


## Robotic Visions

This document introduces the 'Robotic Visions' project, which aims to provide a unique platform for two-way discussion and debate between young people and robotics researchers.

Written at the beginning of the project, this document combines key information from the case for support and project timeline submitted to the EPSRC Partnerships for Public Engagement scheme who awarded the project in April 2009 (EP/G06895X/1). The following presents a **Project Outline; Project Timeline; Learning from the Pilot Event; The Vision Conference Format; Audiences; Project Outputs; Project Management;** and a summary of the **Evaluation**. A number of comments received as part of the grant review process, which we would like to incorporate into the project, are also included.

### Project Outline

Robotic Visions involves five separate 'visions conferences', to be held at various geographical locations throughout the UK in association with key robotics research laboratories and experienced host venues (science centres and universities).

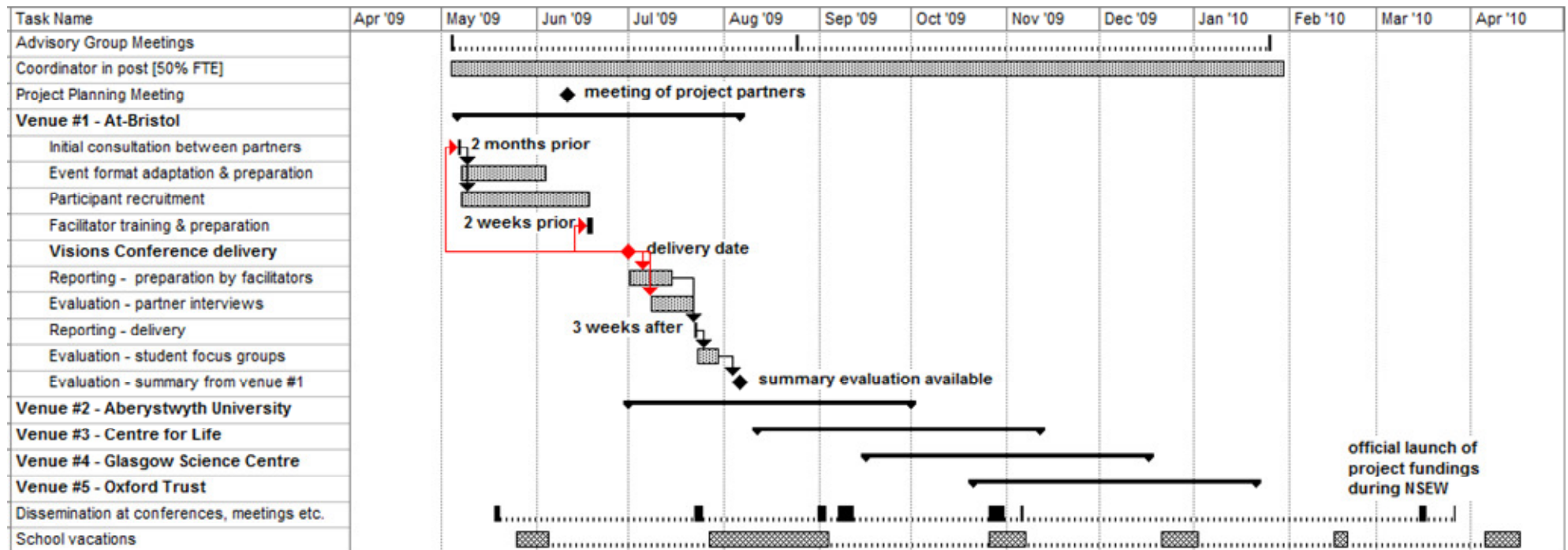
	Lead Roboticists	Venue
	Dr Barbara Webb, Edinburgh University	Glasgow Science Centre
	Prof Noel Sharkey, Sheffield University	Centre for Life, Newcastle
	Dr Mark Neal, Aberystwyth University	Aberystwyth University Centre for Widening Participation and Social Inclusion
	Prof Kerstin Dautenhahn, University of Hertfordshire Prof Alan Winfield, University of the West of England	The Oxford Trust At-Bristol

