

## **Annex E**

### **FDTL phase five: application form (for both application stages)**

#### **1. Principal applicants**

Title: **Dr.** Initials: **T.R.**..... Surname: **Kaplan**.....

Post held: **Lecturer in Economics**.....

Institution: **University of Exeter**.....

Full address: **Streatham Court, Rennes Drive, Exeter EX4-4PU UK**.....

Telephone number, including STD code and extension: **(01392) 263237**

Fax number:**(01392) 263242**.....

E-mail address: **trkaplan@ex.ac.uk**.....

Title: **Dr.**..... Initials: **D.G.** Surname: **Balkenborg**.....

Post held: **Reader in Economics** .....

Institution:...**University of Exeter**.....

Full address: **Streatham Court, Rennes Drive, Exeter EX4-4PU UK**.....

Telephone number, including STD code and extension: **(01392) 263231**

Fax number:**(01392) 263242**.....

E-mail address: **dgbalkenborg@ex.ac.uk**.....

Signature of principal applicants

.....

.....

Date: **28 February 2005**

**2. Name of a member of the senior management team (for example, vice-chancellor, pro vice-chancellor, registrar) in your institution confirming support for the application**

Professor Malcolm Cook, Senior Deputy Vice Chancellor, Chair of the Learning and Teaching Committee

**3. Signature of supporting senior staff member:**.....

Date: **28 February 2005**

**4. Co-applicants (if applicable)** (co-applicants would include contacts within both partner institutions and other departments within the lead institution)

**5. Title of project:** Bringing Economic Experiments into the Classroom

**Summary description of the project (maximum 150 words):**

Our vision is for classroom experiments to be a fundamental part of the economic programme's curriculum at the University of Exeter. The experience of putting into practice economic theory will inspire and motivate students of various quantitative backgrounds and overall lead them to a deeper approach to learning. Each student will participate in 25-30 experiments during the course of their studies and every economics module will be evaluated in order to find which experiments are most suitable to achieve the aims, objectives, and learning outcomes of the module. Overall, we will introduce 40, mostly computerized, experiments into the school's teaching curriculum. While we will incorporate existing experiments, we will also develop many new ones. These computer programs as well as articles describing how to duplicate our achievements will be made available for use at other universities through cooperation with the economics LTSN, using various media and web resources.

**6. Subject area covered in the project (tick one box to indicate which subject area the application should be considered under)**

Archaeology	[ ]
Business and management	[ ]
Celtic studies	[ ]
Classics and ancient history	[ ]
Economics	[X]
Education	[ ]
Hospitality, leisure, recreation, sport and tourism	[ ]
Librarianship and information management	[ ]
Philosophy	[ ]
Politics	[ ]
Theology and religious studies	[ ]

**7. Aspect(s) of provision covered in the project (please tick the appropriate boxes)**

Curriculum design, content and organisation	[X]
Teaching, learning and assessment	[X]
Student progression and achievement	[ ]
Student support and guidance	[ ]
Learning resources	[X]
Quality assurance and enhancement	[ ]

**8. Total amount requested: £149,914.....**

**9. Financial details !!!!**

<b>Summary of funds requested</b>	<b>Year 1 (£)</b>	<b>Year 2 (£)</b>	<b>Year 3 (£)</b>
Staff+overhead (teaching) (computer)	£34906 £18681	£36128 £19335	£20011
Travel and subsistence	£1500	£1500	£1500
Dissemination	£4363	£4516	£4674
Evaluation			
Equipment	£2800		
Other costs (please state)			
<b>Total</b>	<b>£62250</b>	<b>£61479</b>	<b>£26185</b>

**10. Project start date:** 1st October 2004

**11. Period requested:** 36 months

### **13. Supporting Statement:**

#### **Aims, objectives and outcomes of the project**

**Aims:** Students will learn economics through an active experience that will increase their understanding of key concepts and will make learning more fun. We wish to accomplish this by having classroom experiments fully integrated into the undergraduate curriculum. In these experiments, students interact in the roles of economic decision makers and experience for themselves whether the laws of economics work (or fail).

#### **Objectives:**

1. To demonstrate how experiments can be used to improve the economic curriculum by supporting active learning.
2. To widen access to students from a variety of abilities, backgrounds, and skills by offering a more active method of learning – complementing traditional methods.
3. To develop students' subject-specific skills and to experience the relevance of transferable key concepts.
4. To increase motivation and retention of students.
5. To disseminate the use of economic experiments in UK higher education by providing case studies.
6. To establish a UK network of lecturers using economic experiments as a teaching tool.
7. To supply a web-based system of economic experiments for the UK organized by modules and usable with minimal set-up costs.
8. To evaluate the success of classroom experiments as a teaching methodology.

#### **Outcomes:**

1. Development of a variety of new classroom experiments for at least five to six modules made available for easy use via the web.
2. Development of an undergraduate curriculum for economics at Exeter where economic experiments are well integrated and where each student participates in 25 - 30 experiments during the course of his or her studies.
3. The evaluation of every economics module and the determination of which experiments are most suitable to achieve the aims and objectives of the module.
4. The documentation of the experience on the curriculum level as well as for individual modules and experiments.
5. Dissemination of the available material through a network of UK outlets, including our own server, the LTSN websites, and specialised peer-reviewed journals.

#### **Rationale:**

Experimental economics is one of the fastest growing fields in economics. This was recognized when the 2002 Nobel prize in economics was awarded to the two

experimentalists, Daniel Kahneman and Vernon Smith. Vernon Smith himself was motivated in his research by the experiments on market equilibria by Chamberlain in which he participated as a PhD student. One of the applicants for this award became an economist because of his participation in economic experiments. Apart from its relevance for economic research, participating in economic experiments is a motivating way to learn economics and many of the researchers who fostered the breakthrough in experimental research have started to use experiments in their teaching. In the words of Charles Holt (1999) classroom experiments have become “the most exciting new development in teaching economics”.

By changing the whole curriculum, the use of classroom experiments is no longer left to the initiative and organizational skills of the individual lecturer, and the threshold for adapting them is reduced. For the students, a more integrated and forward-looking learning experience is provided that supports the development of a deep approach to learning, and familiarises them with a large body of experimental research.

Using Exeter as a role model, we want to show that such a change is useful and can be a success. We intend to disseminate these changes, amongst others, by involving a network of teachers at other universities as externals in the process.

Over a period of three years we will in cooperation with the economics module lecturers integrate approximately 40 experiments into the economics undergraduate curriculum. There is a fast-growing literature on classroom economic experiments consisting of over 130 hand-run and 30 computerized experiments. We will draw on this information when redesigning our curriculum and where necessary, new experiments will be developed. We will make this curriculum change as easy as possible to duplicate elsewhere by providing proper documentation and dissemination.

## **Conclusions**

In an economic classroom experiment, the student is placed in an interactive environment where he can develop many of the subject specific skills and observe the relevance of transferable key concepts (described in 4.4 in the Economics benchmarks document - <http://www.qaa.ac.uk/crntwork/economics.html>) in a simplified setting. Students will experience the relevance of marginal considerations in markets and public good experiments. They will see how markets converge to a stable equilibrium. They will encounter strategic reasoning in experiments that illustrate game theory and industrial economics. The development of subject specific skills will be reinforced because the better students' abilities are to abstract, to analyse inductively and deductively or to quantify, the more successful they can be in the experiment. The introduction of classroom experiments is a unique interactive method for generating experiential learning or ‘learning by doing’ (see e.g., Gibbs 1987) and complements other forms of interactive learning like role plays, simulations or games (see LTSN 2002a, section 1).

