3%	5
Other ( <i>please specify</i> ):	12%	19

**Table 12: Q12, Purposes of current evaluation activities cross tabulated by Q19 interest in receiving further support**

Purposes of current evaluation activities	Not interested in receiving any further support	Interested in to enhance my GENERAL understanding	Interested to enhance SPECIFIC aspects of my understanding	Totals
To help improve the practice of HE STEM Outreach	25	71	35	131
To demonstrate the impact of HE STEM Outreach activities	22	70	34	126
To contribute to the overall knowledge base about evaluation	6	16	15	37
To inform and/or demonstrate commitment to institutional Access Agreement	7	12	6	25
To secure funding	13	31	20	64
I am unclear what the purposes are	3	1	1	5
<i>Other</i>	5	9	5	19
<b>Totals</b>	<b>81</b>	<b>210</b>	<b>116</b>	<b>407</b>

#### 4.9 Attitudes to evaluation (Table 13)

Attitudes to evaluation are overall very positive, with nearly 90% of respondents rating evaluation as either essential or desirable (Table 13). Even within this group, however, there are 15 not interested in further support. However, the comments in section 4.4 above about what respondents might have meant by ‘support’ in this context – either to mean simply training, or to include the provision of resources, apply here. 144 respondents (90%) were

interested in further support, of whom 84 (53%) were interested in a support for their general understanding, and 35 (23%) for specific aspects of their understanding.

**Table 13: Q13. Attitude towards evaluation. cross-tabulated by Q19 interest in further support**

Attitude towards evaluation	Not interested in receiving any further support	Interested in activities or events to enhance my GENERAL understanding	Interested in activities or events to enhance SPECIFIC aspects of my understanding	Totals
Essential	15	47	30	92 (57%)
Desirable	10	37	5	52 (32%)
A distraction	3	2	2	7 (4%)
An irrelevance	3	0	0	3 (2%)
An external requirement	4	2	1	7 (4%)
Totals	35	88	38	161

#### 4.10 Support for evaluation (Tables 14-16)

Not surprisingly, those who are wholly committed to STEM outreach are slightly more likely to have received training/support in evaluation than those whose roles include other areas. However, 78 respondents (48%) report that they have had no training in any aspects of evaluation (Table 14).

Just under one third of respondents (Table 15) report that there is no support in evaluation currently available to them. Where support is available, this is evenly distributed between support from within and from outside their current institution. Taking these responses together with responses on support actually received, suggests that there is clear scope to provide more support.

**Table 14: Q 16. Have you received training/support on evaluation? Cross-tabulated by Q2 extent of role committed to HE STEM outreach**

	Wholly committed to HE STEM outreach	Partly committed to HE STEM outreach	Totals (% of all respondents)
Yes	17	66	83 (52%)
No	10	68	78 (48%)
Totals (% of all respondents)	27 (12%)	134 (83%)	161

**Table 15: Q15, Support for evaluation available (multiple responses allowed)**

Support for evaluation already available	Not interested in receiving any further support	Interested in activities or events to enhance my GENERAL understanding	Interested in activities or events to enhance SPECIFIC aspects of my understanding	Totals (% of all respondents)
From within my institution	19	30	13	62 (39%)
From outside my institution	8	32	18	58 (36%)
From my organisation (I do not work in an academic institution)	4	7	6	17 (11%)
There is no support that I am aware of	7	33	7	47 (29%)
<b>Totals</b>	<b>38</b>	<b>102</b>	<b>44</b>	<b>184</b>

**Table 16: Q16, Receipt of training/support on evaluation cross tabulated with Q19 interest in further support**

Receipt of training/support on evaluation	Not interested in receiving any further support	Interested in activities or events to enhance my GENERAL understanding o	Interested in activities or events to enhance SPECIFIC aspects of my understanding	Totals (% of all respondents)
Yes	18	40	25	83 (52%)
No	17	48	13	78 (48%)
<b>Totals</b>	<b>35</b>	<b>88</b>	<b>38</b>	<b>161</b>

A more detailed breakdown of where support currently comes from, and in what form, is provided by the responses to question 16a (detailed in Annex B). As one might expect, more receive support in the form of workshops and/or training events, and 1-to-1 coaching mentoring from within their own organisation than from outside, whilst conversely more receive support in the form of on-line materials from outside their own organisation than from within. It should be noted that the highest level of response was to workshops and/or training events from within the respondents' own organisations, but even for this the response rate was less than one third (28%).

