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**CENTRE/GROUP/NETWORK
DIRECTOR'S
ANNUAL REPORT FORM**

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CENTRE/GROUP/NETWORK DIRECTOR'S ANNUAL REPORT

(This page must be completed by the Case Officer before forwarding to the Director)

Reporting period : **from 1 October 2002 to 31 December 2003**

Name of Centre/Group/Network : **ESRC Centre for Social and Economic
Research on Innovation in Genomics
(INNOGEN)**

Director's name : **Professor Joyce Tait**

Start and End Dates : **1 October 2002 to 30 September 2007**

Year of Operation : **1st**

Total budget : **£2,081,849.22**

The Director's Annual Report should be completed and sent to the relevant ESRC Case Officer by **31 March 2004** by **email** and in **hardcopy** (original plus three copies, with signed cover letter).

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1. Executive Summary

Innogen's first year of operation has been one of hard work and satisfying achievements. The objectives that were relevant to this first year of our programme have generally been met or surpassed.

The Innogen Launch, in June 2003, was a successful high profile event held at the National e-Science Centre, Edinburgh. Speakers included Dr Ian Gibson MP, Chair of the Parliamentary Science and Technology Committee, Professor Timothy O'Shea, Principal of the University of Edinburgh and Professor Joyce Tait. A public lecture and debate on 'Genetics and Society: Balancing Progress and Policy' by Professor Veronica van Heyningen followed, and the event was rounded off by a reception hosted by Professor Jane Bower.

Staff have been appointed to all five of the projects funded under the Innogen programme, and also to the two projects for which additional funding has been obtained, from Scottish Enterprise and from the ESRC Science in Society Programme. The research fellows, and associated academics, based at Edinburgh and the Open University, are all working well together with frequent joint meetings, face-to-face and by telephone links. It is too soon to expect research outputs from these projects, but the Fellows and staff involved have been active in developing papers and reports setting their research in the wider context of the Innogen programme, writing position papers, writing papers and reports based on previous research which has led up to the Innogen projects, and advising policy makers and other stakeholders through participation in workshops and preparation of policy briefing papers.

At the beginning of the Centre's overall programme, we are taking a strategic approach to its further development, extending the Innogen vision, its research programme and the coverage of life science issues. Our first priority is to build up the theme on 'Identity, Culture and Everyday Life' funding for which was excluded from the Centre proposal at the request of ESRC. We are also extending the programme into new areas that were poorly covered in our initial proposal, particularly genetic databases and stem cells. Our overall integrated approach to governance of innovation in the life sciences focuses on three constituencies: Science/Innovation Communities; Policy Makers and Regulators; and Citizens and Stakeholders; and explores in detail the interactions among these three communities. Our vision for the programme as a whole is thus to cover these three constituencies and their interactions for all the major areas of scientific development and innovation in the life sciences. Following this early phase of fund-raising and expansion, years 3-5 will give more attention to consolidation of the programme, delivery of outputs and continuity beyond the five year period of initial funding.

Particularly relevant in this first year has been our contributions to the UK GM Crops Dialogue, including the GM Nation? public debate, the Review of GM Science, the AEBC report on Coexistence and Liability, and the results of the Farm-scale Evaluations of the effects of three GM herbicide resistant crops on biodiversity. Innogen's contributions included: our invited participation in specialist groups and scenario exercises run by the Cabinet Office Strategy Unit; submission of a policy brief on developing country and capacity building concerns; partnership with the University of East Anglia in monitoring the GM Nation? Public debate; and the Innogen Annual Conference which was sponsored by the Agricultural and Environment Biotechnology Commission and the Scottish Executive as a contribution to advising policy makers on decision making on the commercialisation of GM crops. A glossy report of the conference, written in non-academic language, was commissioned from an experienced journalist and has been widely distributed. The report is also available on the Innogen and AEBC websites.

Innogen has been actively engaged with policy and other stakeholder communities on a number of other occasions. A popular series of lunchtime seminars is being presented to

1. Executive Summary (continued)

Scottish Executive policy staff on 'Risk Management in Policy Making'. This is the third year of presentation of such seminars on a range of issues related to modern approaches to governance and policy integration. They arose out of a series of seminars (the SUPRA Seminars) funded through an ESRC Seminars grant.