## **Project management**

### **Personnel:**

1. The Project Manager (Marjorie Anne Howe). Her main responsibility is to oversee the project and ensure that all objectives are met in time. She manages the documentation of the project and its various parts and ensures consistency in the collection of information. She will stay in contact with the HE academy to give and receive feedback.
2. The Director of Communications (Dieter Balkenborg). He is responsible for liaising with the module lecturers to review the curriculum of and select a suitable set of experiments for each module. He ensures that lecturers receive help with the integration of the experiments into the module. Supported by the project manager he works with the School's Teaching Committee, the Undergraduate Student Liaison Committee, and other relevant bodies of the school to ensure that the changes made support the aims and objectives of the programs affected. He is responsible for the collection and evaluation of feedback. Finally, he ensures continuous contact and coordination with the externals and is responsible for dissemination.
3. The Director of Development (Todd Kaplan). He will be in charge of organizing the software and direct the computing development officer. He will also direct the scheduling of the experiments and the training of teaching assistants. He will direct any adjustments made to reflect feedback from the students and lecturers. He will also manage the maintenance of the software and documentation of the software. He will be in charge of making the software available on-line and ensuring user friendliness.
4. The Computing Development Officer (Tim Miller). He supports the development manager. He writes the software and runs the server and the lab.
5. The Steering Committee (Paul Webley, Deputy Vice Chancellor; Jessica Claridge, Staff Development Officer; Inna Pomarina, Research Officer Economics LTSN; Paul Draper, Head of School; Gareth Myles, Head of Department; plus the above): The committee meets twice a year to evaluate the progress of the project and to give further guidance.
6. The Consultants (Charles Holt, Virginia). Charles Holt, who is considered the world's leading expert on classroom experiments, has agreed to advise us. We will consult him and other experts on key decisions and on the best use of existing knowledge and technology.
7. The Externals (to date the following have agreed. Hans Normann (Royal Holloway), Klaus Abbink (Nottingham), Miguel Costa-Gomez (York), Nick Vriend (Queen Mary), David Kraithman (University of Hertfordshire)): They meet yearly with the steering group to evaluate the overall progress of the project. In addition, there will be regular contacts with individual externals on the interchange of experiences for specific modules.

Separate tables provide a more detailed time schedule and key milestones.

### **Timing:**

**Year one** begins with the identification of the pilot (phase 1) modules that are particularly suited for the introduction of economic experiments. For the selected modules we will cooperate with the lecturers on the choice and approximate

	Oct 2004-Sep 2005	Oct 2005-Sep 2006	Oct 2006-Sep 2007	Oct 2007-
	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
1 Schedule meeting of Steering Committee/externals				
2 Secure replacement teaching				
3 Finalising project staffing				
4 Open discussions with teaching staff				
5 Initial compilation of available software and experiments				
6 Discussions with consultant				
7 Identify pilot (phase 1) modules				
8 Identify test experiments for immediate use				
9 Identification of needed phase 1 experiments				
10 Develop experiments for phase 1 modules				
11 Creation of initial and exit questionnaires				
12 <b>Implementation of test experiments within phase 1 modules</b>				
13 Evaluation of test experiments				
14 Refinement of phase 1 experiments				
15 Complete quarterly report				
16 Complete annual report				
17 Make access to server available internally (beta testers)				
18 Identify phase 2 modules				
19 Identification of needed phase 2 experiments				
20 Development of phase 2 experiments				
21 Complete the analysis of curriculum				
22 Adaptation of existing experiments to pilot modules				
23 Update of available software and experiments				
24 Creation of experiment handbook(s)				
25 Revised module descriptors				
26 Revise the analysis of curriculum				
27 Fine-tune experiments				
28 Finalise handbooks and other teaching materials				
29 Open access to server				
30 Dissemination activities				

<b><i>Critical Dates and Key Milestones</i></b>	
Dec. 2004	Phase 1 Modules and test experiments identified
Mar. 2005	Test experiments deployed.
Aug. 2005	Phase 1 experiments developed.
Sept. 2005	Phase 2 experiments identified.
Oct. 2005	Server open to Beta testers and internally. Phase 1 experiments deployed.
Mar. 2006	Analysis of curriculum complete.
Apr. 2006	Royal Economic Society Conference (demonstration)
Aug. 2006	Phase 2 experiments developed.
Oct. 2006	Server open access. Phase 2 experiments deployed.
Apr. 2006	Royal Economic Society Conference (workshop)
Sep. 2007	End of funding
Dec. 2007	Summary Chapter for LTSN handbook to be completed
Apr. 2007	Royal Economic Society Conference (workshop)

scheduling of experiments. Where possible, test experiments will be used. We will also develop new experiments and implement structural changes for phase 2. **Year two** will be the implementation stage for phase 1 modules and the development stage for the remaining phase 2. **Year three** will be the implementation stage for phase 2 modules and otherwise be used to concentrate on dissemination. Computerized experiments will be made available to lecturers throughout the UK via our webserver.

**Evaluation:** Criteria on which project is to be evaluated are:

1. *Student satisfaction and motivation:* After each experiment, students will be asked whether they learned something, whether they found it relevant and helpful for the module. For each module we add the relevant questions at the year-end student questionnaires. We will invoke the student liaison committee to evaluate the overall acceptance of experiments in the program.
2. *Student success:* We will analyse individual decisions in experiments to judge student understanding. In addition, we will statistically test whether the introduction of experiments help to improve grades.
3. *Teacher satisfaction:* We will evaluate whether teachers feel that experiments help to convey key concepts and whether – as we believe – their use leads to a reduction in the teaching load.
4. *Further criteria:* These are the project outcomes as listed before, permanence at Exeter and adoption at other institutions.

Beginning with the first experiments and continuing after year three, we will get data for criteria 1 – 3. We will promptly use this to change and improve the selection of experiments and their individual configurations as well as to revise our recommendations. During and beyond the project this data will be similarly used by the Teaching Committee for decision making. The economics LTSN will evaluate the take-up of economic classroom experiments. Hereby, our server will help track the usage of experiments within the UK.

### **Staff qualifications**

Todd Kaplan became interested in experimental economics during his undergraduate days at Caltech 1985-1989. This is one of the top places for experimental economics, where Vernon Smith (Nobel Laureate 2002) graduated from and where he conducted many of his important experiments with his coauthor Charles Plott, whom Todd assisted. Todd then moved on to Minnesota where he developed an Internet experimental market used by hundreds of business undergraduates to learn basic accounting principles. His Kaplan Strategy (see Sargent 1993, p. 156) won the Santa Fe Institute's tournament for strategies in experimental asset markets in 1990. Todd currently holds an ESRC grant for experiments studying cooperation. He has already introduced a small number of hand-run experiments into Microeconomics at Exeter and for this he received a student nomination for the LTSN teaching award.

Dieter Balkenborg first came into contact with experimental economics in 1987 when he participated as a student in a seminar organized by Reinhard Selten (Nobel Laureate 1994) at Bonn. In this seminar a different group of students would organise and conduct a different experiment every week and then compare their findings with the results in the literature. He then worked as a research assistant for several years in

Selten's experimental laboratory. He developed the software for running experiments on extensive form games and was involved in two experiments using this software. At Exeter, Dieter was instrumental in developing a new mathematics curriculum for Economics students with and without A-level Mathematics.