Just under one third (28%) of respondents have provided training or support to others in evaluation. The distribution of types of support provided is broadly similar to that of support received, (albeit with lower numbers) with 16% having provided workshops and/or training events to others within their own organisation and 13% to others outside their own organisation.

#### **4.11 Use of resources (Table 17)**

More than half of respondents have not used any of the seven evaluation resources and tools listed on the national HE STEM Programme website <sup>2</sup>. Of those who have used them, the

<sup>2</sup> <http://www.hestem.ac.uk/evaluationtools>

highest usage is of *Evaluation: Practical Guidelines* (RCUK); none of the other six scored more than 15%. To ensure that respondents could be clear as to which sets of resources were referred to in the question, a link was provided to the webpage referred to above<sup>3</sup>. The fact that fewer than half of the respondents use any of the nationally-available resources suggests that information about the availability of such resources is not getting to the people who responded to this survey, and may suggest a wider problem with the promotion of such materials to all involved in such work. However, in designing the programme NCCPE may wish to take account of the modest level of usage of the resources currently available.

Responses to Question 19a about which specific aspects respondents were interested did not yield substantial data. Only 27 (17%) responded to this question, (fewer than the 38 who indicated interest in such support in the earlier question), and some of these responses appeared to be about general rather than specific aspects. Even when grouped, the largest response represented 4% of all respondents. With such small numbers, responses that were received (see Annex B) should be treated with some caution.

**Table 17: Q18, Use of evaluation materials currently available**

I have used the following on-line support materials on evaluation :	% of all respondents	Number
None of these	53%	85
Evaluation: Practical Guidelines (RCUK)	27%	44
Guide to teaching evaluation (National HE STEM Programme)	14%	23
Evaluation Resources (NCCPE)	14%	23
Resources for Evaluating Science Engagement Activities (NCCPE)	10%	16
Project Planning -- Evaluation Plan (JISC)	7%	12
STEM Subject Centres Evaluation Toolkit (HEA)	7%	12
Impact Evaluation Model (Training & Development Agency for Schools)	4%	7
Other	12%	19
Manchester Beacon Guide		3
RAEng toolkit <sup>4</sup>		2
Visitor Studies Association		2
STEM cohesion guide		1
Other <sup>5</sup>		10
Total	n/a	241

#### 4.12 Preferred means of learning (Tables 18 and 19)

As Table 18 shows, the most popular method chosen for participating in evaluation support activity is through on-line resources (chosen by 73% of respondents). However, half of this group (62 out of 118) indicated in their responses to Question 18 that they have not used those on-line resources that are currently available. This may be further evidence that information about existing resources is not reaching practitioners who would have an interest in such materials.

<sup>3</sup> One respondent was grateful enough for this to write in their free-text response to this question *Thanks for the link! We can improve our evaluation programme with these resources :0)*

<sup>4</sup> Probably referring to Moore (2011)

<sup>5</sup> Including one reference to Moore (2011)

There is also strong support for workshops and training events, which satisfy different needs and could well be enhanced or augmented by downloadable resources; the two categories clearly are not mutually exclusive either in terms of the interest of respondents (79 of those who indicated a preference for downloadable resources also asked for workshops /training events) or the way in which such activities can, and often frequently do, operate.

There was less support for online discussions or support groups; however, if the proportion of respondents interested in this (23%) are representative of the wider HE STEM outreach community, there could be sufficient interest to reach the critical mass of people needed to make such resources successful.

There appear to be no discernible differences between different subject disciplines in responses to this question, nor between respondents with different attitudes to evaluation. **This suggests that a generic training programme should be of interest to people in any discipline.**

Table 19 demonstrates that even those people who said they were not interested in further support for their evaluation activity expressed a preference for different ways of participating, with (again) a particular interest in downloadable resources. It may be, therefore, that support resources (and in particular downloadable resources) may be of future interest to this group, even though at the moment they are expressing no interest in further support.