Innogen members have also been invited to take part in advisory workshops and consultations, or have been invited to give presentations at major national and international meetings. Topics have included: stem cells; development issues, knowledge transfer and capacity building; the Novartis/Berkeley research agreement; biotechnology trends in Europe; trade justice; options for bio-science research in East Africa; embryo donors and non-donors views on embryo experimentation; knowledge divides; evaluation of international development support to Mozambique; risk management in policy making and governance of genomics-related technology.

Research projects in Asia, Africa and Latin America and the associated network building are also proving particularly successful. Partnerships are being built with local scientists and social researchers in India and Kenya, and the staff and research fellows involved are being invited to become actively engaged in local initiatives.

Strong engagement with scientists and medical practitioners, within Edinburgh and the Open Universities and more widely, has been an important and very satisfying part of Innogen's programme throughout the year. Innogen members have given lectures and seminars to scientists in university departments and research institutes and to meetings organised by science-based bodies and research councils. Medical and natural scientists also approach us increasingly frequently with a view to joint involvement in research proposals or presentations.

Innogen has exceeded expectations of the number of refereed academic papers, published or in press, in its first year. Some of these are background papers developing the basis of Innogen projects. Others report on previous research but were developed in Innogen time and are set in the context of the Innogen research programme. Work is also under way for four book contracts and several papers are being developed as chapters in books. Staff have also been invited to give presentations at an impressive array of national and international conferences, meetings and workshops related to life science issues.

We have begun to develop a flourishing programme of visiting fellowships and plan to expand this in 2004.

Management of the Centre is conducted in a collaborative and supportive environment with clear and effective division of labour among the three Directors. Procedures are, on the whole, informal, with easy access of all staff to the three Directors. We have concentrated in the first year on team building and generating awareness among all researchers of the research programme of the project as a whole. However, we lay strong emphasis on the quality and timeliness of presentation of outputs and their delivery in a jargon-free style.

Innogen has under-achieved in two areas. We intended to submit a proposal to the 6th Framework Programme for a Network of Excellence and indeed did submit an Expression of Interest. However, we were advised by senior officials in the Research Directorate that it would not be fundable as it was too interdisciplinary. We are however, involved as members in the PRIME Network of Excellence. The second area where we have not met expectations is in the filling of the ESRC-funded PhD studentships awarded last year. We have not been able to find applicants who meet the ESRC's UK residence requirements, although we have had interest from other applicants.

2. Introduction

Funding for the first phase of the Innogen Centre (Centre for Social and Economic Research on Innovation in Genomics) programme was awarded from October 2002 – September 2007, with the following overall aim:

to build an internationally respected Centre to enable social scientists and ESRC to take a leading role in policy, public and innovation-related debates on life science issues, and to contribute to the shaping of the biotechnology trajectory along with other research councils, from a well informed, evidence-based position.

The total ESRC award of £2,081K over 5 years was supplemented in 2003-4 by a further £60K to enable the appointment of a project manager at 60% time, rather than the original 40%. Also included in the proposal was a contribution of £713K for the contribution of staff based at the University of Edinburgh and the Open University, and also to cover 20% of the Director's salary. Additional co-funding items included: £60K from Scottish Enterprise for the award of a 2-year research fellowship; £93K in total to cover contributions of senior scientists, company managers and others involved in Innogen activities as members of the Stakeholder Platform or in other capacities; and £120K to cover the contributions of formal associates of the Innogen Centre based in other Universities.

The focus of the Innogen Centre's research programme is on the life sciences and their capacity to shape the technology trajectory of the 21st century, from three perspectives: scientists, industry and private interest groups; policy makers and regulators; and citizens and public interest groups. Our interdisciplinary analysis is exploring the interactions among these constituencies and their implications for the evolution of the knowledge base, the structure and dynamics of the industry sectors involved (pharmaceuticals, health care, food and agro-biotechnology), the evolution of policy at UK, EU and global levels, and the development of processes of citizen and stakeholder engagement in innovation processes. The outcome of these interactions, the reciprocal shaping of technology and society, nationally and globally, will exert a major influence on the health, welfare and prosperity of citizens and on environmental quality and sustainability.

We are working closely with scientists in the University of Edinburgh and elsewhere to develop further our approach to interdisciplinary integration across social and natural sciences and to expand the research programme beyond the funding provided by ESRC.