Marjorie Anne Howe has worked at the Economics Department or the School of Business and Economics for 19 years. As the school's administrator she currently manages the effective day-to-day functioning of the School, with particular responsibility for teaching and quality assurance activities. She is responsible for managing 17 members of the support staff. She has experience with financial management, and was responsible for coordinating the internal, and subsequent external (QAA), audit of the department of Accounting and Finance.

### **Commitment**

The University of Exeter and the School of Business and Economics are strong supporters of the project and have committed themselves to the project in a number of ways:

- Letters of support of the VC, and deputy VC, the HOS and all current members of the academic staff at the department of Economics.
- Active support of the project by School Teaching Committee.
- A grant of £75,000 for a new laboratory for experimental economics and finance.
- A teaching grant of £5,000 for the development of a pilot experiment and to provide an initial server for the project.
- A significant reduction of overheads from 46% to 6%.
- University payment for staff time of steering group members.

### **Dissemination**

This project is a case study for the integration of classroom experiments into the entire economics curriculum. Our aim is to have other institutions learn from our experience and adopt the use of economics experiments as a teaching tool. However, we would not expect all institutions to be eager to adopt our example, and our dissemination strategy addresses potential barriers.

1. They may not hear about our project.

We will go to conferences and organise jointly with economics LTSN workshops and demonstrations to present our results and promote the use of economic classroom experiments.

We will publish our results in specialized peer-reviewed journals such as the Journal of Economic Education and The International Review of Economic Education. Jointly with LTSN we will produce web pages that document the process of change, list the selected experiments for each module and advice on how to run them. We seek to publish the best examples in the LTSN Good Practice Showcases. We will write a chapter on economic classroom experiments for the LTSN teaching handbook.

2. They might not be convinced of the worthiness of our changes.

We already have considerable external support, in particular from experimentalists, and seek to expand it. In this way we hope to find teachers from a variety of universities who are already convinced of the worthiness of our changes because they like experiments, or were involved in the discussions and had some say in the design. We also expect that our contributions in specialized journals will help to convince others that our approach is worth trying.

3. They may fear that the cost of adoption will be prohibitive

On our server we will offer a plethora of easy-to-use computer experiments covering the whole curriculum. All that is needed to run the experiments is a room with computers that have access to the web. Running experiments will be attractive because it is easy and cost-efficient.

4. Other lecturers may not want to adopt our designs

Faculty at other institutions may feel constrained by our presentation and emphasis, but we envisage that the programs will be written to allow for different visual identities. We would be happy for each institution to set up individual web pages on our server. Early evaluation of our experiments at other institutions will enable us to find acceptable base designs and to incorporate suggestions from other institutions.

If, as we believe, integrating experiments into the curriculum will make our degree programs more attractive to students, competition will induce other universities to follow our example.

**Continuation.**

Changes at our university will be long term and permanent to the UG curriculum. Once the project has run out, the Teaching Committee will oversee the use of experiments and adjustment of new modules. We will create and maintain a developed network of experimental economics users, and continue to cooperate with the externals using our seminar budget. Since Exeter will continue to use the server for classroom experiments, we have a strong interest in keeping the server running and up to date, and it will subsequently be maintained by the experimental laboratory in Exeter (FEELE).

**Subject Priorities**

In each of the nine category we address at least one, often all, subject priorities. We discuss briefly which.

1. Curriculum design

We expect students to participate in 25 – 30 experiments throughout their program. Since many will be based on recent research, they will be introduced to a large body of contemporary research (1b). Experiments provide a teaching technique, which

applies to every sub-discipline in economics. It provides a move away from the largely lecture-based, examination-assessed, “dictative” teaching style that still predominates within the discipline (1c), (see LTSN 2002b, Question 32). Experiments can be tailored to different modules and different levels, from the basic core modules in Year 1 to the specialised modules in Year 3 (1e).

Each experiment is focused around a key concept in economics. By participating in experiments, the understanding of these concepts will be developed and consolidated. By letting students experience a concept, they will be able to capture what was originally only available in abstract terms (1d). This will teach weaker students the concepts and motivate them to learn the equations that describe their behaviour. It will teach stronger students the general picture and make them curious as to the limitations of the models they learn. People from a wide range of backgrounds can participate. Economic experiments have been run using people varying from Fortune 500 executives to tribal members in the Amazonian rain forest (see Camerer 1997, Henrich et al., forthcoming). Our students already come to us with diverse abilities in quantitative skills – we are one of the few (possibly the only) departments of Economics in a pre-1992 institution which does not require A-level Maths as an entry qualification – this will likely expand under the University’s proactive Widening Participation agenda. Thus, Exeter is an ideal place for demonstrating the ability of experiments to help learning from diverse backgrounds. (1a)

## 2. Employability

Bringing economic experiments into the classroom enhances employability of students by giving them valuable work-related experience (2a) that ties theory and practice and enables them to become flexible learners (Marton et al. 1984). They will be making, in a controlled environment, decisions in which external factors as well as their own skills play a part, evaluating those decisions, and learning from their experiences.

## 3. Teaching and learning

The subject priorities set here are at the very heart of our project. We believe that the introduction of classroom experiments throughout our teaching of economics will attract new students, and engage our current students, and reinforce their existing skills and knowledge. Unlike seminar or tutorial attendance, students have to engage *actively* with the experiments and we anticipate an increase in self-confidence and motivation (3c). Experiments will add a new, more explorative dimension to the way students learn: Students are forced to make decisions on their own without being able to rely on pre-worked examples. All this will help students to find a deeper, less mechanical, approach to learning (3a).

Overall, experiments are a tool for experienced learning that allow the students to go through a complete learning cycle both when improving on individual decisions in the experiments and when participating in the various elements (as lectures, tutorials, exercises and experiments) that constitute a module (3b) (Gibbs 1987, Gibbs and Habeshaw 1992).

#### 4. Assessment

Throughout an experiment students will receive instant computerised feedback to help them improve on their decisions. In addition, the group as a whole will receive a more general report on the performance in the experiment from the lecturer (or from fellow students), from which wider group discussions and the understanding of economic key-concepts will emerge. The sharing of experiences will thus support individual learning and provide formative assessment (4a), thereby enriching existing assessment strategies (4c).

However, since the feedback is not based solely upon the individual's understanding, its straight usage for summative assessment is problematic (see Holt 1999). More indirect ways to improve both types of assessments are feasible, though. For instance, summaries by students on the results of experiments can be used to enrich class discussion and provide formative assessment. We consider using portfolios for summative assessments where for each experiment the student evaluates the strategies employed, analyses what external factors were present, reflects on the decisions reached and draws conclusions for economic theory. Our project will address how the assessment of experiments can be aligned with module aims and learning outcomes (4b).

#### 5. Student progression and achievement.

As stated in (1) above, the use of experiments is highly appropriate for use in groups of students from a wide variety of backgrounds. Economic classroom experiments motivate and help to understand economic key concepts for students; this can help to improve grades (see Holt 1999) and can hence be expected to improve retention and progression rates at all levels (5a).

Weak students can easily be identified through the automated feedback (see 4 above) (5b), which will enter the personal development portfolios maintained by each student (5c).