**Table 18: Q20, Preferred ways of participating in learning more about evaluation**

How would you prefer additional support to be provided?	% of all respondents	Number
Downloadable resources	73%	118
Workshops/Training events	66%	106
Online learning	38%	61
Online discussion/Support groups	23%	37
Other	4%	6

**Table 19: Preferred ways of participating in learning more about evaluation cross-tabulated by levels of interest in support**

How would you prefer additional support to be provided?	Not interested in receiving any further support	Interested in activities or events to enhance my GENERAL understanding	Interested in activities or events to enhance SPECIFIC aspects of my understanding	Totals (% of all respondents)
Downloadable resources.	19	69	30	118 (73%)
Workshops/Training events.	7	65	34	106 (66%)
Online learning.	8	39	14	61 (38%)
Online discussion/Support groups.	2	23	12	37 (23%)
<i>Other</i>	0	2	4	6 (4%)
<i>No Answer</i>	9	1	0	10 (6%)
<b>Totals</b>	45	199	94	338

#### 4.13 Preferred focus of learning (Table 20)

Multiple responses to six alternatives in Question 21 were permitted and an average of three responses per respondent were made. Table 20 shows that there was significant support for all six types of resources suggested; only two respondents suggested anything other than this six. The most attractive option however, was that of practical tools for evaluation, and the levels of interest in the other options suggest a strong overall preference for support with the practical development and implementation of evaluation activity, compared with theories of evaluation, although even here there was interest from 32% of all respondents.

**Table 20: Q21. Preference for the subject of resources**

What should resources focus on to be most helpful to you?	% of all respondents	Number
Practical tools for evaluation (e.g. checklists, pro-forma)	74%	119
Models of evaluation	58%	94
Case-study examples	57%	91
Implementing evaluation	46%	74
Planning evaluation	44%	71
Theories of evaluation	32%	52
Other	1%	2
Total	n/a	503

## 5 Conclusions

The overall profile of respondents appears to be consistent with the profile of HE STEM outreach practitioners generally; certainly there was a good spread across subject disciplines and types and locations of institution. This enables reasonable confidence to be placed in the representativeness of the sample. A number of conclusions can therefore be drawn from the results of this survey.

- a) A wide range of outreach activities is currently provided, and the scope of information about evaluation methodologies needs to accommodate this range (4.5, Table 6)
- b) Levels of knowledge of evaluation theories, purposes and methodologies vary, with the highest level of knowledge being around purposes, suggesting that an emphasis on further work around theories and methodologies could be useful. (4.6 Tables 7-9) This conclusion is further supported by the responses to the preferred focus of further learning (4.12 Tables 18-19)
- c) A significant proportion of practitioners already undertake evaluation (4.7 Table 10)
- d) The two main purposes of the evaluation currently undertaken (for improvement and for impact) are consistent with the planned twin foci of the training programme to be developed (4.8 Tables 11-12)
- e) Attitudes towards evaluation are generally very positive (4.9 Table 13)
- f) Nearly half of all respondents have received no training in evaluation (4.10 Tables 14-16)
- g) There is significant interest in support for evaluation (4.4 Table 5) and no one factor appears to be associated with interest or lack of interest in such support (Tables 6, 7, 8, 9, 10, 12, 13, 15, 16, 19)
- h) However, current on-line resources for evaluation provided through the national HE STEM website appear to be under-used (4.11 Table 17)
- i) There are no major differences in responses between the different subject disciplines (4.3)

## **6 Messages for the NCCPE in designing the programme**

- a) There would be purpose in developing a general support programme, particularly around theories and methodologies;
- b) There is sufficient interest for the programme to cover both basic aspects of evaluation for those less experienced, and more detailed aspects for those with more experience;
- c) It may be advisable to take account of the modest level of usage of the on-line resources for evaluation currently available, and perhaps undertake some further investigation into the lack of awareness of these existing resources;
- d) A generic programme should be of interest to people in any discipline;
- e) On-line resources and workshops are the most requested form of further support although there is a level of interest in on-line learning and on-line discussion/support groups which suggests these may be worth further exploration, or at least including as alternative delivery methods for key messages or aspects of the training.