Key performance indicators (KPIs) include indicators of excellence in academic performance such as refereed journal articles; books; web-based discussion paper series; contributions to, and organisation of, academic conferences and workshops. No less important, given our strong emphasis on stakeholder engagement, we will provide evidence-based advice to industry, policy makers and public groups, through our Stakeholder Platform and also through participation in the work of strategic planning bodies (public and private), giving presentations to stakeholder meetings (often held under Chatham House Rules), contributing to non-refereed trade journals, and developing user-friendly guidelines for stakeholders.

In our communications strategy, the scientific accuracy and pertinence of communications to their intended audience will be of paramount importance. However our programme also stresses the public relations impact of quality of presentation and clarity of communication.

3. Objectives

The Innogen Centre's objectives, as stated in the proposal to ESRC are:

- 1. To conduct a strong, innovative programme of fundamental and applied social science research**
 - (i) undertaking empirical research, showing rigour and innovation in research design
 - (ii) developing new theoretical insights on important developments
 - (iii) ensuring effective dissemination of theoretical and empirical contributions to academic audiences
 - (iv) developing the careers of new and outstanding researchers
- 2. To engage proactively with the scientific community and with stakeholders by:**
 - (i) linking theoretical and empirical developments to the needs of wider public, policy makers, industry, scientists and other stakeholders
 - (ii) ensuring that socio-economic research is scientifically and technically well informed
 - (iii) establishing active links with user communities and stakeholder constituencies
 - (iv) engaging stakeholders in interpretation of findings, their implications and dissemination
- 3. To contribute to shaping the socio-technical development of the life science trajectory by:**
 - (i) monitoring and contributing to public and policy debates on biotechnology-related issues, nationally and internationally
 - (ii) developing the Centre as a major contributor to, and recipient of, funding from the Sixth Framework Programme
 - (iii) developing training programmes for stakeholders and user groups, including scientists, industry managers and public groups, based on our integrative approach
 - (iv) advising and working with stakeholders (by invitation) to contribute to decision making

Suggested changes and additions:

The sixth Framework Programme has not lived up to our expectations as a source of funding for social science research and we would like to modify objective 3(ii) as follows: To contribute to the EC Sixth Framework Programme by active participation in the PRIME Network of Excellence, to take up further opportunities in FP6 as they arise, and to contribute actively to planning of the Seventh Framework Programme.

We would also like to add a fourth objective:

- 4. To develop training programmes for postgraduate students and for in service training of managers, and a visiting fellows programme by:**
 - (i) developing a masters programme in Genetics and Society within the current Science and Technology Studies offered at the University of Edinburgh
 - (ii) developing a doctoral programme in Genetics and Society
 - (iii) developing training programmes for stakeholders and user groups, including scientists, industry managers and public groups, based on our integrative approach
 - (iv) developing a visiting fellows programme to encourage international exchanges and development of the research programme
 - (v) assisting in the development of distance education programmes at the Open University

4. Main outcomes of the year

The first fifteen months of Innogen's programme was a period of intense activity, setting up and beginning work on the Innogen programme itself, building networks among scientists and other social scientists in areas relevant to our programme, and building capacity in the Centre for the remainder of the first 5-year programme.

Research programme start-up and further development

The research programme was started up in good time with the appointment of the five ESRC funded fellows, James Mitra, Aparna Joshi, James Smith, Catherine Lyall and Ann Bruce. The rather brief project outlines had to be specified in more detail and in some cases boundaries delineated more clearly to make projects manageable in the time available. Project plans covering the first 18 months were prepared for all projects.

Having specified more clearly the programme as funded by ESRC, we developed a strategy for its further expansion. Our first priority was to build up the theme on 'Identity, Culture and Everyday Life' which had been reduced in prominence at the suggestion of ESRC in developing the Centre proposal. This component is an important part of Innogen's overarching approach which is to focus in detail on three constituencies: Science/Innovation Communities; Policy Makers and Regulators; and Citizens and Stakeholders; and to explore in detail the interactions among these three communities through the development of an integrated approach to governance of science and innovation in genomics-related areas.

Another important strand of our research strategy is to extend the programme into new areas that are poorly covered by the ESRC-funded programme, most important in the short term being genetic databases and stem cells.

