

## 1. Project Title

“Betweening - teaching and learning between the disciplines: Music Technology”

## 2. Contact Details

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## 3. Introductory overview of proposed project (500 words maximum)

”Betweening” will be an investigation into the existing educational frameworks for teaching and learning between the disciplines in higher education in Britain, using music technology related degree courses as a specific example for this case study.

The project’s aim is to investigate existing models in higher education institutions which run degree courses related to the interdisciplinary field of music technology, concentrating on those institutions which have been able to implement a degree course with genuine contributions from more than one department. The gathering of this information will result in the availability of data for representing the educational landscape of music technology in Britain and will provide an oversight of the different models used in different higher education institutions.

Within this project, information acquisition will be the main focus. An initial comparison of different degree models is planned, based on the collected information. But the availability of the full scope of this information will provide data for future investigations into education “between the disciplines”, i.e. for the first time it will provide quantitative and qualitative data to

- compare different approaches,
- raise an awareness of different existing models for policy and strategy planning,
- point towards common models that define a norm or flag up exceptions or
- provide examples of excellence.

Specifically the question is asked regarding the characteristic differences between degree courses which are located wholly in one department and degree courses which have contributions from more than one department. It will investigate:

- models to cope with interdisciplinary, interdepartmental and interfaculty activities related to teaching,
- financial frameworks to enable cross disciplinary teaching, administration and research,
- existing university incentives or support structures to facilitate interdisciplinary education,
- specific policy developments of universities on a management level to support interdisciplinary teaching, and
- how staff involved in interdisciplinary education are supported in their interdisciplinary activities and academic career developments.

#### 4. Aims and Objectives

The project's aim is to investigate and collate information about existing models for running degree courses related to the interdisciplinary field of music technology in higher education institutions in Britain. The gathering of this information will result in the provision of data for representing the educational landscape of music technology in Britain and will provide an oversight of the different models used in different higher education institutions.

#### 5. Outline of the theoretical or conceptual framework of the project,

The theoretical or conceptual framework is based on the fact that to integrate an interdisciplinary field, such as Music Technology, into an academic discipline-segregated structure, such as that existing in our Universities, provides, in many ways, more challenges than opportunities: in teaching as well as administration and research. An initial study with three subsequent publications outlined these challenges for the discipline of Music Technology<sup>1</sup>.

The discipline of Music Technology, if it indeed a "single" discipline, has already acquired a relatively long history. Seeing our students in HE institutions as a part of this history shows how much we, as teachers and learning facilitators, still need to learn in order to teach this new academic discipline within our own institutions.

Our students could be considered the “fourth generation” of music technologists. Oversimplified, the first generation of Music Technologists could be called the "Experimenters" of the 50s and 60s, where for the first time a critical mass of technologists and musicians looked at music and technology and tried to develop their own methods of combining aspects of previously different disciplines into one.

Broadly speaking, the second generation of the 70's and 80's built on the basis of the first generation, and with a fast developing commercialisation as well as academic endeavour in this area, the speed with which music technology was developed, produced and utilised in works of art accelerated. Centres were created and provided a wide variety of activities within this discipline. The third generation of the 90s and 00s was able to position the first lecturers of music technology into academic institutions. Music technology had slowly become an academically viable discipline of education and research. For the first time a critical mass of individuals existed, who had studied more than one discipline and who had a background in more than one field, to push this area forward as teachers, lecturers and researchers. The fourth generation can be seen to be our current student body: students of interdisciplinary music technology degrees. This 4th generation can be seen as the first body of students who are studying music technology as one discipline or as one degree.

We have finally come to a stage in history where students can study “Music Technology” as a degree course, but many institutions seem to still implement this degree course either as a component based degree course made up of two distinct and separate disciplines, or as a degree course based in one discipline only with additional course modules contributing to the interdisciplinary aspects of it. Although the degree curricula around music technology are of a multidisciplinary nature, they are still given as if they fit seamlessly into our traditional, mono-discipline-based academic structure.

Sometimes we, the lecturers, course developers and degree managers, forget that these degrees do not have a long standing tradition on which practices can be based, and that we are ourselves are still in the process of learning how to best facilitate the provision of these new degrees within existing, sometimes rather inflexible university structures. The challenge exists concerning how best to integrate an interdisciplinary field into a disciplinary framework.