Farmer Research Associates  
March 2012

## **Annex A**

### **HE STEM Outreach Practitioners Evaluation Survey**

#### **Information about the Survey**

## **Text of Introduction**

Welcome, and thank you for taking an interest in this survey. The information that we gather through the survey will inform the details of the joint HE STEM Programme / Beacons for Public Engagement project to develop evaluation training for HE STEM Outreach Practitioners.

The National HE STEM Programme supports Higher Education Institutions in the exploration of new approaches to recruiting students and delivering programmes of study within the Science, Technology, Engineering and Mathematics (STEM) disciplines. Its particular focus is on strategically important but vulnerable subjects namely: Chemistry, Engineering, Maths and Physics.

The National Co-ordinating Centre for Public Engagement (NCCPE) and Beacons for Public Engagement are developing evaluation training to support people working in HE STEM outreach projects. The project will support practitioners to develop and utilise evaluation methodology to improve their own practice and to demonstrate the impact of their Outreach activities.

We want to know about your experiences of evaluation, and your thoughts about the training that we will develop.

There are 22 questions divided into four major sections in the survey. The first section asks for some details of your job role, which will help us to analyse the responses, although no personal information will feature in our results. The second section aims to find out a bit about your current knowledge and understanding of evaluation theory and practice. The third section focuses on your involvement in the evaluation of HE STEM Outreach. Lastly, the fourth section explores your interest in personal development in evaluation of HE STEM Outreach. Most of the questions are multiple choice or multiple response, and the whole survey should take no more than 10 minutes to complete.

If you have any queries about the survey, please contact Mike Farmer on 01242 700646, or by email at [mikefarmer84@hotmail.com](mailto:mikefarmer84@hotmail.com).

### **Data Protection statement**

All data collected in this survey will be held securely. No individual will be identified in the reporting of the findings from this survey. Cookies (personal data stored by your Web browser) are not used in this survey.

## **Survey questions**

Full details of the survey questions and the responses to them can be found in Annex B Responses to the Survey. The main question headings are listed below

### **Section 1: Information about the respondent.**

1. Employment status.
2. Current job role.
- 2.a. Remainder of job role is (optional - where current HE STEM job role is partial)
3. Types of Outreach activity involved in
4. Place within an institutional structure.
5. HE STEM subjects specialised in for HE STEM Outreach
6. Name of institution (free text)

### **Section 2: Knowledge and understanding of evaluation for HE STEM Outreach**

7. Level of knowledge of theories of evaluation.
8. Level of knowledge and understanding of the purposes of evaluation.
9. Level of knowledge and understanding of evaluation methodologies.

### **Section 3: Involvement in evaluation of HE STEM Outreach**

10. Personal involvement in evaluation own HE STEM Outreach activities
11. Personal involvement in evaluation of other people's HE STEM Outreach activities
12. Purposes of current evaluation of HE STEM activities.
13. Attitude towards evaluation.
15. Support for evaluation already available.
16. Receipt of training/support on evaluation (Yes/No)
- 16.a. Form of training/support on evaluation received (optional)
17. Provision of training/support on evaluation. (Yes/No)
- 17.a. Types of training/support provided (optional)
18. Use of on-line evaluation materials currently available.

### **Section 4: Interest in personal development in evaluation of HE STEM Outreach**

19. Interest in/willingness to participate in learning more about evaluation.
- 19.a. Specific aspects desired for enhancement (optional).
20. Preferred ways of receiving additional support/resources about evaluation.
21. Preference for the subject of resources; resources focus considered most helpful.

