Arts & Humanities Research Council

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Research Grants (e-Science)
PROPOSAL

Document Status: With Council
AHRC Reference: AH/E006361/1

2nd November 2006
Commissioning Panel

Organisation where the Grant would be held

Organisation	University of Bedfordshire	Research Organisation Reference:	ahrc_esci_rcp
Division or Department	Faculty of Educ and Contemporary Studies		

Project Title [up to 150 chars]

Relocating Choreographic Process: The impact of Grid technologies and collaborative memory on the documentation of practice-led research in dance

Start Date and Duration

a. Proposed start date | 02 September 2007 | b. Duration of the grant (months) | 24

Applicants

Role	Name	Organisation	Division or Department	How many hours a week will the investigator work on the project?
Principal Investigator	Ms Helen Bailey	University of Bedfordshire	Creative Arts and Technologies	17.95
Co-Investigator	Dr Simon Buckingham Shum	Open University	Knowledge Media Institute	2
Co-Investigator	Dr Sita Popat	University of Leeds	Sch of Performance & Cultural Industries	14.95
Co-Investigator	Mr Michael Daw	The University of Manchester	Manchester Computing	2

Objectives

The project objectives cover five broad areas, they are:

1. Explore new dimensions for compositional/processual approaches to choreography through use of the Access Grid and associated tools:

- Generate new compositional/processual approaches and methodologies for practice-led research in dance

- Exploit the Access Grid (AG) as a communications medium for choreographic research processes, facilitating and interrogating distributed, collaborative approaches

- Explore the mediating function of AG and e-Science documentation tools in new choreographic understandings of space, time and embodiment

- Interrogate notions of interactivity in the distributed context, through the use of tracking systems incorporated in the AG environment in order to manipulate video material in real time

- Consider the theoretical and practical implications associated with engaging in practice-led research in a multi-perspective creative environment, in terms of authorship and subjective, relative positions across and between multiple locations

- Develop new discursive/dialogic creative working practices appropriate to this unique environment

2. Develop new and meaningful documentation methodologies for capturing and modelling practice-led research:

- Develop new software tools to support, enhance and document the creative process by capturing and making visible the discursive/dialogic practices inherent in choreographic research

- Repurpose existing Grid-based hypermedia and semantic annotation tools to support, enhance and document creative processes in order to expose and make tangible the improvisational, embodied investigation of the practice-led dance researcher

- Provide user interfaces and software that enable the possibility of pre-linguistic visual annotations, to create multi-layered, non-linear representations of process

- Create digital memory traces of ephemeral moments that can be archived, interrogated and reused in flexible ways

3. Identify how choreographic knowledge and sensibility can help to shape e-Science practice to make applications more usable in the field of practice-led arts research, and other domains beyond computing:

- Redefine AG as a performance environment, considering both interface design and its physical place/space

- Extend current e-Science approaches concerning the socio-technical dimensions to the design of practical tools

- Explore the impact of embodied experiential knowledge on existing understandings and practices for 'experience design' within Human-Computer Interaction research

- Explore how choreography's compositional, embodied understandings of spatio-temporal structure can translate into user interfaces for mapping spatio-temporal distributions of ideas in e-Science tools

4. Expose the iterative cycles of experimentation and incremental development of knowledge, driven by the dialogic processes between dance and e-Science in the collaborative research process:

- Develop transdisciplinary understanding of the making and marking of spaces: conceptual, narrative, virtual, poetic and embodied

- Explore the generative capacity of systems and structures developed between the disciplines to create new knowledge and understandings

- Develop transdisciplinary discourses on concepts for process capture held in common by choreography and e-Science, such as memory, narrative and trace

5. Engage with the wider communities of practice through dissemination of findings and knowledge transfer:

- Produce enhanced software tools for practice-led researchers in the arts

- Produce a range of epistemological outcomes via publications and presentations

- Promote direct engagement with stakeholders through an embedded workshop programme

- Engage with the broader Arts & Humanities and e-Science communities through relationships with a range of academic and infrastructural organisations/networks.

Summary

Describe the proposed research in simple terms in a way that could be publicised to a general audience [up to 4000 chars]

The Relocating Choreographic Process project provides radical new opportunities for exploring the ways in which dance, the most ephemeral of art forms, might be documented. In particular the project will take advantage of cutting edge developments in e-Science to explore new opportunities for documenting the creative process in dance making. This will provide access to activities that have remained previously inaccessible even to the practice-led researchers themselves. The project will create digital memory traces of ephemeral moments that can be archived, interrogated and reused in a range of different contexts.