*Note that a previous Robotic Visions Conference was run in London in December 2007 and significant robotics engagement with young people is expected around Manchester in October 2009 as part of the 'Walking with Robots' network's Festival of Robotics.*

Each conference will involve:

- A lead roboticist (one co-applicant per venue)
- Additional robotics experts (2-4) from the local area
- A science centre or appropriate host organisation (venue)
- 30-40 participants aged 14-19, recruited through the venue
- Five event facilitators, recruited through the venue

## Project Timeline



### Notes:

- The project timing has been specifically designed to take into account examinations and other school and teaching commitments in order to maximise participation rates from both students and robotics researchers.
- The steps involved at each venue are identical hence the details for only one venue (#1 – At-Bristol) have been shown here.
- Within each venue's timetable, key milestones are all based around the Visions Conference event dates, for example:
  - initial consultation between all the partners involved
  - facilitator training & preparation
  - final reporting
- In order to keep the project costs as low as possible the project coordinator (Dr Claire Rocks) is only employed during the critical phases of the project. Dr Rocks will be seconded part-time from her existing role in coordinating the *Walking with Robots* network in order to take advantage of her existing skills and expertise, thereby minimising the amount of time required to be committed to this project. Additional support will of course be recruited for the *Walking with Robots* project for the duration of *Robotic Visions*.
- At-Bristol has been deliberately chosen as the initial 'pilot' venue, partly due to its close proximity to UWE and partly because of a strong existing working relationship. As demonstrated within the timeline, initial planning relating to At-Bristol's delivery will occur prior to the meeting of the project partners, and will inform that meeting.
- The project end point has been designed to allow the official launch of the project findings to coincide with National Science and Engineering Week 2010 in order to maximise media and stakeholder interest.

## Learning from the Pilot Event

Whilst *Robotic Visions* is unique in terms of its scope and intent, it builds on a pilot **Young People's Visions Conference** that was run by the applicants in partnership with the Royal Academy of Engineering in December 2007, which demonstrated that a wider consultation across the UK will be timely and relevant to both young people and robotics researchers.

Overall, the pilot was well received and clearly demonstrated the potential of the event format to deliver a high quality, sustained impact on the young people and also on the roboticists involved.

The major learning from the pilot was about the way in which information was handled post-conference. This experience has fed directly into the design for *Robotic Visions*, including:

- Policy makers will be consulted from the beginning of the project as to how the information might best be presented, and what content or focus would be of most interest, to ensure their notice. A member of the Parliamentary Office of Science and Technology as well as a representative of *Involve* (the public participation specialists who work regularly with senior people in government and business as well as community activists) have been included on the advisory group to aid this process.
- The project outcomes will be strategically linked to stakeholders from the outset, including inviting key representatives (for example local politicians, representatives of learned institutions, and local researchers / workers in the sector) to the conferences. 'Vox pops' (short video clips) will be professionally recorded from both student and researcher participants at two separate venues in order to provide powerful snapshots of participant priorities and concerns for wider dissemination.
- Longer term post-conference engagement will be facilitated through the use of online social networking tools specifically focused on the discussion, reporting and dissemination of the outcomes.
- A clear plan for the production of the report will be implemented, directly involving both student and roboticist participants, with the ultimate responsibility for producing the report held by the facilitators.

## The Vision Conference Format

Places at the conferences will be awarded by the local venues on a competitive basis and will be recognised as a prestigious opportunity for the pupils involved. Students from a range of backgrounds will attend, including different schools and subject and socio-economic backgrounds. The direction of each conference will be led by the participants themselves - both students and researchers - who will work together to identify the issues and topics that are of most concern to them. Each conference will consist of three phases:

1. **A divergent phase** - where participants are given the opportunity to explore the uses and potential of robotics, bringing their creativity and personal aspirations to the fore
2. **A convergent phase** - where key priorities and themes are identified by the participants and a list of key recommendations (considering a range of stakeholders and audiences including government, and other researchers and young people) is produced.
3. A **celebratory session** to which key stakeholders will be invited. Part of this celebration will include the formal presentation of the participants' shared vision to the local

stakeholders. This brief overview will be followed up by a short report compiled after each conference which draws out key cross-cutting themes from the discussion.