## **Annex B**

### **HE STEM Outreach Practitioners Evaluation Survey**

#### **Responses to the Survey**

**Section 1: Information about you.**

<b>1. Your employment status. Please tell us about your employment status:</b>	<b>%</b>	<b>Number</b>
Full time at my institution.:	76.4%	123
Part-time at my institution.:	12.4%	20
Student.:	3.7%	6
On a self-employed basis.:	3.1%	5
Part-time at more than one institution.:	1.2%	2
Other	3.1%	5
Total	100	161

*Single response only permitted: percentages sum to 100*

<b>2. Your job role. "My current job role is...":</b>	<b>%</b>	<b>Number</b>
Partly committed to HE STEM outreach.:	83.2%	134
Wholly committed to HE STEM outreach.:	16.8%	27
Total	100	161

*Single response only permitted: percentages sum to 100*

<b>2.a. "The remainder of my job role is...":</b>	<b>%</b>	<b>Number</b>
Academic work (teaching and/or research).:	43%	70
Academic-related work.:	15%	24
Community Engagement work.:	14%	23
Outreach in other subjects.:	12%	20
Business engagement.:	11%	17
Charity work.:	1%	2
Other	17%	28
Management/Administration		10
Academic work (not included above)		5
Communications		3
Other		10
Total	n/a	184

*Multiple responses permitted: percentages are of all respondents and do not sum to 100*

<b>3. Types of Outreach activity. Please indicate which of the following types of Outreach activity you are involved in:</b>	<b>%</b>	<b>Number</b>
Hands on workshops.:	65%	105
Lectures.:	63%	101
University open days/visits.:	58%	93
Experiments and practical activities.:	53%	86
Festivals.:	48%	77
Teaching Resources for use by school teachers.:	48%	77
Masterclasses.:	39%	62
Competitions.:	31%	50
Online interactive.:	22%	35
Videos/CDRoms.:	16%	25
Games.:	15%	24
Theatre projects.:	11%	17
Work shadowing by school/college staff.:	11%	17
Other	22%	36
	Careers/IAG	4
	Ambassadors	4
	Other	28
<b>Total</b>	n/a	805

*Multiple responses permitted: percentages are of all respondents and do not sum to 100*

<b>4. Your place within an institutional structure. "I am located in...":</b>	<b>%</b>	<b>Number</b>
An academic faculty/department.:	59.0%	95
A department/unit which organises outreach activities across my institution.:	18.0%	29
I am not located in an academic institution.:	13.7%	22
Other	9.3%	15
	Research Council	2
	Research Centre/Institute	3
	Management/Administration	3
	Volunteer/honorary position	2
	Combination of two of the main responses	2
	Non-academic institution (not included in main responses)	2
	<b>Total</b>	<b>100</b>
		<b>161</b>

*Single response only permitted: percentages sum to 100*

<b>5. Your HE STEM subjects. Which subjects do you specialise in for HE STEM Outreach?</b>	<b>%</b>	<b>Number</b>
Mathematics.:	35%	56
Physics.:	34%	54
Engineering.:	32%	52
Chemistry.:	29%	47
Biology and related sciences	21%	34
General/interdisciplinary	10%	16
Medicine and medical-related	7%	11
Environmental Sciences	6%	10
Other	16%	26
	<b>n/a</b>	<b>286</b>

*Multiple responses permitted: percentages are of all respondents and do not sum to 100*

<b>6. Your institution:</b>	<b>%</b>	<b>Number</b>
UK University	74.5%	120
Commercial organisation	5.6%	9
Research Centre	3.7%	6
Research Council	3.1%	5
Professional Body	2.5%	4
Non-UK University	1.9%	3
Other	6.7%	14
<b>Total</b>	<b>100</b>	<b>161</b>

*Single response only permitted: percentages sum to 100*

<b>Respondents from UK Universities: national location</b>	<b>%</b>	<b>Number</b>
England	78%	94
Wales	13%	16
Scotland	8%	9
N Ireland	1%	1
<b>Total</b>	<b>100%</b>	<b>120</b>

<b>Respondents from UK Universities: type</b>	<b>%</b>	<b>Number</b>
Pre-92	74%	89
Post-92	26%	31
<b>Total</b>	<b>100%</b>	<b>120</b>