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<sup>1</sup> See publications below.

This interdisciplinary challenge of “betweening” exists on all levels of academic endeavour: from teaching and learning to administration and research.

Similarities to this historical development can be seen in other degree courses, which have developed from a interdisciplinary nature into one accepted discipline: computing science is one example, or more recently, the bio-life sciences are in progress of becoming its own discipline. It should be worthwhile to ask the question of whether a complex subject area, such as music technology, is slowly developing similarly into one discipline, or if the student body and the graduate market calls for more support to strengthen the interdisciplinary aspects with more flexible academic structures that support genuine interdisciplinarity. Although this study will not be able to authoritatively answer this question for all time and all situations, it will provide for the first time the information to enable to compare qualitatively and quantitatively the different models existing in our current higher education system, and will be able to derive out of this examples of excellence which can function as guidelines for policy makers and higher education management.

Past articles published by the applicant around this area are:

- Carola Boehm, Music Technology in Higher Education, in: The Idea of Education, ed. by Tom Claes Inter-Disciplinary Press, Vol. 12. 2005. ISBN1-904710-11-5.
- Carola Boehm, Music Technology: Opportunities and Challenges, In: Proceedings of the International Computer Music Conference, ICMA, ICMC 2002, Sweden. ISBN 91-89262-04-2
- Carola Boehm. Between Technology and Creativity, Challenges and Opportunities for Music Technology in Higher Education. in: CIRCUS 2001 - New Synergies in Digital Creativity. Proceedings of the Conference for Content Integrated Research in Creative User Systems.(ed. by Carola Boehm, David Garcia and Hubertien Schuter). University of Glasgow 2001. ISBN 0 8 526 1746 1. p.55-72

Full list of publications appear in the Appendix.

## 6. Outline of the methodology

Several levels of activities are envisaged:

- as much information as possible will be taken from publicly available sources on degree courses such as UG and PG prospects; RAE and TQA information; external examiners' reports where available.
- a questionnaire will be developed which will allow similar questions to be asked across the whole diversity of music technology related degrees
- visits to the individual institutions with scheduled interviews with key staff will be used to provide more detailed and individualised information
- the collation of this data will allow an educational map of music technology to be written
- The report with the collation of this data will be sent to all participating institutions and feedback, corrections and clarifications incorporated
- The final report will be sent to all institutions, and disseminated through conferences and published papers

## 7. Desired Outcomes

One of the main outcomes will be a report which maps the British landscape of music technology in higher education. The information provided by this report can strengthen the process to make the community around this subject area more aware of the different approaches in the study of music technology and to mark common characteristics as well as specific differences. Although this can be used for a qualitative comparison by individual

institutions, the comparison itself is not part of this project, rather the neutral gathering of existing structures in educational frameworks.

### **8. Future work**

It is planned that during the timescale of this project additional funding will be sought for further work based on its results, such as

- the facilitation of interdisciplinary subjects, such as music technology, on a European and/or international level,
- comparison of the models for support of general interdisciplinary collaboration between higher education and the industry
- historical investigation into the “mono-disciplining” of currently established classical disciplines, which have started out from an interdisciplinary level, such as bio-life sciences and the computer sciences