In addition, opinions gathered at all the conferences will be used to feed into an overarching policy document relating to robotics research development. These findings will be widely disseminated, for example to the policy departments of relevant government bodies and learned institutions, and made available to relevant existing networks, giving the students and roboticists a chance to have their opinions heard.

## Audiences

The project has identified two main audiences:

- **750 (minimum) peers and associates of student participants via a cascade approach.**  
As part of the application process, potential participants will be asked to outline how they plan to disseminate the findings from the conference to their peers (e.g. their schools). A variety of methods could be used, ranging from the preparation of summary slides to be shown on the school information screens to presentations to Schools Assemblies or Governor's meetings. The predicted audience sizes have been estimated assuming that each of the student participants will disseminate their findings to a further ~25 people.
- **6-10 (minimum) stakeholders from the wider robotics research community & policy makers via a celebratory session to be held at the end of the conference.**

## Project Outputs

In addition to the audiences listed above the project hopes to reach a wider audience through the dissemination of various outputs:

- Each roboticist involved in the conference is expected to **engage at least two other stakeholders with the project outcomes**, for example through appropriate seminars and meetings.
- An extensive effort will be made to disseminate the project findings through **existing networks and events**.
- The overall project findings will be officially announced during National Science and Engineering week 2010 in order to maximise media and stakeholder interest.
- All **materials will be made publicly available** (in particular the extensive Facilitators' packs) and the successes relating to the format highlighted within practitioner networks.
- In addition, **wider publications** such as the new EPSRC *Pioneer* magazine and peer reviewed journals will be targeted in order to ensure wider knowledge of the project methodology and findings.

## Project Management

The project team has been carefully considered to incorporate as wide a perspective as possible. The robotics expertise covers a broad range of subjects, ranging from robots used in extreme environments (such as autonomous sailing boats), to robots mimicking nature (bio-mimetics).

In order to maintain clarity, the following **distributions of responsibility** have been agreed:

The **Principle Investigator** - Dr Karen Bultitude will oversee the project from a strategic perspective and will be directly involved in every event. Dr Bultitude has been identified by the project team as the lead not only due to her extensive experience of running similar programmes, and excellent existing connections with the roboticists involved, but also in recognition of the importance of an impartial director when the project involves the research team members participating in dialogue. This approach will ensure that the issues and concerns of the student participants are held in balance with those of the robotics researchers. Specifically, Dr Bultitude will:

- Provide the overall strategic direction of the project
- Take the lead in the dissemination strategy
- Manage the various complex partnerships involved, including the consultative visits at each venue
- Devise and deliver the training update for the Facilitators at each venue
- Preside over details related to the advisory group and project planning meetings
- Provide oversight for the evaluation and online strategies
- Attend each Visions Conference in an objective capacity, to ensure smooth operation

**Robotics Co-Investigators** - Dr Barbara Webb, Prof Noel Sharkey, Dr Mark Neal, Prof Kerstin Dautenhahn, and Prof Alan Winfield will contribute:

- Expert robotics input into the planning stages for the venue in question
- Overview session on the 'State of Robotics' at the start of the conference
- Contribute to an expert Q & A session
- Be present throughout the conference (to witness student discussions and contribute when asked but not lead or direct the sessions)
- Participate in the formal presentation of findings to local stakeholders at the end of the conference
- Contribute the foreword to the final report for their venue
- Disseminate the findings at key robotics research and policy events

The **host venues** will contribute:

- Space and facilities to host the conference as well as audience recruitment
- Up to 6 presenters to act as Facilitators during the conference itself
- Adaptation of the event format and logistics to best suit the venue, students and personnel involved
- Summary report (compiled by the Facilitators) outlining the key findings of the conference

**Project Coordinator** - Dr Claire Rocks will provide day-to-day project management, including:

- Work closely with the venues and Co-Investigators to adapt the events to each local setting
- Coordinate the production and distribution of appropriate supporting materials
- Support the PI in the initial consultation and delivering the facilitation training at each venue
- Work closely with the facilitators during the reporting process to ensure consistency across the five venues in identifying key cross-cutting themes

- Liase with local press offices to ensure maximum exposure
- Lead in evaluating the impact on all participants and preparing the summary policy document

The **advisory group** is made up of key members with expertise in aspects of both delivery and dissemination relevant to this project. The advisory group will meet at key stages, namely at the start, after the first initial delivery stage and after all five conferences have been held.