Relocating Choreographic Process (RCP) is a collaborative project exploring the interplay between dance/technology and e-Science, bringing together a unique combination of researchers and software developers from the Universities of Bedfordshire, Leeds, Manchester, and the Open University. RCP focuses on the novel ways in which practice-led dance research might be documented and enhanced by videoconferencing, recording and annotation tools. In turn, RCP will investigate how choreography can improve the user experience of e-Science tools in domains other than computing. RCP will also explore transdisciplinary interests in issues such as collective sensemaking, process capture, collaborative memory, and non-linear narrative.

The project will deliver an integrated suite of software tools to enable choreographers to visually annotate video of rehearsals and performances, to plan pieces that exploit the new possibilities of networked virtual spaces over the internet, and to weave material from recordings into live performances. It seeks to explore a new form of collaborative choreography. How do choreographers and dancers negotiate the paradoxical position presented by the distributed creative environment of being separate, in different physical locations, yet together in a virtual space?

The project will conduct an extended dialogue with the dance and performance research community through a series of workshops and publications. Attention will focus on the new ways of working that a hybrid physical/virtual space both demands and enables, on advancing the artistic and technical design of the venues that are connected by video over the internet, and on commissioning new dance pieces in order to test both the new software, and the expressive and creative possibilities of this exciting new medium for performance art.

Outputs

The main outputs of the research

Journal article (refereed)
Conference paper
Software
Website
Performance, film or recording
Interactive website
If Other,

Ethical Information

Are there ethical implications arising from the proposed research ?	No

Provide details of what they are and how they would be addressed [up to 1000 characters]

Does the institution have a policy on good conduct in research?	Yes

Details of where the policy can be accessed
Professor Howard Hall

Summary of Resources Required for Project

Financial resources

Summary fund heading	Fund heading	Full economic Cost	AHRC contribution	% AHRC contribution
Directly Incurred	Staff	83646.00	66916.80	80
	Travel & Subsistence	6837.00	5469.60	80
	Equipment	0.00	0.00	80
	Other Costs	35288.00	28230.40	80
	Sub-total	**125771.00**	**100616.80**	
Directly Allocated	Investigators	99888.80	79911.04	80
	Estates Costs	35494.00	28395.20	80
	Other Directly Allocated	0.00	0.00	80
	Sub-total	**135382.80**	**108306.24**	
Indirect Costs	Indirect Costs	138832.00	111065.60	80
	Total	**399985.80**	**319988.64**	

Summary of staff effort requested

	Months
Investigator	23.50
Researcher	24
Technician	2
Other	0
Visiting Researcher	0
Student	0
Total	49.5

Estimated cost of project students	£0.00
Total project cost including students	£399985.80

Staff

Directly Incurred Posts

Role	Name / Post Identifier	JNCHES	Basic Starting Salary / Starting Spine Point	Grade / Scale	Increment Date	Start Date	EFFORT ON PROJECT Period on Project (months)	% of Full Time	London Allowance (£)	Super-annuation and NI (£)	Total Other Allowances (over period of appointment) (£)	Total cost on grant (£)
Researcher	Dr AGD Rowley	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓
Researcher	Ms MS Bachler	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓
Technician	Mrs A Le Blanc	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓	▓
											Total	▓

Costs by Project Year

	Year 1	Year 2
Directly Incurred Posts	35437	48209

Directly Allocated Posts

Role	Name	Post will outlast project (Y/N)	Contracted working week as a % of full time work	Total number of hours to be charged to the grant over the duration of the grant	Average number of hours per week charged to the grant	Rate of Salary pool/banding	Cost estimate
Principal Investigator	Ms Helen Bailey	▓		▓	▓	▓	▓
Co-Investigator	Dr Simon Buckingham Shum	▓	▓	▓	▓	▓	▓
Co-Investigator	Dr Sita Popat	▓	▓	▓	▓	▓	▓
Co-Investigator	Mr Michael Daw	▓	▓	▓			▓
						Total	▓