In the area of genetic databases, Sarah Cunningham-Burley, Graeme Laurie, Sarah Parry and Ann Bruce have all been involved in a preliminary consultation on public responses to the Generation Scotland genetic database being proposed by Professor David Porteous. This work was funded by the University of Edinburgh Professionalisation of Commercialisation Fund. Subsequently, Innogen and the AHRB Research Centre for Studies in Intellectual Property and Technology Law were included in a successful £1.8 million proposal to SHEFC involving scientists, medical professionals and social scientists for a project on 'Genetic Health in the 21st Century' (21CGH), again on the subject of genetic databases, both BioBank and Generation Scotland. This grant will fund two posts, one for a social scientist to be based in Innogen and one for a lawyer to be based in the AHRB Centre.

Innogen has also been active in the stem cells area, in developing proposals to initiatives announced by ESRC and BBSRC in particular.

Two additional fellows have been appointed to the Centre, Alessandro Rossiello to a 2 year Scottish Enterprise Fellowship and Seife Ayele to a project funded by the ESRC Science in Society Programme, supplemented by a grant from the Open University.

Innogen is also involved in a European Network of Excellence (PRIME) to which we will be bidding for funding, and with a smaller EC NEST-based project ATBEST, looking at 'breakthrough' technologies, particularly nano-technology.

Innogen Launch

The Innogen Launch was held at the National e-Science Centre, Edinburgh on 10th June 2003. Speakers included Dr Ian Gibson MP, Chair of the Parliamentary Science and Technology Committee, Professor Timothy O'Shea, Principal of the University of Edinburgh and Professor Joyce Tait. A public lecture and debate on 'Genetics and Society: Balancing Progress and Policy' by Professor Veronica van Heyningen followed, and the event was

4. Main outcomes of the year (continued)

rounded off by a reception hosted by Professor Jane Bower, Glasgow Caledonian University and Innogen Visiting Fellow. This was a high-profile event for the university and was attended by all three Heads of College and approximately 100 other senior staff from Edinburgh and other universities, from research institutes and policy communities, in Scotland and the rest of the UK.

UK GM Crops Dialogue

Based on the previous research on agro-biotechnology by several members of Innogen, we were actively involved in the UK GM crops Dialogue during 2003. Joyce Tait was invited to participate in the Scenario Workshops organised by the Prime Minister's Strategy Unit as part of the UK GM Crops Dialogue, 2 December 2002 and was also a member of the Industry and Science Expert Group for the UK Government Cabinet Office Strategy Unit Study on Costs and Benefits of GM Crops, representing the EC-funded research done with David Wield and Joanna Chataway on 'Policy Influences on Technology for Agriculture'. In addition, Seife Ayele, Joanna Chataway, Aparna Joshi and David Wield provided inputs to the Cabinet Office on their contributions to GM Nation Debate in the context of developing countries.

Joyce Tait and Ann Bruce also collaborated with the University of East Anglia on their evaluation of the GM Nation? public debate.

Innogen's Annual Conference, Edinburgh, 13th November 2003 was also a contribution to the UK Dialogue on GM crops. Titled 'Precaution and Progress: Lessons from the UK GM Crops Dialogue', it was sponsored by the Scottish Executive and by the Agriculture and Environment Biotechnology Commission (AEBEC). The conference considered the implications of the components of the UK dialogue on GM crops and how these might be integrated in the policy decision making process. 134 delegates attended the conference: 130 from the UK, 3 from Europe and 1 from China, and the event was deemed to be very successful. The conference report has been published by AEBEC and will be circulated widely by them as well as going on their website.

Other engagement with policy makers

There have been numerous other occasions throughout the period of the report where Innogen staff have been invited to take part in advisory workshops and consultations, or have been invited to give presentations at major national and international meetings. We have continued our regular series of lunchtime seminars for policy makers in the Scottish Executive on 'Risk Management in Policy Making' covering a range of issues related to modern approaches to governance and policy integration.

Other occasions for effective engagement with policy makers have covered: stem cells; development issues, knowledge transfer and capacity building; the Novartis/Berkeley research agreement; biotechnology trends in Europe; trade justice; options for bio-science research in East Africa; embryo donors' and non-donors' views on embryo experimentation; knowledge divides; evaluation of international development support to Mozambique; risk management in policy making and governance of genomics-related technology.