#### 6. Student support and guidance

Priorities 6b-6d have already been addressed in earlier sections. Priorities 6a and 6e will be covered by the established personal tutor/careers advisory system at the School/University.

#### 7. Learning resources

The project specifically aims at the use of IT to support learning (7c) and at the development of subject-specific resources (7b). Our server will provide online resources whose usage will be evaluated by the project, and the computing development officer will provide technical and academic support throughout the project (7d).

## 8. Quality assurance

The integration of economics classroom experiments into our economics modules will undergo the University's normal quality assurance processes (8b), including student consultation (8c) which have recently been approved by a QAA Institutional Audit. The project is specifically intended to enhance the development of existing teaching and learning practices (8d).

## 9. Professional development

The integration of new and flexible methods of course design, delivery and assessment as suggested in our proposal supports the continuous professional development of the staff involved, particularly of new faculty (9a). The project leads to an increased deployment of graduate students for teaching. Initial training forms part of the responsibilities of the project team and will thereafter be resourced by the School (9b).

### National Priorities

#### 1. Disability issues

We will use the University's Disability Resource Centre ([www.ex.ac.uk/disability](http://www.ex.ac.uk/disability)) to provide all available help to students with disabilities. With David Kraithman (University of Hertfordshire) as external we have an expert on support for disabled students on board (see Kraithman 2004).

#### 2. Widening Participation

A major objective of this proposal is to enhance economics teaching for students from a variety of backgrounds, as has been emphasised throughout.

### **Value for Money**

The potential impact of our proposal on the structure of economics degrees is high. Our proposal would affect at least 75% of the modules taken by BA Economics students at Exeter. For a typical 30 credit economic module we plan to have 3-4 experiments. This means that each student would participate in 25-30 experiments in the course of his studies. Each experiment would last for one hour and we would expect at least ½ contact hour devoted to it in class discussions. Since the experiment would serve as a reference example, the total teaching time affected should be much higher. Still, we would not overburden the curriculum with a new time-consuming demand: around 5 out of 20 tutorial hours would be replaced per 30-credit module.

Classroom experiments are a cost-effective way of providing contact hours because, once established, they require little preparation time and can be run by teaching assistants or, in the form of projects, by students themselves. The benefits to students will be lower failure rates and better quality education.

Here we summarize the expenses in the budget.

**Project Manager:** 2 days per month for administration and report writing.

**Finance Officer (Diana Tweedie):** ½ day a month for staff financing, reimbursing expenses, and monitoring.

**Secretarial Support:** ½ day per month.

**Computing Development Officer:** 66% of time on programming the experiments, integrating other software, and general computer related issues.

**Project Directors:** 42.5% of their time to the project for the first two years and 10% of their time for dissemination and evaluation in all three years. They also require travel expenses related to dissemination.

**Overhead:** There will be a drastically reduced overhead of 6% for staffing costs.

**Externals:** cover travel plus £100 honorarium.

**Consultants:** Expenses for travel plus fees.

**Replacement Server:** While the university will provide the initial server for development and beta-testing, a new server will be required at the end of year two, when we open the access.

Camerer, C. *Taxi Drivers and Beauty Contests*, Engineering and Science, 40, 1997, 10-19.

Economics LTSN *The Handbook for Economics Lecturers*, [On-line]: UK: Available: <http://economics.ltsn.ac.uk/handbook/>, 2002a

Economics LTSN *Economics LTSN Student Survey 2002*, [On-line]: UK: Available: [http://www.economics.ltsn.ac.uk/projects/stud\\_survey2002](http://www.economics.ltsn.ac.uk/projects/stud_survey2002), 2002b

Gibbs, G. *Learning by Doing* FEU Longman, 1987

Gibbs, G. and Habeshaw, T. *Preparing to Teach (Chapter 1)* TES Ltd., 2<sup>nd</sup> ed. 1992

Henrich et al. *Foundations of Human Sociality* Forthcoming Oxford University Press,

Holt, C. *Teaching Economics with Classroom Experiments* Southern Economic Journal, 65, 1999, 603-610.

Kraithman, D and Bennett, J. *Blending Chalk, Talk and Accessibility* BEST Practice, Volume 4, Issue 2, 2004. ISSN: 1470-8035

Marton, F., Entwistle, N., and Hounsell, D., (eds) *The Experience of Learning: The Implications for Teaching and Studying in Higher Education*. Scottish Academic Press, 1984

Sargent, T.J. *Bounded Rationality in Macroeconomics* Clarendon Press, Oxford 1993

## Appendix A.

### Staff CVs.

**Dieter G. Balkenborg (suggested Director of Coordination)**  
**Todd Kaplan (suggested Director of Development)**  
**Marjorie Anne Howe (suggested Project Manager)**  
**Tim Miller (suggested Computing Development Officer)**  
**Charles Holt (suggested Consultant)**

Curriculum Vitae  
**Dr. Dieter G. Balkenborg**

Date of Birth: November 21, 1956  
Citizenship: German  
Current Address: UNIVERSITY OF EXETER  
Department of Economics  
Streatham Court, Rennes Drive  
Exeter, EX4 4PU UK  
Telephone: 0044-1392-263231 (o)  
0044-7971-590377 (p)  
FAX: 0044-1392-263242  
e-mail: D.G.Balkenborg@ex.ac.uk  
home page: <http://www.ex.ac.uk/~dgbalken>

**Education:**

1976 - 1985 University of Duisburg and University of Bonn, Mathematics,  
Degree: Diplom (similar to M.A.), with a mark of distinction.  
1986 – 1987 London School of Economics, Mathematical Economics and Econometrics.  
Degree: Master of Science, with a mark of distinction.  
1985 – 1992 European Doctoral Program in Quantitative Economics at the University of Bonn  
(1985 - 1986 and 1987 - 1992) and London School of Economics (1986  
- 1987).  
Degree: Doktor (similar to Ph.D.), honors "summa cum laude".  
Dissertation: "The Properties of Persistent Retracts and Related Concepts" under  
the supervision of Prof. Reinhard Selten.

**Academic Positions:**

Reader at the Department of Economics, University of Exeter, October 2002 – present,  
Lecturer at the Department of Economics, University of Exeter, September 1998 - 2002  
Research fellow at the Department of Economics, University of Southampton, March 1996 –  
August 1998  
Research assistant at the Department of Economics (SFB 303), University of Bonn, July  
1994 - Feb. 1996.  
Postdoctoral fellowship at the Center for Rationality and Interactive Decision Theory, The  
Hebrew University of Jerusalem, Jan. 1994 - June 1994.  
Assistant professor (visiting position) at the Department of Economics, University of  
Pennsylvania, Jan. 1993 - Dec. 1993.

**Teaching Experience:**

1978 - 1985: Tutor for undergraduate mathematics courses (University of Bonn and  
Duisburg)  
1985 - 1992,  
1995 – 1996: Lecturing and tutoring for economics courses, organization of graduate  
and undergraduate student seminars, new lecture on the theory of  
voting introduced to the undergraduate curriculum, (University of Bonn)  
1993: Lectures on Introductory Microeconomics, EC101. (University of  
Pennsylvania)  
1998 -2004: Lecturing and tutoring for economics course, development and implementation  
of new structure for first year undergraduate mathematics courses with  
Dan Sasaki (2003)  
(see <http://www.ex.ac.uk/~dgbalken/BME/structure.pdf>)  
(University of Exeter)  
February 2002: Accreditation as an Associate Teacher in Higher Education by the Staff  
and Educational Development Association (SEDA)

**Administrative Duties:**

Admissions tutor for the programs MSc in Economics, MSc in Economics and Econometrics and MSc in Financial Economics  
Undergraduate Committee (1999 -2000), Undergraduate Liaison Committee (1999 -2000)

**Research Interests:**

noncooperative game theory, evolutionary game theory, experimental economics, environmental economics.