Costs by Project Year

	Year 1	Year 2
Directly Allocated Posts	51654	48236

Travel and Subsistence

Destination and purpose		Yr 1	Yr 2	Total £
Within UK	Sandpit Meetings - travel attendance	560	420	980
Within UK	Research Intensives and Stakeholder Workshops travel attendance	1400	1300	2700
Within UK	Conferences/Dissemination - Arts and e-Science	1340	1817	3157
	Total £	3300	3537	6837

Other Directly Incurred Costs

Description	Yr 1	Yr 2	Total £
Performance Production materials - Set materials, lighting, sound etc.	1196	1844	3040
HardDisk performance storage 3TB + backup to be brought progressively	375	475	850
Laptops and Cameras to be pooled and loaned for intensives.	1766	304	2070
Five dance practitioners for 16 weeks at equity rates @312pppw + VAT	11731	17597	29328
Total £	15068	20220	35288

Estates Costs

	Year 1	Year 2	Total
Estates Costs	20818	14676	35494

Indirect Costs

	Year 1	Year 2	Total
Indirect Costs	64696	74136	138832

Technical Appendix

Please complete this appendix if your application proposes to create an electronic resource.

1. Project Management of technical aspects

a. Management and reporting structure:

The project will be managed and administrated through a Project Management Group (PMG). The project team has much experience of project management of multi-disciplinary research projects on this scale. The PMG will comprise the project Principal Investigator (Helen Bailey) and Co-Investigators (Simon Buckingham-Shum, Michael Daw and Sita Popat). The PMG, will meet monthly (by Access Grid) to discuss progress against milestones and remedial action if required. The PMG will submit a six-monthly report to the AHRC that will outline achievements and progress of the project, as well as actions taken to mitigate unforeseen problems. The PMG will report to the Project Steering Group, which will comprise members of the project team, University of Bedfordshire representatives, project stakeholders, specialists in the subject disciplines and key contributors to the initial AHRC-funded e-Science workshops, who will be invited to oversee the project and ensure continuity of expertise.

Each work package (WP) has a leader who will report to the PMG and who is responsible for the day-to-day management/organisation of the arts researchers, performers, and e-Scientists, and the timely completion of tasks in their WP.

All members of the project team are expected to work together in a productive and creative way, including providing input into areas that may not be within their core expertise. As well as the scheduled development workshops (to bring together e-Scientists and artists to ensure that software is usable and appropriate to this domain), we will also hold three "project sandpit" days for the whole project team to get together in an informal setting to improve working relationships and review strategic aspects of the project.

b. Project Timetable:

See the 'Project Timetable' attachment for further information and pictorial representation of this timetable.

WP = Work Package

WP1 Choreographic Research (lead: Helen Bailey)
 WP1.1 Preparation, evaluation, documentation / Sep 07-Aug 09
 WP1.2 Research Intensives / Jan 08, Apr 08, Jul 08, Mar 09-Apr 09, Jun 09

WP2 Development Workshops (lead: Sita Popat)
 WP2.1 Workshops for e-scientists/arts researchers/performers - Jan 08, Apr 08, Jul 08, Jan 09, Jun 09

WP3 Memetic Development (lead: Michael Daw)
 WP3.1 AG video enhancements / Sep 07-Oct 07
 WP3.2 Develop ScreenStreamer / Oct 07-Jan 08
 WP3.3 Develop UI to Support Performance / Apr 08-May 08
 WP3.4 Develop editing functionality to convert recordings / Jan 08-Apr 08
 WP3.5 Integrate SRB / Jun 08-Aug 08

WP4 Compendium Development (lead: Simon Buckingham Shum)
 WP4.1 Develop portable video mapping studio / Sep 08-Dec 08
 WP4.2 Develop UI to Support Performance / Feb 09-Mar 09
 WP4.3 Develop choreographic planning tool / Jan 09-Apr 09
 WP4.4 Develop support for input of recordings into performances / May 09-Aug 09

WP5 Software Tools Support (lead: Michael Daw) / Sep 07-Aug 09

WP6 Dissemination (lead: Helen Bailey) / Jan 08-Aug 09

c. Project deliverables:

D = Software Deliverables. Full descriptions of all deliverables is available in the 'Software Deliverables' attachment.

D1: Enhancements to Access Grid Video. Ensure that Mbone tool VIC supports arbitrary video resizing, full screen video, chromakey-like functionality and other similar enhancements.

D2: Enhanced ScreenStreamer Software. Improved performance of desktop streaming/recording software by integration of more efficient video codecs, use of new platforms & other enhancements.