Engagement with science communities

Strong engagement with scientists and medical practitioners, in Edinburgh and the Open Universities and more widely, has been an important and very satisfying part of Innogen's programme throughout the year. Innogen members have given lectures and seminars to scientists in university departments and research institutes and to meetings organised by science-based bodies and research councils.

4. Main outcomes of the year (continued)

In several cases, medical and natural scientists have approached us with a view to joint involvement in research proposals or presentations; and where Innogen has initiated the contact we have had a ready and enthusiastic response.

Workshop and seminar programmes

Five Innogen seminars have been held and there is a regular monthly programme of seminars, drawing on speakers nationally and internationally. Innogen also contributed to the International Workshop, 'Innovation, Growth and Market Structure: Biotechnology and Pharmaceuticals', March 2003, Regent's College Conference Centre, London, organised by Mariana Mazzucato, jointly with the Centre for Economic Research at the Open University. It was attended by 67 participants from eight European countries and also the USA. In the final session, attendees supported the proposal to form a more permanent network of socio-economic researchers studying evolution of the life science industries.

Early successes in Asia, Africa and Latin America

The research projects in Asia, Africa and Latin America are meeting with enthusiastic local participation from a variety of researchers. Partnerships are being built with local scientists and social researchers in India and Kenya and the staff and research fellows involved are being invited to become actively engaged in local initiatives. There was insufficient funding in the original proposal to include a wide range of countries in these continents. A particularly notable omission was China and we are working towards filling this gap through Lin Xia, a visiting fellow funded by the BA for three months. He is now back in China and is developing a more substantial collaboration for which we will seek funding from the Wellcome Foundation .

Teaching Programme

Innogen is setting up a teaching programme on Genomics as part of existing offerings on Science and Technology Studies. Robin Williams takes a lead on this, along with Steve Sturdy. The University of Edinburgh has funded a permanent lectureship in sociology (filled by Sarah Parry) as a contribution to these developments. We are also in discussion with the Science and Engineering and the Medicine and Veterinary Medicine Colleges, through the Innogen Inter-College Advisory Group, to develop joint teaching programmes with other colleges and also with the Law School. The Open University team is collaborating with a group developing a distance taught MBA in the Life Sciences, including: UNINTECH, Maastricht; ICRISAT, India; NEPAD and ILRI, Kenya.

Management and co-ordination across sites and projects

We have worked hard to ensure effective collaboration across the two main sites in Edinburgh and the Open Universities and to encourage collaboration with research fellows based in other universities, including Glasgow Caledonian, the University of Strathclyde and MERIT in Maastricht. We are grateful to all the colleagues involved for their enthusiasm and support.

Among the three directors, Robin Williams has taken a lead on teaching related initiatives in the University of Edinburgh; David Wield has taken a lead in the management of the components of Innogen based in the Open University including liaison with the University of Edinburgh; and Joyce Tait has led on overall integration. In addition Joanna Chataway, based at the Open University has very effectively led the work on north/south partnerships and capacity building and promoted its expansion. We are also encouraging the research fellows to organise seminars and workshops and to contribute to teaching to add to their experience and competence. However, none of this division of labour is restrictive and all staff are encouraged to respond creatively to opportunities as they arise.

5. Progress towards objectives

Objective 1: Building a strong, innovative research programme

The following staff were appointed to the Innogen projects due to begin in Year 1: Project 1, James Mittra; Project 3, Aparna Joshi; Project 4, James Smith; Project 6, Catherine Lyall; Project 7, Ann Bruce. All are progressing well and are beginning to generate working papers and to stimulate contacts with external stakeholders.

The following additional research funding has been secured and staff appointed:

- £131,000 from SHEFC Strategic Research Development Grant (total £1.8 M awarded to Professor David Porteous, 21st Century Genomic Health (21CGH)) to support two 3-year research fellows, with Graeme Laurie, AHRB Law Centre and Sarah Cunningham Burley, to work on 'Legal and Ethical Aspects' and 'Public engagement and public consultation' in relation to genetic databases.
- Innogen/ISSTI is one of three partners involved in the project 'Assessment Tools for Breakthrough and Emerging Science and Technology' (ATBEST), €200,000 total funding from the EC NEST Programme, working on nano-biotechnology.
- Scottish Enterprise Research Fellowship (£60,000) for research on 'Genomics Innovation in Scotland'. Alessandro Rossiello has been appointed for 2 years.
- ESRC Science in Society Programme, £42,600 awarded to Joanna Chataway, supplemented by £30,000 from Open University for research on 'The Nature and Institutional Impacts of North-South Partnerships in Agricultural Biotechnology', based at the Open University; Seife Ayele appointed.
- £37,000 was awarded to Professor David Porteous from Edinburgh University Professionalisation of Commercialisation Fund to look at public responses to genetic databases, specifically the Generation Scotland project. Researchers involved include Sarah Cunningham Burley, Sarah Parry, Ann Bruce, Graeme Laurie, Harry Campbell, Joyce Tait.
- Ca £120,000 has been awarded from ESRC Science in Society Programme to Andrew Lane, Susan Carr and Susan Orescyn, based at the Open University.