- Catherine Aldridge - freelance science communication specialist, previously Director of Learning and Programmes, At-Bristol
- Savita Custead – Director of the Bristol Natural History Consortium and key person responsible for developing Doing Dialogue, a dialogue and discussion programme based within UK science centres
- Alice Casey – Project manager at Involve, the public participation specialists
- Dr Martin Griffiths - Adviser, Physical Sciences & IT, Parliamentary Office of Science and Technology
- Dr Lesley Paterson - Head of Public Engagement at the Royal Academy of Engineering

## Evaluation

The event format and process was initially evaluated during the pilot by an external evaluator<sup>1</sup>, resulting in significant learning which has fed into this programme. Further development and exploration of the event format and outcomes are critical to the success of this project, especially since individual stages are able to build upon the experience of previous events. A thorough evaluation will therefore be conducted internally by Dr Claire Rocks and will involve a range of mechanisms, including:

### At the Event:

- All participants will be given a written entry questionnaire at the start of the conference and an exit questionnaire at the end.
- A democracy wall<sup>2</sup> will be available throughout the conference so that participants can informally post their ideas and opinions throughout the conference under five headings: (i) I discovered that...; (ii) I noticed that...; (iii) I felt that...; (iv) I learnt that...; and (v) I would like to suggest...
- The evaluator will observe sessions throughout the conference using a semi-structured approach
- Interviews will take place with the facilitators immediately after the conference

### 3 weeks post event:

- Interviews will take place with all of the roboticists involved
- 2-3 focus groups will take place with students at 2-3 participating schools.

### 6-8 weeks post event:

- An e-survey will be sent to the teachers and roboticists. This survey is interested in assessing whether the report has been disseminated or whether conference participants have shared their experience.

---

<sup>1</sup><http://www.walkingwithrobots.org/resources/downloads/Visions%20conference%20evaluation%20report.pdf>

<sup>2</sup>Rambaldi, G. (2008). Democracy Walls. Participatory Learning and Action 58, June 2008 [Online] Available at: <http://www.iapad.org/publications/PLA58-TipsforTrainers.pdf> [Accessed 10 May 2009]

## Selected Reviewers' Comments

- **Audiences:**

- Reviewer S9IGPH: *"I think this is where teachers could be key to the success of this part of the project. They will need to support the continued interest and dissemination after the events within school etc, so it would be useful to have teachers built in to the project plan as another target audience."*
- Reviewer S9IGPH: *"Teachers should also be considered in the publicity plan (for the reasons I have mentioned before), so it might also be useful to see if working with the ASE could help support this kind of activity."*

- **Evaluation:**

- Reviewer BAXKE1: *"The evaluation questions will need to explore whether the project criteria have been met e.g. whether the students felt they were empowered to explore their ideas and whether they felt it was genuine dialogue. However, I would be surprised if the criteria given were not met if the conferences proceed as planned. It would also be interesting to see how the conferences affect attitudes to science and technology and future aspirations; I would hope that the evaluation will look at this too."*
- Reviewer S9IGPH: *"I would also suggest working with teachers to gain their feedback about the events too, and help support post event evaluation. Again, there is some learning about online feedback from teachers and students post activities that can be found through the Science Learning Centre Network and 'After School Science and Engineering Clubs' project, so it may be worth making contact with them about this when planning the evaluation timetable (but the project team may already be in contact with them)."*

- **Use of online technologies:**

- Reviewer S9IGPH: *"Any learning from the use of new technologies in the evaluation of this project will be very valuable. I am sure that many within the public engagement community will be interested to learn about the project findings!"*
- Reviewer BAXKE1: *"I would have liked to read more about how they will be using Facebook to engage with others and continue the engagement, however, it may be that the students who take part are actually the best people to advise on this."*
- Reviewer S9IGPH: *"I would definitely suggest that the young people are very much involved in the choice of format so that there is proper buy-in to it as a feedback mechanism (e.g. through focus group feedback). All too often this can come across as us trying too hard and just a bit naff"*