D3: Choreographic Planning Tool. Cognitive support for planning dance pieces in virtual spaces.

D4: Portable Video Mapping Studio. Video annotation independent of the Access Grid: import movies in standard digital video formats; annotate in real time or post-hoc; upload to a Memetic server.

D5: User Interface to Support the Performance Process. User interfaces to capture appropriate session metadata and rich, multi-level annotations appropriate to the performance art domain.

D6: Support for Memory Input into Performances. Allow performances to feature rehearsal & past performance records.

D7: Memetic Support for Common Media Formats. Editing functionality for users to convert Memetic recordings to a common media format, e.g. AVI, QuickTime.

D8: Interface to Large Data Stores (SRB). Interfaces for Memetic to use Storage Resource Broker on the National Grid Service.

d. Monitoring process:

Software deliverables will be monitored through a series of Quality Assurance procedures. These will include manual code reviews to ensure adherence to good coding practice and standards as well as appropriate levels of functional testing. Responsibility for ensuring quality lies with the work package leaders and project manager. Progress will be monitored by work package leaders, the project manager, and at management team meetings.

2. Data Development Methods

a. Content selection:

There are three non-technical deliverables: navigable on-line recordings of performance events, an on-line project documentary created from Memetic recordings using editing software developed by the project, and a non-linear on-line documented record of the process and performance. Responsibility for creating, organising, delivering and documenting the content for these deliverables lies with the dance researchers and performers and is closely linked with the project's research questions. It is the subject of the work package Choreographic Research.

The software development methodology is based on a hybrid of Participatory Design and Rapid Application Development, i.e. there is a focus on users as the centre of an iterative development process, where requirements and feedback continually steer the direction of functionality and user interfaces. The application of this methodology is in the sandpit days, development workshops and in establishing a dedicated work package for support.

b. Data/file formats:

Much of the content delivered by this project will be audio-visual data and associated semantic annotation. Audio-visual streams created through the Access Grid and recorded by Memetic are in Remote Transport Protocol (RTP) format. Memetic also makes use of Resource Description Framework (RDF) or "triplestores" for annotating and tagging these streams. Part of the project output will be to develop software to allow the audio-visual streams to be edited and converted to more common media formats to allow performances and documentation to be played using common media players, such as Windows Media Player and QuickTime. To summarise, the data/file formats used by the project will be RTP, RDF, AVI and other common media formats.

c. Documenting the resource:

The research questions in this project lead to development of the Memetic and Compendium software tools to address the problems of how to annotate and construct metadata for performance in a distributed (and non-distributed) Access Grid context. Therefore, much of the resource created by the project will be documentation itself. The project will develop Memetic and Compendium to better support researchers in the documentation process and will use these tools to document work within the project as an example of how those in related fields may benefit from the tools. Additionally, the project will create full documentation relating to using and administering the software deliverables.

d. Advice sought on planning your proposed project:

We have sought advice in relation to issues within this Technical Appendix from Stuart Dunn of the Arts & Humanities e-Science Support Centre and with Alistair Dunning of the Arts & Humanities Data Service. These conversations have yielded a very positive outcome in terms of how we may present outputs and non-linear data that are highly novel to this community.

e. Consultation with projects using similar methods:

Not applicable.

3. Infrastructural Support

a. Hardware, software and relevant technical expertise available:

The project will make extensive use of Access Grid, Memetic, video and data Grid technologies. Use of AG nodes for performances and project team meetings has been agreed to ensure an appropriate level of local support. Additional support will be provided by the University of Manchester, home of the Access Grid Support Centre. Responsibility for software development of Memetic and Compendium will reside with the same team that originally developed the software. Hardware for the Memetic server is available for use by this project. A work package for software support has been specifically created in order to support performers in their use of these tools. Support for the integration of data Grid technologies will be provided by the National Grid Service, a key hub of which is in the same department in Manchester as the Memetic team, which has specific expertise in Storage Resource Brokers.

The project will provide suitable laptops for the Portable Video Mapping Studio application.

b. Additional hardware, software and relevant technical expertise, support and training that is likely to be required and how it will be acquired:

No additional technical expertise is likely to be required.

c. Describe the backup procedures that your project will use to safeguard your electronic resource during its development:

A project deliverable is to integrate the use of a data Grid for the storage of media generated. SRB replicates data across different physical storage devices, thereby providing a safeguard for data; recordings made using the Memetic server will automatically be stored using SRB.