## 9. Applicants should show what other sources of funding they have sought, and with what success

### 9.1. Successful Applications

	Project Title	Names of all principal investigators	Total Amount	U.Glasgow share	Dates
Institutional / National Funding Hannover (DE) / Den Haag (NL)	MusicWeb Den Haag - Music Education using wide area networks	Karst de Jong (NL), Carola Boehm	£25,000.00	n/a	1996
As above	MusicWeb Hannover - Music Education using wide area networks	Prof. Chr. Hempel (DE), Carola Boehm	£20,000.00	n/a	1998
JISC	Mutated1 - Music Tagging Type Definition	Carola Boehm	£9,000.00	£9,000.00	1998 - 1999
John Robertson Bequest	MPEG7 - standards development	Carola Boehm	£1,500.00	£1,500.00	1999
Royal Society for Engineers	Travel Grant RSE	Carola Boehm, Don MacLellan	£600.00	£600.00	2000
Industry	Industrial Consultancy, Artism Ltd - a web portal for the creative industry	Carola Boehm	£27,000.00	£27,000.00	2000
JISC/UCISA	Notation Evaluation – Direct software evaluation of Music Notation Packages for an Academic Context	Carola Boehm	£9,000.00	£9,000.00	1999 - 2000
EC	CIRCUS - Content Integrated Research into Creative User Systems	John Patterson, Stephen Arnold/Carola Boehm + cons. <b>3) 4)</b>	£2,000,000.00	£30,000.00	1997-2001
EC	Music Web Connect - Making web-based music education more musically interactive	Carola Boehm, Karst de Jong (Den Haag) and consortium <b>1)</b>	£12,000.00	£100,000.00	1998-2001
LIC/Re:Source/British Library	MuTaTeD'II - Music Information Retrieval for encoded Music	Carola Boehm	£35,000.00	£35,000.00	1999-2001
EPSRC	DMRN - Digital Music Research Network	Carola Boehm, Nick Bailey + consortium <b>2)</b>	£58,811.00	n/a	2002-2003
EC	MusicWeb Culture2000 - Train the trainer MusicWeb Workshops	Carola Boehm, John Patterson (Gla) + cons. <b>1)</b>	£120,000.00	£3,700.00	2002-2003
EC	OpenDrama - The Digital Heritage of Opera in the Open Network Environment	Carola Boehm, Nick Bailey (Gla) + consortium	£1,248,735.86	£199,000.00	2001-2004

- 1) Department of Music, University of Glasgow (UK), Royal Conservatory of Music and Dance, Den Haag (NL), Hochschule fuer Musik Hannover (DE), IRCAM, Paris (FR), TH Darmstadt, (DE), IICM, Graz (AU)
- 2) King’s College London, University of Surrey, Cambridge University, City University, London, University of Sheffield, University of Glasgow
- 3) Department of Music, University of Glasgow (UK), Royal Conservatory of Music and Dance, Den Haag (NL), Hochschule fuer Musik Hannover (DE), IRCAM, Paris (FR), TH Darmstadt, (DE), IICM, Graz (AU)
- 4) After Stephen Arnold left U.of Glasgow I inherited the CIRCUS project. Partner Members: Centre for international Technology and Education (CITE) (GB), Music Department, Computing Science, University of Glasgow (GB), Universitat de les Illes Balears (ES), London Institute (GB), Universitat Pompeu Fabra (ES), University of Portsmouth (GB), European Design Centre (NL), CNBDI (FR), Dublin Institute of Technology (IRL), University of Art and Design Helsinki-UIAH (FI), Ensci - Les Ateliers (FR), Merz Akademie, Stuttgart (D), Auditorom (GB), Utrecht School of Arts (NL), Wavecrest Systems Ltd (UK)

## 9.2. Pending Applications

<b>Funding Body</b>	<b>Project Title</b>	<b>Names of all principal investigators</b>	<b>Total Amount</b>	<b>U.Glasgow share</b>	<u>Dates</u>
AHRC	Crosstalk – Methodologies for interdisciplinary collaboration between artist and technologies	Carola Boehm, Nick Bailey	£20,000.00	£20,000.00	2006
AHRC	Bogen - A Bowing Notation For String Instruments	Carola Boehm	£4,928.00	£4,928.00	2006
EPSRC	HyperCalliope: Score Notation for Complex, Historical, non-Western and Contemporary Musics	Graham Hair, Carola Boehm, Nick Bailey	£232,000.00	£232,000.00	2005

## 10. Statement of resources

### 10.1. People

There will only be myself involved in this study and I will undertake all travel myself to ca 35 institutions.

Initial calculations based on estimates of travel per train indicate that I would be able to cover at least 35 institutions when travelling to each on in a separate trip. It is estimated that several institutions are able to be put together on one trip. As mentioned above, there will be a focus on those institutions who have been able to implement a integrated degree structure with input from more than one faculty/department/school. (I.e. joint honours courses, for instance, will be considered regarding their interdisciplinarity, but possibly not investigated more thoroughly)

An initial list of degrees around the subject music technology is appended in Appendix A.