<b>Respondents from English Universities: regional location</b>	<b>%</b>	<b>Number</b>
North West	29%	27
South West	12%	11
London	12%	11
Yorkshire & Humberside	11%	10
East Midlands	9%	8
East Anglia	9%	8
South East	7%	7
North East	6%	6
West Midlands	4%	4
<b>Total</b>	<b>100%</b>	<b>94</b>

<b>UK Universities represented: national location</b>	<b>%</b>	<b>Number</b>
England	86%	48
Wales	7%	4
Scotland	5%	3
N Ireland	2%	1
<b>Total</b>	<b>100%</b>	<b>56</b>

<b>UK Universities represented: type</b>	<b>%</b>	<b>Number</b>
Pre-92	64%	36
Post-92	36%	20
<b>Total</b>	<b>100%</b>	<b>56</b>

<b>English Universities represented: regional location</b>	<b>%</b>	<b>Number</b>
North West	19%	9
South West	15%	7
London	15%	7
East Midlands	13%	6
South East	10%	5
Yorkshire & Humberside	8%	4
North East	8%	4
West Midlands	6%	3
East Anglia	4%	2
<b>Total</b>	<b>100%</b>	<b>48</b>

<b>UK Universities represented: names</b>		
Aberystwyth	Gloucestershire	Nottingham
Bangor	Harper Adams	Open
Bath	Heriot-Watt	Oxford Brookes
Bath Spa	Hertfordshire	Portsmouth
Birmingham	Huddersfield	Queen Mary
Bradford	Imperial	Reading
Bristol	King's	Royal Holloway
Cambridge	Lancaster	Salford
Cardiff	Leeds	Sheffield
Central Lancashire	Leeds Metropolitan	Southampton
Chester	Leicester	Strathclyde
Christ Church, Canterbury	Liverpool	Sunderland
City	Liverpool John Moores	Surrey
De Montfort	London	Swansea
Derby	Manchester	UCL
Durham	Manchester Metropolitan	Ulster
East Anglia	Newcastle	Warwick
Edinburgh	Northampton	West of England
Exeter	Northumbria	

## Section 2: Knowledge and understanding of evaluation for HE STEM Outreach

<b>7. Knowledge of theories of evaluation. "In relation to theories of evaluation I think of myself as having...":</b>	<b>%</b>	<b>Number</b>
Adequate knowledge.:	42.9%	69
Limited knowledge.:	36.6%	59
Thorough knowledge.:	13.0%	21
No knowledge.:	7.5%	12
<b>Total</b>	<b>100</b>	<b>161</b>

*Single response only permitted: percentages sum to 100*

<b>8. Knowledge and understanding of the purposes of evaluation. "In relation to knowledge and understanding of the purposes of evaluation, I consider my knowledge and understanding as being...":</b>	<b>%</b>	<b>Number</b>
Adequate.:	54.7%	88
Thorough.:	25.5%	41
Limited.:	16.8%	27
Non-existent.:	3.1%	5
<b>Total</b>	<b>100</b>	<b>161</b>

*Single response only permitted: percentages sum to 100*

<b>9. Knowledge and understanding of evaluation methodologies. "I consider my knowledge and understanding of methodologies of evaluation as being...":</b>	<b>%</b>	<b>Number</b>
Adequate.:	51.6%	83
Limited.:	28.6%	46
Thorough.:	13.7%	22
Non-existent.:	6.2%	10
<b>Total</b>	<b>100</b>	<b>161</b>

*Single response only permitted: percentages sum to 100*

## Section 3: Involvement in evaluation of HE STEM Outreach

<b>10. Involvement in evaluation activities. Do you personally undertake evaluation of your own HE STEM Outreach activities?</b>	<b>%</b>	<b>Number</b>
Yes.:	69.6%	112
No, but someone else evaluates it.:	19.3%	31
There is no evaluation that I am aware of.:	11.2%	18
<b>Total</b>	<b>100</b>	<b>161</b>

*Single response only permitted: percentages sum to 100*

<b>11. Involvement in evaluation activities. Do you undertake evaluation of other people's HE STEM Outreach activities?</b>	<b>%</b>	<b>Number</b>
No.:	71.4%	115
Yes.:	28.6%	46
<b>Total</b>	<b>100</b>	<b>161</b>