**Grants and scholarships:**

- 1986 – 1987: Scholarship by the German Academic Exchange Service (DAAD) for Studies at the London School of Economics.
- Feb 2003: University Grant of £75.000 to establish jointly with Todd Kaplan a laboratory for finance and economics.
- Jan 2004: jointly with Todd Kaplan and Shmuel Zamir grants by the British Academy and the CNRS for the project “Can information hurt? Experiments on repeated zero-sum games with incomplete information” (total £7,500 + €3,000)
- Apr 2004: Teaching Development Award of £5,000 by the University for a server and a project to develop a classroom experiment on network externalities (joint with Todd Kaplan)

**Publications in:**

American Economic Review, Mathematical Social Sciences, International Journal of Game Theory, Journal of Mathematical Economics

University of Exeter,  
Rennes Dr.  
Exeter, EX44PU UK  
Email: [trkaplan@ex.ac.uk](mailto:trkaplan@ex.ac.uk)  
[www.toddkaplan.com](http://www.toddkaplan.com)

## Curriculum Vitae

*Dr. Todd R. Kaplan*

### ***PERSONAL DATA***

<u>Home Address</u>	<u>Telephone Numbers</u>
82 Berrybrook Meadow	Home : 01392-824272
Exminster, EX6-8UA, UK	Office : 01392-263237

Citizenship: U.S.A. and Israeli  
Date of Birth: February 11, 1968  
Married with one child (soon to be three!)

### ***MAJOR FIELDS OF CONCENTRATION***

Industrial Organization and Experimental Economics.

### ***EDUCATION***

Ph.D. Economics	University of Minnesota	1996
M.A. Economics	University of Minnesota	1991
B.S. Engineering	California Institute of Technology	1989

### ***EMPLOYMENT***

University of Exeter	Lecturer, Economics	2000-
Hebrew U, Jerusalem	Visiting Scholar, Center for Rationality.	1999-2000
Ben-Gurion University	Lecturer, Economics.	1997-2000
Ben-Gurion University	Fellow, Economics.	1996-1997

### ***MEMBERSHIPS***

ILTHE, Royal Economic Society, American Economic Association, and Econometric Society.

### ***PUBLICATIONS***

Include articles in International Economic Review, Journal of Theoretical Politics, Economic Inquiry, Journal of Mathematical Economics, International Journal of Industrial Organization, Journal of Industrial Economics, and Journal of Economic Perspectives.

## ***GRANTS***

**ESRC £46,671**, The Origins of Cooperation and Social Conventions: Experimental Evidence, Sept. 2003-Oct. 2004.

**University Research Grant £75,000**, FEELE Experimental Lab, August 2003-August 2005.

**British Academy + CNRS ca. £10,000**, Can information hurt when it shouldn't? Experiments on repeated zero-sum games with incomplete information, January 2004-December 2005

**University Teaching and Development Award £5000**, A classroom experiment on network externalities for microeconomics, May 2004-April 2005

## ***RELEVANT ACHIEVEMENTS***

- Was the sole developer (1992-1994) of an Internet experimental market used by hundreds of business undergraduates to learn basic accounting principles at the Carlson School of Management, University of Minnesota.
- Invented the Kaplan Strategy for competing in experimental asset markets in 1990. This won the Santa Fe Institute's tournament for such strategies and is still the basis of on-going research.
- Introduced a number of hand-run experiments into Microeconomics at Exeter as well as other universities.
- Received a student nomination for the LTSN teaching award.

**CURRICULUM VITAE**  
For  
**MARJORIE ANNE HOWE**

**Personal details**

Name: Marjorie Anne Howe

Address: Rosemount House  
Rosemount Lane  
Honiton  
Devon EX14 1 RN

Tel: 01404-42238

D.o.B. 18.07.43

Family: married with four adult children.

**Educational qualifications**

1964	BA(Hons) History, class 2 , University of Oxford
1965	Postgraduate Secretarial Diploma, City of London College
1968	Postgraduate Certificate in Education, Institute of Education, University of London
2004	Postgraduate Certificate in Professional Practice (higher education administration and management), AUA/OU

**Career**

1965-7	Assistant to the Secretary, Royal College of Physicians of London
1968-72	Teacher (history & classics), Notting Hill & Ealing High School, GPDST
1985-90	Secretary, Department of Economics, University of Exeter
1990-95	Secretary, Research & External Support Unit, University of Exeter
1995-7	Administrative Assistant, Department of Economics, University of Exeter
1997-	School Administrator, School of Business and Economics, University of Exeter.

## **Current role and responsibilities**

- To coordinate the management and financial planning activities of the three departments and two centres comprising the School of Business and Economics
- Within budgetary and policy constraints, to provide administrative and managerial assistance to the Head of School to ensure the effective operation and the development of the School with respect to its teaching activities, support staff activity, and teaching facilities.
- To support the teaching, learning and quality assurance activities throughout the School by the provision of sound administrative, clerical and financial procedures
- Through membership of the School's major committees to contribute to the strategic planning and administrative development of the School.
- To line manage support staff as required by the Head of School, including recruitment, selection and appraisal.

## **Administrative skills**

- Project management. Implementation of new student records system within School; management of School's internal and external audit processes.
- Staff management. As the senior administrator in the current team, I am responsible for the deployment and welfare of (currently) 17 members of support staff.
- Organisation. I manage the effective day-to-day functioning of the School, including timetabling and room allocation, and for ensuring that the School fulfils its teaching and administrative requirements within the University.
- Quality assurance. I plan and manage all the School's quality assurance procedures, including drafting of documentation for internal and external audit purposes.
- Finance. I have had responsibility (delegated since 2001) for the School's budgets and financial forecasts, with a considerable input into the annual Business Plan.

*Curriculum Vitae*  
Tim Miller (b.1963)

BA (Maths & Computer Science) Cambridge 1986

**Current position**

Research Officer (since 2003)

**Contact**

Office: Room 37 Streatham Court  
Phone (personal): (01392) 264438  
Fax (school): (01392) 263242  
email: T.J.Miller@exeter.ac.uk

**Administrative duties**

Principal software developer, The FEELE Laboratory.

**Background information**

Currently developing software for the FEELE Laboratory to perform economic experiments, using the z-Tree client/server package. Also developing web-based games for use as a teaching aid, using PHP (PEAR, Smarty), MySql and Apache.

Previously spent 17 years working for a local software engineering company on a vast range of bespoke real-time software projects, latterly using principally C/C++ and Windows NT/2000. During this time, I was involved in all aspects of the project life-cycle, from requirements analysis and capture, through design and implementation, to testing, site integration and ongoing support.