A major international workshop was held in London on 'Innovation, Growth and Market Structure: Biotechnology and Pharmaceuticals', co-funded by the Centre for Economic Research at the Open University. Outcomes will include a European Network of researchers working on 'Evolution of the Life Science Industry Sectors (EL SIS)', a book and contributions to Innogen's second annual conference.

Five Innogen seminars were held in this first year and several career development initiatives for research fellows have been undertaken (see Appendix 4).

Objective 2: Engage proactively with the scientific community and stakeholders

Within the University of Edinburgh, the Inter-College Advisory Group has been appointed involving senior staff, co-ordinated by Dr. Shona Kerr as part of the Medicine and Veterinary Medicine College's contribution to the Innogen Centre, to co-ordinate life science-related research and teaching activities across all three Colleges. This will contribute to linking theoretical and empirical developments in science and social sciences and to ensuring that socio-economic research is scientifically and technically well informed.

The Innogen Stakeholder Platform has been set up, currently with 18 members. We are adding to this list as prompted by research needs. Members are active in attending and contributing to Innogen conferences, workshops and seminars.

5. Progress towards objectives (continued)

Members of the scientific community regularly approach Innogen with requests to collaborate on research proposals and where appropriate we respond enthusiastically. Three proposals have been submitted on this basis, two successful.

As noted below, we have also been active in responding to requests from a wide range of stakeholders, particularly policy makers, to take part in advisory panels and workshops.

The Innogen Centre Launch held on 10th June, 2003, was attended by senior members of the social and natural science communities, policy makers and other stakeholders.

Objective 3: Shaping the socio-technical development of the life sciences.

We are actively monitoring and contributing to public and policy debates on biotechnology-related issues, particularly over the past year in the contexts of GM crops, pharmaceuticals developments, clusters and regional development, genetic databases and stem cells.

Also relevant to Objectives 1 and 2: we have been invited to give seminars and presentations at 18 workshops and conferences, and have offered presentations at 11 others; we have participated in 21 workshops and panels as a contribution to stakeholder planning and decision making.

As Innogen's contribution to Social Science Week, we organised one day's presentations at the First World Congress on Risk in Brussels, in June 2003. We also held the first Innogen Annual Conference on 'Precaution and Progress: Lessons from the GM Dialogue' sponsored by the Scottish Executive (£5000) and the Agriculture and Environment Biotechnology Commission (£3000) as a contribution to policy decision making on GM crop commercialisation. Innogen staff have also attended 40 other workshops and meetings, national and international.

In the 6th Framework Programme, we submitted an Expression of Interest for a Network of Excellence but did not follow this up, instead joining the successful PRIME Network of Excellence (€1.8 M). We will bid for modest amounts of funding from this budget. We have also taken part in EC and ESRC Workshops engaged in planning for the 7th Framework Programme.

Objective 4: To develop training programmes for postgraduate students and in service training of managers and to set up a programme of visiting fellows

A masters programme has been developed as part of the Science and Technology Studies Masters Programme the University of Edinburgh. One module (Genetics and Society) has been delivered by Innogen staff in 2003/4. The University has appointed a full time permanent lecturer located in the Innogen Centre (Sarah Parry) to run this programme.

Four doctoral studentships were awarded by ESRC in 2003. Where there was not a named applicant, we have had difficulty finding UK-based applicants to fill these vacancies and only one had been awarded up to the end of 2003. Three other students are part of the Innogen doctoral programme: an MRC-funded student who has transferred to Innogen from the MRC Human Genetics Unit at Edinburgh University; a student funded by Glasgow Caledonian University; and a student funded by the Open University.