*Single response only permitted: percentages sum to 100*

<b>12. Purposes of current evaluation activities. "The purposes of the evaluation of my HE STEM activities are...":</b>	<b>%</b>	<b>Number</b>
To help improve the practice of HE STEM Outreach.:	81%	131
To demonstrate the impact of HE STEM Outreach activities.:	78%	126
To secure funding.:	40%	64
To contribute to the overall knowledge base about evaluation.:	23%	37
To inform and/or demonstrate commitment to institutional Access Agreement.:	16%	25
I am unclear what the purposes are.:	3%	5
Other	12%	19
For improvement(Additionally to above)		5
For feedback		4
For research/learning(Additionally to above)		3
For the funders (Additionally to above)		2
Other/none		6
Total	n/a	407

*Multiple responses permitted: percentages are of all respondents and do not sum to 100*

<b>13. Attitude towards evaluation. "I perceive the evaluation of HE STEM activities as being...":</b>	<b>%</b>	<b>Number</b>
Essential.:	57.1%	92
Desirable.:	32.3%	52
A distraction.:	4.3%	7
An irrelevance.:	1.9%	3
An external requirement.:	4.3%	7
<b>Total</b>	<b>100</b>	<b>161</b>

*Single response only permitted: percentages sum to 100*

<b>14. Use of evaluation. I have used my evaluation in order to:</b>	<b>%</b>	<b>Number</b>
Raise the profile/awareness of my work.:	56%	90
Sustain my work.:	53%	86
Raise funding.:	37%	59
Other	28%	45
For improvement		20
For future planning		7
For funding (additional to above)		6
For feedback		5
Other (including none)		9
Total	n/a	280

*Multiple responses (or none) permitted: percentages are of all respondents and do not sum to 100*

<b>15. Support for evaluation already available. "Support on evaluation is available to me...":</b>	<b>%</b>	<b>Number</b>
From within my institution.:	39%	62
From outside my institution.:	36%	58
There is no support that I am aware of.:	29%	47
From my organisation (I do not work in an academic institution).:	11%	17
	n/a	184

*Multiple responses permitted: percentages are of all respondents and do not sum to 100*

<b>16. Receipt of training/support on evaluation Have you received training/support on evaluation?</b>	<b>%</b>	<b>Number</b>
Yes.:	51.6%	83
No.:	48.4%	78
Total	100	161

*Single response only permitted: percentages sum to 100*

<b>16.a. Receipt of training/support on evaluation. I have received training/support in the form of...:</b>	<b>%</b>	<b>Number</b>
Workshops/training events from outside my institution/organisation.:	28%	45
Workshops/training events from within my institution/organisation.:	19%	31
Online materials (e.g. downloadable guides) supplied outside my organisation/institution.:	19%	30
1 to 1 coaching/mentoring from within my organisation/institution.:	7%	12
Online materials (e.g. downloadable guides) supplied within my organisation/institution.:	7%	12
1 to 1 coaching/mentoring from outside my organisation/institution.:	6%	10
Online training (e.g. online learning modules, discussion/support groups) supplied within my institution/organisation.:	1%	2
Online training (e.g. online learning modules, discussion/support groups) supplied outside my institution/organisation.:	2%	3
Other	9%	15
From previous or concurrent academic study/courses		4
From other practitioners		4
Part of own research or general work		2
Other		3
<b>Total</b>	<b>n/a</b>	<b>160</b>

*Multiple responses (or none) permitted: percentages are of all respondents and do not sum to 100*

<b>17. Provision of training/support on evaluation Have you provided training/support on evaluation?</b>	<b>%</b>	<b>Number</b>
No.:	72.0%	116
Yes.:	28.0%	45
<b>Total</b>	<b>100</b>	<b>161</b>