# Charles A. Holt

A. Willis Robertson Professor of Political Economy  
Department of Economics  
University of Virginia

Department of Economics 434 924 7894 (office)  
114 Rouss Hall 434 982 2904 (fax)  
University of Virginia 434 924 3177 (messages)  
Charlottesville, VA 22903-3288 434-972-7214 (home)

<http://www.people.virginia.edu/~cah2k>  
<http://veconlab.econ.virginia.edu/admin.htm>

(laboratory software) holt@virginia.edu

## Employment

Department of Economics, University of Virginia  
A. Willis Robertson Professor of Political Economy (2002-)  
Merrill Bankard Professor of Economics (1996-2002),  
Professor (1989-96), Associate Professor (1983-1989), Visitor (1979-80)  
University of Amsterdam, CREED visiting scholar (June 1996), Honorary Professor (since June 2003)

Department of Economics, University of Minnesota  
Associate Professor (1982-83), Assistant Professor (1977-81), Instructor (1976-77)  
Georgia State University, visiting scholar (Spring 2000)  
Federal Reserve Bank of Atlanta, short term visitor, (2000)  
California Institute of Technology, visiting scholar (Fall 1999)  
University of Copenhagen, CIE, visiting lecturer (July 1996)  
Stanford University, visiting scholar (Spring, 1996)  
Universite Louis Pasteur, Strasbourg, France (May 1995, May 1996)  
Economic Science Laboratory, University of Arizona (July 1989)  
Autonomous University of Barcelona (1986-87, June 1988)  
Federal Trade Commission (intermittent, 1983-1993)

## Education

1977: Ph.D. in Economics, Carnegie Mellon University  
1974: M.S. in Economics, Carnegie Mellon University  
1970: B.A. in Political Science and Economics, Washington & Lee University

## National Science Foundation Grants (co-PIs are not listed)

- 2001-06: NSF SBR "Game Theory and Social Interactions: A Virtual Collaboratory for Teaching and Research"  
(a multi-disciplinary 5-year \$2.5 million NSF Infrastructure grant)  
2003-04 NSF DUE-0230808 "Collaborative Research: Economics Experiments to Prepare Secondary Teachers and Reinforce Understanding of Basic Economics"  
1999-01: NSF SBR 9818683 "An Experimental Examination of Bounded Rationality"  
1997-00: NSF SBR 9617784, "Equilibrium with Bounded Rationality"  
1997-98: NSF SBR 9712373, "Computer Laboratory for Experiments in Economics."  
1994-97: NSF SBR-9320044, "Laboratory Markets with Discounts"  
1994-96: NSF SBR-9320617, "Information Cascade Experiments"  
1990-93: NSF SES-9012694, "Experimental Analysis of Cooperation"  
1988-90: NSF SES-8720105, "Experimental Tests of Nash Refinements"  
1983-85: NSF SES-8219720, "Experimental Studies of Industrial Organization Theories"  
1980-82: NSF SES-7923694, "Signaling Auction Markets"

## Other External Grants

- 1994: Japan Society for the Promotion of Science, visiting researcher, Tsukuba University  
1993: Experimental Games (with Jordi Brandts), Spanish DGCICYT  
1992: U.S.I.A. Academic Specialist Grant for Mexico, January 1992  
1987: US/Spain Joint Committee, Sabbatical, "Theoretical Issues in Industrial Organization"

## Professional Service

- Experimental Economics*, Kluwer Academic Press, founding Co-editor, 1998-  
Economic Science Association, President, 1991-3  
Southern Economic Association, President, 2002, First Vice President, 1993-4.  
American Economic Association, Committee on Economic Education, 1999-  
Board of Editors, *American Economic Review*, 1999-  
National Science Foundation Panels: Economics, IGERT, DRMS, Graduate Research  
Associate Editor, *International Journal of Game Theory*, 1995-2000  
Associate Editor, *Economic Theory*, 1995-1998

## **Publications:**

4 Books, 20 Survey Articles, 18 Teaching-Related Articles and over 60 Research Articles (not related to teaching).

## **Articles Related to the Teaching of Economics:**

["Classroom Games: Experienced-Based Discrimination,"](#) (with J. Goeree and R. Fryer) revised, April 2003, forthcoming in the *Journal of Economic Education*.

["Classroom Experiments: A Prisoner's Dilemma,"](#) (with M. Capra), *Journal of Economic Education*, Summer 2000, 31(3), 229-236.

["Classroom Games: Making Money,"](#) (with S. Laury), *Journal of Economic Perspectives*, Spring 2000, 205-213.

["Predation, Asymmetric Information, and Strategic Behavior in the Classroom: An Experimental Approach to the Teaching of Industrial Organization,"](#) (with M. Capra, R. Gomez, and J. Goeree), *International Journal of Industrial Organization*, 18(1) January 2000.

["Classroom Games: Rent Seeking and the Inefficiency of Non-market Allocations,"](#) (with J. Goeree), *Journal of Economic Perspectives*, 13(3) Summer 1999, 217-226.

["Classroom Games: Strategic Interaction on the Internet,"](#) (with M. Grobelnik and V. Prasnikar) *Journal of Economic Perspectives*, 13(2) Spring 1999, 211-220.

["Classroom Games: A Market for Lemons,"](#) (with R. Sherman), *Journal of Economic Perspectives*, 13(1) Winter 1999, 205-214.

["Teaching Economics with Classroom Experiments: A Symposium,"](#) *Southern Economic Journal*, 65(3), January 1999, 603-610.

["Multi-Market Equilibrium and the Law of One Price,"](#) (with S. Laury) *Southern Economic Journal*, 65(3), January 1999, 611-621.

["Employment and Prices in a Simple Macro-Economy,"](#) (with J. Goeree), *Southern Economic Journal*, 65(3), January 1999, 637-647.

["Coordination,"](#) (with Monica Capra), *Southern Economic Journal*, 65(3), January 1999, 630-636.

["Voting and Political Institutions,"](#) (with Lisa Anderson), *Southern Economic Journal*, January 1999, 622-629.

["Classroom Games: Bubbles in an Asset Market,"](#) (with S. Ball), *Journal of Economic Perspectives*, 12(1), Winter 1998, 207-218.

["Classroom Games: Voluntary Provision of a Public Good,"](#) (with S. Laury), *Journal of Economic Perspectives*, 11(4), Fall 1997, 209-215.

["Classroom Games: Trading in a Pit Market,"](#) *Journal of Economic Perspectives*, 10 (1), Winter 1996, 193-203.

["Information Cascades,"](#) (with L. Anderson), *Journal of Economic Perspectives*, 10(4), Summer 1996, 187-193.

["Classroom Games: Understanding Bayes' Rule,"](#) (with L. Anderson), *Journal of Economic Perspectives*, 10(2), Spring 1996, 179-187.

["Experimental Economics in the Classroom,"](#) (with Tanya McDaniel) in William B. Walstad and Phillip Saunders, eds., *Teaching Undergraduate Economics: A Handbook for Instructors*, McGraw Hill, 1998, 257-268.

## Appendix C.

### References

#### Internal support:

- A) Steve Smith, Professor of Politics, Vice Chancellor of the University of Exeter
- B) Paul Webley, Professor of Economic Psychology, Deputy Vice Chancellor of the University of Exeter
- C) Paul Draper, Professor of Economics, Acting Head of School of Business and Economics, University of Exeter
- D) Paul Collier, Chair of the Teaching Committee for the School of Business and Economics, University of Exeter
- E) Academic staff in the Department of Economics

#### External support:

- F) John Sloman, Economics LTSN Director
- G) Martin Timbrell, Dean, Business School, University of Hertfordshire
- H) Nick Vriend, Queen Mary, London
- I) Klaus Abbink, The University of Nottingham
- J) Miguel Costa-Gomez, The University of York
- K) Hans Normann, Royal Holloway, London, (e-mail)



**VICE-CHANCELLOR  
PROFESSOR STEVE SMITH AcSS**

David Kernohan,  
FDTL Project Manager,  
HEFCE,  
Northavon House,  
Coldharbour Lane,  
Bristol,  
BS16 1QD.