### 10.2. Itemised budget/detailed costing

Travel	Average Train Ticket	Number of journeys		Subtotal
Train Ticket - Saver Return, average	£60.00	38		£2,280.00
Subsistence	£20.00	38		£760.00
Accommodation - B&B	£50.00	38		£1,900.00
			<b>TOTAL</b>	<b>£4,940.00</b>

### 10.3. Timetable

<b>2005</b>		
	October	collating information from public sources, creating questionnaire
	November	collating information from public sources, creating questionnaire
	December	collating information from public sources, creating questionnaire
<b>2006</b>		<b>journeys per month</b>
	January	2 journeys per month
	February	3 journeys per month, refining questionnaire
	March	4 journeys per month
	April	5 journeys per month
	May	6 journeys per month
	June	7 journeys per month
	July	8 journeys per month
	August	9 journeys per month
	September	10 journeys per month
		<b>Total: ca. 36 journeys</b>
	October	writing up
	November	writing up
	December	writing up, dissemination, publications
<b>2007</b>	January	
	February	
	March	Incorporating feedback from institutions into the report
		Finishing finalized report

**11. Period of the project**

As detailed in the above timetable, the project is planned to start in October 2005 and runs until the end of March 2007.

**12. statement of the nature and means of evaluation of the project, and provision for this evaluation to be included in the statement of resources**

N/A

**13. There should be a clear statement about how the project might be applied a) within the specific discipline of the applicants; and b) across the disciplines of PALATINE’s constituency, always with the assumption that the methods and outcomes of the project are applicable across institutions within PALATINE’s constituency.**

The project report should be of value and interest for all institutions that have music technology related degrees. It will provide for the first time comparable information collated in one document and will aid the strategic decision-making processes for academics involved in course and degree development, educational administration and at departmental/faculty/school and university management levels. All institutions taking part in the survey and visits will be provided with a first draft with invitation to feedback into it, and a final report. The report will also be published widely thus allowing all institutions, even those not having participated, to be able to access the results. Presentation of the results at conferences are expected.

Comparable interdisciplinary topics outside of music technology may also benefit from the results, although more research is planned on how transferable the results are, as teaching and historical educational contexts vary widely between disciplines.

A much more immediate benefit is to the European and international community of music technology educationalists, and here also further projects to transfer the research methodology on a European and an International level is planned.

**15. There should be a clear statement of the means of dissemination of results.**

As mentioned above, the report with all collated information will be distributed to all participating institutions directly. (If preferred it could be published as a Palatine publication.)

Following conferences are possible to be targeted for conference paper presentations:

- Annual Leeds International Music technology Education Conference
- Annual Conference of the Royal Music Association
- Digital Resources in the Humanities
- International Computer Music Conference

Following journals will be targeted for possible publications

- Organised Sound
- Computing in Musicology
- Computer Music Journal
- Journal of the Royal Musical Association
- Journal of new music research
- ICMA – Array Editor: ARRAY-ed@notam.uio.no

A website will be created with the results, or possibly downloads from the Palatine website. Notification of the availability of this publication will be sent to the usual email lists:

Scotland specific lists, such as

- CMT - Centre for music Technology Email list (Glasgow Uni) - CMT-GLASGOW@JISMAIL.AC.UK
- Span – Scottish Pop Academic Network (Scotland) - SPAN@JISMAIL.AC.UK
- Arts Faculty Email List (Uni Glasgow) - Announcement@arts.gla.ac.uk
- GIST – Human Computer Interaction Research Group (Glasgow Uni) - gist@dcs.gla.ac.uk

- Music Information Cognition (Univ. of Edinburgh) - mus-inf-cog@inf.ed.ac.uk

General lists, such as

- MUSICOLOGY-ALL, at jiscmail (UK) - MUSICOLOGY-ALL@JISCMail.AC.UK
- DMRN – Digital Music Research Network (UK) - DMRN-LIST@JISCMail.AC.UK
- RMA – Royal Music Association (UK) - RMA-LIST@JISCMail.AC.UK
- Soundscape (UK) - SOUNDSCAPEUK @JISCMail.AC.UK
- NAMHE (UK) - NAMHE@JISCMail.AC.UK
- AACE - Association for the Advancement of Computing in Education (International) - EDUCTECH@LISTSERV.UH.EDU
- ICMA – icma@umich.edu
- Palatine - NAMHE@JISCMail.AC.UK