Eight long term visiting fellows have been appointed, including staff from other universities included in the Innogen proposal. Three short term visiting fellows also joined us, including one (Lin Xia) funded by a BA fellowship (£3,500 awarded to Xiaobai Shen, Edinburgh University).

6. Main issues, problems and action taken during the year

One of the challenges in this first year of operation of the Innogen Centre has been to set up the Centre, appoint staff, develop a smoothly running management system and at the same time respond to the surfeit of opportunities for research collaboration and stakeholder engagement which we have been offered. Inevitably we have had to be selective, but we hope constructively so.

It became clear at an early date that we were short of project management support and ESRC has responded to this difficulty by adding to our original award to allow us to appoint a project manager at 60% rather than 40% time.

In August 2003, our first Project Manager left to train in a new area of work. This coincided with a period of extended sick leave for the Innogen secretary, in the key period for organisation of the Innogen Annual Conference. This combination of events created major management difficulties. However, the conference was widely acclaimed as a success and we now have an excellent new project manager.

The secretary appointed to the OU post left to move to Wales and has been replaced.

Project 4 was originally intended to begin at year 2.5 in the Innogen Programme. However it was re-phased to meet the requirements of the University of Strathclyde who had agreed to Professor Norman Clark taking on the role of PI for this project. They were concerned that he may retire before the project was completed if it did not begin in Year 1. We were able to make this change to the timescale before the budget profile was finalised in the contract negotiations with ESRC.

Another deviation from our original plan has been in the setting up of the Innogen Stakeholder Platform. Our intention was to set up two such platforms, one covering health-related applications of genomics and the other agricultural and environmental applications, with a formal but flexible membership to create an extended audience for the dissemination of research findings, discussion of their implications and, in some cases, adjustments to research programmes to increase user relevance. This approach is intended to facilitate the building of strong relationships with non-academic research users and with academic natural scientists and will provide a forum for delivery of evidence-based advice to policy makers and practitioners. When it came to choosing members of the stakeholder platform, there was no clear dividing line in some cases between the two constituencies. We therefore decided to set up a single Stakeholder Platform covering both areas and to select members for consultation and collaboration according to the relevant topic.

The only other issue we have faced has been the difficulty in filling doctoral places. There seems to be a serious shortage across all universities of potential PhD candidates who meet the UK residence requirements for an ESRC award.

7. Brief reports on research

Project	<i>Project 1: Innovation Processes in Genomics Related Industry Sectors</i>
Aims and methods of research	This project explores the nature, direction and management of innovation processes in the pharmaceutical and agro-biotechnology sectors. It seeks to increase our understanding of the complex and diverse strategies used by various actors within these sectors, as they attempt to both direct the trajectory of the science and technology, and mould the regulatory/policy environment, so that a vibrant commercial market can be sustained. This project uses a variety of qualitative methods, particularly semi-structured interviews, to explore a number of important research questions. This project contributes to Innogen's Science, Innovation and Knowledge Management theme.
Highlights of the research and important findings	Initial mapping of the pharmaceutical industry sector, and data from scoping interviews, has raised a number of important research questions concerning the future of life science based pharmaceutical innovation. Access to important databases has also been negotiated with a local contact, and this will provide an invaluable research tool for the project. A scoping report for Project 1 is now available on the Innogen website. Profiles of individual pharmaceutical and biotechnology companies have been constructed, and are being used to guide qualitative interviews.
Research staff	Joyce Tait (Principal Investigator) James Mittra (Research Fellow) <i>Associated staff:</i> David Wield, Robin Williams, Donald MacKenzie, Jane Bower
Publications	James Mittra is planning an article, with other members of Innogen, on the impact that mergers and acquisitions within the pharmaceutical/biotech sectors may be having on the life science trajectory. This article will be submitted to the 'British Journal of Management'.
Engagement with potential research users (outside the academic community)	Innogen has established a number of contacts with stakeholders in the pharmaceutical and biotechnology sectors. These stakeholders have received copies of Innogen publicity material, have been invited to Innogen workshops and conferences, and a few have received and commented on the scoping document for project 1. It is envisaged that the research outputs for year 2 will be widely disseminated to relevant non-academic audiences through conferences, workshops, electronic dissemination and newsletters.