27 April, 2004

Dear Mr. Kernohan,

This project has my full support. It is an exciting project with an excellent management team that would make Exeter a leader in teaching innovation. With the newly established laboratory, Experimental Economics has become a new priority area in the School of Business and Economics. This should also be reflected in the teaching strategy. The carefully designed proposal shows how this can be achieved in a way that makes learning interactive and fun. The university has already invested in the development of the lab and teaching resources in experimental economics. Our continued commitment to both the project and laboratory is firm."

Yours sincerely,

A handwritten signature in black ink that reads "Steve Smith".

**Professor Steve Smith  
Vice-Chancellor**



**DEPUTY VICE-CHANCELLOR  
PROFESSOR PAUL WEBLEY**

**David Kernohan  
FDTL Project Manager  
HEFCE  
Northavon House  
Coldharbour Lane  
Bristol BS16 1QD**

**27 April 2004**

Dear Mr. Kernohan:

I am writing to you to express my support for the FDTL application by Dr. Dieter Balkenborg and Dr. Todd Kaplan.

The applicants intend to make computerised experiments an integral part of the curriculum of the economics programmes at Exeter University. They aim to do this in a well-documented way that makes it easy to disseminate their findings to other universities. They also plan to develop new experiments for teaching purposes, which will also be made available to other universities.

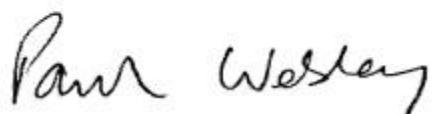
As an economic psychologist with contributions to experimental economics, I can only welcome the proposal. In my view, experimental economics currently plays too small a role in both research and teaching UK economics' departments. The proposal would let Exeter pioneer a new way of teaching economics. As a Deputy Vice-Chancellor of this University I regard this as an initiative of which our University could be proud.

The proposal is ambitious because the applicants do not want to alter just a single module, but strive to improve the curricula of all economic modules. There are a number of reasons why the applicants will be able to do this successfully. First of all, there are existing libraries with experiments that can be used for teaching purposes. The applicants do not have to reinvent the wheel. A large part of the exercise is one of curriculum design and coordination between different modules. Second, both applicants have several years of experience in the practical development of experiments and are familiar with the technical problems that might arise. Their backgrounds in experimental economics represent two leading streams of thought: In Todd's case, the Plott-Smith market oriented approach, and in Dieter's case, the Selten, game-theoretic, bounded rationality approach. Third, the University has given a research grant of £75,000 to the applicants to establish a laboratory for experimental economics and finance. This is the biggest single research grant the University has awarded this year. The School of

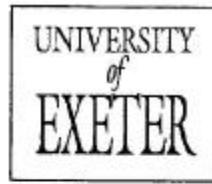
Business and Economics has also provide them with the use of a computer room as a basis for their lab.

Overall, I see here a proposal that is both ambitious and realistic. It has the potential to have a lasting impact on the way economics is taught in the UK. I hope the opportunity to support this project will not be missed.

Yours sincerely,

A handwritten signature in black ink that reads "Paul Webley". The signature is fluid and cursive, with "Paul" on the top line and "Webley" on the bottom line.

Paul Webley



## SCHOOL OF BUSINESS AND ECONOMICS

27 April 2004

Dr David Kernohan  
FDTL Project Manager  
HEFCE  
Northavon House  
Coldharbour Lane  
Bristol BS16 1QD

Dear Dr Kernohan

### Re: Bringing Economic Experiments into the Classroom - Dr D Balkenborg and Dr T Kaplan

As Head of the School of Business and Economics, I strongly support Drs Balkenborg and Kaplan's bid to apply experimental economics throughout the curriculum of the Economics degrees offered by the School. Both applicants have already introduced radical changes into their undergraduate modules to the benefit of first and second year teaching. The (suggested) program manager is very experienced and knowledgeable about teaching methodologies and quality assurance issues. The possibility of introducing this experimental component into the entire undergraduate curriculum is an exciting prospect for the School. It will make Economics more accessible to a wide variety of students and provide our economics programs with a new competitive edge.

The implementation of the experiments will be carefully monitored and evaluated by the School's Teaching Committee. It is anticipated that the returns, in terms of student motivation and understanding, will more than compensate for any changes to our conventional teaching. We will actively involve our Undergraduate Student Liaison Committee in this process.

What is particularly praiseworthy about the project is its long-term implications for teaching Economics here at Exeter and its potential for dissemination to other institutions. It is a very significant and interesting proposal, which I warmly recommend to you.

Yours sincerely

A handwritten signature in black ink that reads "Paul Draper".

Paul Draper



## SCHOOL OF BUSINESS AND ECONOMICS

28 April 2004

Mr D Kernohan  
FDTL Project Manager  
HEFCE  
Northavon House  
Coldharbour Lane  
Bristol  
BS16 1QD

Dear Mr Kernohan,

### FDTL Application

In my capacity as chair of the Teaching Committee of the School of Business and Economics, I am writing to confirm the Committee's full commitment to the project outlined in the above application.

As chair of the School Teaching Committee, I am responsible to the School and the University Teaching and Learning Committee for all aspects of teaching quality assurance including:

- responsibility with the Head of School for the School's Learning and Teaching Development Strategy;
- approval of curriculum changes both at module and programme level;
- resolution of issues relating to teaching and learning raised by student's at the School's undergraduate and postgraduate Staff Student Liaison Committees;
- annual evaluation of modules and programmes and the resolution of issues arising; and
- oversight of annual peer review of teaching exercise.

The project will be a key element of the School's Learning and Teaching Development Strategy and the Committee will therefore fully support the implementation of the curriculum changes and be proactive in ensuring that the outcomes from the project are properly evaluated, at the level of both individual modules and as an integral part of the degree programmes affected. The Committee also undertakes to ensure that changes resulting from the project will be embedded in the Economics curriculum and that, after the project's completion, the changes will be maintained, through ensuring that they are incorporated in the design of new Economics modules, and that the training of Graduate Teaching Assistants includes a thorough grounding in the new approaches developed in the FDTL project.

If you require any clarification or further information, please do contact me.

Yours sincerely

A handwritten signature in black ink that reads "Paul Collier".

Dr Paul Collier  
Chair of the Teaching Committee for the School of Business and Economics

---

Dr Paul Collier, BSc, PhD, FCA  
Senior Lecturer in Accounting  
University of Exeter  
School of Business and Economics  
Streatham Court  
Rennes Drive  
Exeter EX4 4PU  
UK

Tel: 01392 263238  
(Secretary) 01392 263201  
Fax 01392 263210



## SCHOOL OF BUSINESS AND ECONOMICS

Letter of support by the current academic staff of the department of economics, University of Exeter

We strongly support the application "Bringing Economic Experiments into the Classroom" and believe it will substantially improve our current curriculum. We look forward to using experiments in our courses and agree to cooperate with the grant applicants on the development and the implementation of the changes requested in the proposal.