*Single response only permitted: percentages sum to 100*

<b>17.a. What types of training/support have you provided? "I have provided...":</b>	<b>%</b>	<b>Number</b>
1 to 1 coaching/mentoring to others within my organisation/institution.:	16%	25
Workshops/training events to others outside my institution/organisation.:	13%	21
Workshops/training events to others within my institution/organisation.:	11%	17
1 to 1 coaching/mentoring to others outside my organisation/institution.:	8%	13
Online materials (e.g. downloadable guides) to others outside my organisation/institution.:	6%	9
Online materials (e.g. downloadable guides) to others within my organisation/institution.:	5%	8
Online training (e.g. online learning modules, discussion/support groups) to others within my institution/organisation.:	1%	2
Online training (e.g. online learning modules, discussion/support groups) to others outside my institution/organisation.:	0%	0
Other	1%	2
<b>Total</b>	<b>n/a</b>	<b>97</b>

*Multiple responses (or none) permitted: percentages are of all respondents and do not sum to 100*

<b>18. Use of evaluation materials currently available. For additional information on these types of resources, please click the 'More Info' button. "I have used the following on-line support materials on evaluation":</b>	<b>%</b>	<b>Number</b>
None of these.:	53%	85
Evaluation: Practical Guidelines (RCUK).:	27%	44
Guide to teaching evaluation (National HE STEM Programme).:	14%	23
Evaluation Resources (NCCPE).:	14%	23
Resources for Evaluating Science Engagement Activities (NCCPE).:	10%	16
Project Planning -- Evaluation Plan (JISC).:	7%	12
STEM Subject Centres Evaluation Toolkit (HEA).:	7%	12
Impact Evaluation Model (Training & Development Agency for Schools).:	4%	7
Other	12%	19
Manchester Beacon Guide		3
RAEng toolkit <sup>6</sup>		2
Visitor Studies Association		2
STEM cohesion guide		1
Other <sup>7</sup>		10
<b>Total</b>	<b>n/a</b>	<b>241</b>

*Multiple responses permitted: percentages are of all respondents and do not sum to 100*

#### **Section 4: Interest in personal development in evaluation of HE STEM Outreach**

<b>19. Interest in/willingness to participate in learning more about evaluation. "I am...":</b>	<b>%</b>	<b>Number</b>
Interested in activities or events to enhance my GENERAL understanding of and practice in evaluation.	54.7%	88
Interested in activities or events to enhance SPECIFIC aspects of my understanding of and practice in evaluation.:	23.6%	38
Not interested in receiving any further support for my understanding of or practice in evaluation.:	21.7%	35
<b>Total</b>	<b>100</b>	<b>161</b>

*Single response only permitted: percentages sum to 100*

<b>19.a. Please tell us about the specific aspects you would like to enhance.</b>	<b>%</b>	<b>Number</b>
Doing it better	4%	6
Broader range of methodologies	3%	5
Longitudinal/long term studies/use of large datasets	2%	4
Online evaluation/evaluation of online events	2%	3
Application to a specific discipline	1%	2
Other	3%	5
<b>Total</b>	<b>n/a</b>	<b>27</b>

*Multiple free text responses (or none) permitted: percentages are of all respondents and do not sum to 100*

<sup>6</sup> Probably referring to Moore (2011)

<sup>7</sup> Including one reference to Moore (2011)

<b>20. Ways of participating in learning more about evaluation. How would you prefer additional support to be provided?</b>	<b>%</b>	<b>Number</b>
Downloadable resources.	73%	118
Workshops/Training events.	66%	106
Online learning.	38%	61
Online discussion/Support groups.	23%	37
Other	4%	6
Workshops at other events (additional to above)		2
Action research groups		1
List of other evaluators		1
Mentorship		1
Video link		1
<b>Total</b>	<b>n/a</b>	<b>328</b>

*Multiple responses permitted: percentages are of all respondents and do not sum to 100*

<b>21. Preference for the subject of resources. What should resources focus on to be most helpful to you?</b>	<b>%</b>	<b>Number</b>
Practical tools for evaluation (e.g. checklists, pro-forma).	74%	119
Models of evaluation.	58%	94
Case-study examples.	57%	91
Implementing evaluation.	46%	74
Planning evaluation.	44%	71
Theories of evaluation.	32%	52
Other	1%	2
<b>Total</b>	<b>n/a</b>	<b>503</b>

*Multiple responses permitted: percentages are of all respondents and do not sum to 100*