Users of the Portable Video Mapping Studio application will backup local data files from video annotation sessions as compact text files (e.g. SQL and XML) that can be easily duplicated. We aim to provide external portable hard drives so that users can back up large video files locally. Users will also be encouraged to make backups by uploading to the SRB data store on a regular basis.

The project website will be hosted on the University of Manchester's institutional web farm and arrangement will be made to backup content automatically and regularly, using standard existing procedures and facilities provided by Manchester's IT Services department that includes multiple backup copies held on and off-site

4. Data preservation and sustainability

a. Please detail advice sought on the preservation of the electronic resource(s)

We have sought advice via telephone and e-mail from the AHDS/AHESSC on preservation of our electronic outputs through contact with Stuart Dunn and Alistair Dunning.

b. Please indicate what plans you have to preserve the data and make it available with the AHDS and/or through some alternative mechanism:

Although the quantity of data produced by the documentation is likely to be large (probably several TB's), the outputs are a small subset of this data. We aim to create two types of resource deliverables that will be appropriate for storage and presentation by the AHDS. One type will be in a common media format (e.g. AVI) and the other will be in Memetic format, consisting of RTP and RDF data. To present the latter form of data will require the installation of a Memetic server by the AHDS and working closely with AHDS staff in order that such novel, non-linear recordings and documentation are presented in an effective manner. Our conversations with Alastair Dunning of the AHDS reveal that they "would be very interested in installing the software and taking the full collection of data on board" (e-mail correspondence from Alastair Dunning to Michael Daw, 26 Oct 2006).

c. Please indicate what plans you have to ensure that the electronic output will become a sustainable resource

This project regards sustainability as a priority if arts practitioners and others are to benefit from the software tools we develop to assist the documentation process. In order to achieve this, we will submit robust software releases to the Open Middleware Infrastructure Institute (OMII) project repository so that the source becomes managed and available beyond the project's lifetime. Note that Manchester has a role as one of the key hubs of the OMII, and also as host for the Access Grid Support Centre, which may offer further avenues for sustainability.

5. Access

a. Please indicate how you will make the resource accessible:

As stated above, we have begun discussions with the AHDS regarding making available our project outputs. In addition to this, we will also present our outputs through a project website. e-Scientists within the project have had much experience of creating professional-looking websites with minimal effort (e.g. see www.agsc.ja.net and www.memetic-vre.net, created by Andrew Rowley and Simon Buckingham Shum) and we anticipate that this activity will be subsumed within the more general development work. The resources will be publicly available and we aim to achieve the widest possible dissemination for these enhancements to the documentation process, which, we anticipate, will be popular and useful among our target community of practice-led choreography researchers.

b. Are there any obstacles to offering for deposit with the AHDS data resources you propose to create with this project?   N

c. If you cannot deposit with AHDS, have you agreed a waiver of deposit?   N

6. Copyright and intellectual property issues

Please demonstrate that you have sought advice on and addressed all copyright and rights management issues that apply to the resource:

Advice concerning copyright and rights management issues have been discussed with the appropiate personnel at University of Bedfordshire and the following statement has been given confirming the University's position on the resources:

All documents, learning materials, software etc. produced by each party will be deemed to belong to that party. The parties will respect each other's IPR and will use best endeavours to preserve the others' rights.

Where documents, learning materials, software etc. are produced jointly then the IPR will be shared and neither party may copy, use, lend or assign any rights to those materials/documents without the other's consent (such consent not to be unreasonably withheld).

Classification of Proposal

(i) Subject Classification

Subject Group	Subject	Practice-led	Time period	Place
Dance Studies	Choreography	Y	Contemporary	

(ii) Keywords

Choreography	Access Grid
Process	Semantic Annotation
Documentation	Collaborative Memory

OTHER INFORMATION

Nominated Reviewer

1	Name	Organisation	Division or Department	Email Address
Dr Sophia Lycouris		Nottingham Trent University	Sch of Art and Design	sophia.lycouris@ntu.ac.uk
Area of Expertise		Dr Sophia Lycouris is an expert in dance and interdisciplinary practice-led research. In particular choreographic and technological interfaces.		
Relationship with Reviewer		Professional peer.		
Reason for Reviewer		Dr Lycouris has produced substantial practice-led and other research material in the area of dance and technology. She has a solid understanding of and experience in art/science collaborative research.		