Exeter, April 2004

Gareth D. Myles

I. George Bulkley

Steven McCorriston

Simon Wren-Lewis \*

John Maloney

Mohan Bijapur \*

Walter Distaso \*

Department of Economics  
School of Business and Economics  
Streatham Court  
Rennes Drive  
Exeter EX4 4PU, UK

Tatiana Kirsanova

Christos Kotsogiannis

Miltiadis Makris

Malcolm J.J. Macmillen

Bernard R. Pearson

Alison E.C. Wride

Nigar Hashimzade

\* on leave, e-mail confirmation received

Telephone (School) 01392 263200  
Telephone (University) 01392 263263  
Fax (School) 01392 263242

Dr. Todd Kaplan  
Economics Department  
School of Business and Economics  
University of Exeter  
Streatham Court  
Rennes Drive  
Exeter EX4 4PU

28 April 2004

**Dear Dr Todd Kaplan,**

**Bringing Economic Experiments into the Classroom**

Further to our recent discussions about your FDTL5 Stage 2 bid I am writing to confirm that the Economics Subject Centre of the Higher Education Academy (formerly Economics LTSN) would, in principle, be able to help implement your proposed dissemination / continuation strategy.

I can confirm that we have discussed the detail of your dissemination / continuation strategy, and have agreed a broad outline of activities that we would be able to deliver with you. This is as specified in your Stage 2 bid document. The final detail of joint activity will be agreed should you be successful in securing funding.

We have discussed the possibility that the range of activities in which your project would engage might change as the project develops, and also that the approach of this subject centre might change over time. In such circumstances we are committed to working in partnership with you to ensure that every reasonable effort is made to maintain an effective and mutually supportive relationship.

You are aware that the subject centres are currently funded until 31 December 2005. Whilst we hope to continue into 2006 we can at this stage only give an in-principle agreement to work with your project beyond that date. The actual delivery of such activity would depend on the funding bodies extending their support to the subject centres.

We look forward to working with you should you be successful in Stage 2 of the bidding process.

With best wishes

*John Sloman*

John Sloman  
(Economics LTSN Director)



University of Hertfordshire  
Business School  
College Lane  
HATFIELD  
AL10 9AB

28 April 2004

Dr Dieter Balkenborg  
Department of Economics  
School of Business and Economics  
Streatham Court  
University of Exeter  
EXETER EX4 4RJ

Dear Dieter

I was very interested to hear about your proposal on "Bringing Economic Experiments Into the Classroom". The University of Hertfordshire is very interested in and closely follows new developments of teaching strategies; we have our own StudyNet which is a considerable development of the standard Blackboard used elsewhere and we have invested a lot of our resources at both University and School level in establishing Learning and Teaching fellows and in supporting research and development in teaching technologies and methodology. Your proposal suggests a new, particularly valuable approach to teaching economics, which is also of interest to us in the Business School.

I strongly support the proposal and would be pleased to be involved in some way. If we can be of practical assistance in the trialling or monitoring of the project please don't hesitate to ask. In any event we are keen to learn from the Exeter experience and would be delighted to help with the evaluation of the project.

I look forward to hearing from you

Martin Timbrell  
Dean, Business School  
University of Hertfordshire  
[m.c.timbrell@herts.ac.uk](mailto:m.c.timbrell@herts.ac.uk)  
01707 285401



Queen Mary, University of London  
Department of Economics  
Mile End Road  
London E1 4NS, UK

Nicolaas J. Vriend  
n.vriend@qmul.ac.uk  
www.qmul.ac.uk/~ugte173  
020 7882 5081

Re: "Bringing economic experiments into the classroom" by the University of Exeter  
(FDTL Phase 5)

London, 28/4/2004

To whom it may concern:

In my view, the project "Bringing economic experiments into the classroom" by the University of Exeter could substantially improve the teaching of economics in the UK, and is of interest to other universities.

I believe this is one of the important novel methods to teach economics, organizing the theoretical principles around classroom games; with homework and discussion based on the students' actual experience. In particular in relatively large groups this is an effective way to achieve an active participation of most students in the learning process. In particular the fact that the Exeter project will focus on setting up a framework to develop computerized experiments may benefit many other economics departments.

Hence I support the project, and would consider to evaluate it, e.g. as an external assessor.

Yours sincerely,

A handwritten signature in black ink, appearing to read "N. Vriend".

Nicolaas J. Vriend

**Dr Klaus Abbink**  
 Tel +44 (0)115 951 4768  
 Klaus.abbink@nottingham.ac.uk

Your reference      Our reference  
 KA

**Dr Dieter Balkenborg**  
 University of Exeter

— by fax —

26 April 2004



**The University of  
 Nottingham**

**School of Economics**  
 Economics and Geography Building  
 University Park  
 Nottingham  
 NG7 2RD  
 Tel +44 (0)115 951 5151  
 Fax +44 (0)115 951 4159  
[www.nottingham.ac.uk/economics](http://www.nottingham.ac.uk/economics)  
 Head of School:  
**Professor David Greenaway BSc MCorn  
 DLitt FRSA AStS**

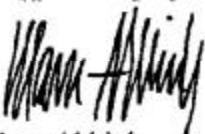
To Whom It May Concern

The proposal

**"Bringing Economic Experiments into the Classroom"**

tries to implement a very important new development in teaching.

I support the project and would be willing to help with its evaluation.

  
 Klaus Abbink



Dr. Miguel Costa-Gomes

DEPARTMENT OF  
ECONOMICS AND  
RELATED STUDIES

Heslington, York YO10 5DD

Faxsimile (01904) 433759

Direct line: (01904) 433777

E-mail : [mcg6@york.ac.uk](mailto:mcg6@york.ac.uk)

26<sup>th</sup> April, 2004

Dear Sirs,

The project "Bringing economic experiments into the classroom" by the University of Exeter is very innovative and has a high potential to improve teaching.

I support it and would be willing to help with the evaluation of the project.

Feel free to contact me should you require any further information.

Sincerely yours,

*Miguel A. Costa-Gomes*  
Miguel A. Costa-Gomes

 WebMail - Kaplan / Balkenborg project 

[Delete](#) [Folders](#) [Create](#) [Reply](#) [Reply All](#) [Forward](#) [Previous](#) [Next](#) [Options](#)

[Index](#) [Help](#)

**Date Sent:** 29 April 2004 08:53

**From:** Normann Hans  
<Hans.Normann@rhul.ac.uk> [Add to Address Book](#)

**To:** "Todd R. Kaplan" <T.R.Kaplan@exeter.ac.uk>

**Subject:** Kaplan / Balkenborg project

**Status:**  New

To whom it may concern,

This is support the application of Todd Kaplan and Dieter Balkenborg. It is a great idea to have experiments ready on the internet for use in the classroom. I look very much forward to use this platform for my own classes and I am confident that the tool they develop will enjoy wide popularity not only in the UK but world wide.

Your sincerely,

Hans Theo Normann

---

Professor Hans Theo Normann  
Director of Graduate Studies  
Department of Economics  
Royal Holloway  
University of London  
Egham, Surrey TW20 0EX  
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+44 1784 414003 (Telephone)  
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[hans.normann@rhul.ac.uk](mailto:hans.normann@rhul.ac.uk)  
<http://www.rhul.ac.uk/Economics/About-Us/normann.html>



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