7. Brief reports on research (continued)

Project	<i>Project 3: North-South Partnerships in Genomics and Biotechnology: Exploring Knowledge and Technology Flows in Asia and Latin America</i>
Aims and methods of research	This project examines North-South and South-South public private partnerships in agricultural and pharmaceutical related biotechnology and genomics in Asia and Latin America. Biotechnology can play an important role in economic and social development throughout the world, but a range of potentially powerful constraints may limit the potential of biotechnology to provide these benefits in less developed countries. This project aims to examine the role, efficacy and potential of biotechnology and genomics partnerships and networks to provide concrete economic, agricultural, and health benefits.
Highlights of the research and important findings	<p>Highlights of the year include development of a scoping paper for the research, identifying cases for study, organising and conducting fieldwork at ICRISAT, India and IAVI (India). The data obtained from these has been rich.</p> <p>This project is collaborating with Lea Velho of UNU Intech for conducting research in Brazil. Adriana Atkinson has joined the Project as a database consultant. She will also conduct fieldwork for 2 cases in Brazil.</p>
Research staff	Joanna Chataway (Principal Investigator) Aparna Joshi (Research Fellow) <i>Associated staff:</i> David Wield, James Smith
Publications	Joanna Chataway, Aparna Joshi, Xia Lin, 'Framing North-South Public-Private Partnerships in the Life Sciences (prepared for publication). Chataway J.C., Gault, F., Quintas, P. and Wield, D.V. (2003) 'Dealing with the Knowledge Divide', Proceedings of the <i>World Summit on the Information Society</i> , United Nations and International Telecommunication Union, Geneva, December 2003. To be published in G. Sciadas (ed.) (2003), <i>Monitoring Digital Divides and Beyond</i> , ORBICOM, Montreal.
Engagement with potential research users (outside the academic community)	Project 3 has a strong policy and developmental focus. A policy briefing paper was submitted to the Prime Minister's Strategy Unit, based on the study 'Potential UK impact of GM Crops on the Decision-Making Contexts of Developing Countries', by Aparna Joshi, Seife Ayele, Joanna Chataway and David Wield, September 2003.

7. Brief reports on research (continued)

Project	<i>Project 4: North-South Partnerships in Genomics and Biotechnology: Exploring Knowledge and Technology Flows in Africa</i>
Aims and methods of research	This project examines North-South and South-South public private partnerships in agricultural and pharmaceutical related biotechnology and genomics in Africa and aims to examine the role, efficacy and potential of biotechnology and genomics partnerships and networks to provide concrete economic, agricultural, and health benefits, within the frameworks of <i>innovation</i> and <i>scientific governance</i> .
Highlights of the research and important findings	<ul style="list-style-type: none"> • Highlights include linking up with two important research initiatives in Africa: assisting with the design of the scientific governance structures of the East and Central African Biosciences Facility and collaborating with the influential Science and Technology Secretariat of the New Partnership for African Development. • Interesting research outputs revolve around a theoretical understanding of institutional transformation of agricultural research in east Africa, and two rich case studies, one relatively successful and one less successful, of development-oriented innovation systems in Kenya.
Research staff	Norman Clark (Principal Investigator) James Smith (Research Fellow) <i>Associated staff:</i> Joanna Chataway, David Wield, Aparna Joshi
Publications	Smith, J. R. (2003) Povert, potere e resistenza: sicurezza alimentare e sovranità in Africa Meridionale, <i>Afriche & Orientali: Rivista di Studi ai Confini tra Africa Mediterraneo e Medio Oriente</i> , Bologna, 2. Smith, J. R. (2003) Frontiers and freedoms: the WSSD and the end of sustainable development? <i>South African Geographical Journal</i> , 85(2).
Engagement with potential research users (outside the academic community)	<ul style="list-style-type: none"> ○ Working with the S&T secretariat of the New Partnership for African Development on issues of scientific governance ○ Advising the Interim Steering Committee of the Biosciences Facility on issues of scientific governance and management ○ Advising the Network of International Development Organisations in Scotland (NIDOS) on science and African development ○ Advising the Scottish Labour MPs and the MSP's Interest Group on International Development on various international development issues

7. Brief reports on research (continued)

Project	<i>Project 6: The national and international policy environment for genomics</i>
Aims and methods of research	This project contributes to the “Risk, Governance and Regulation of Genomics” theme and tries to understand some of the reasons behind different national policy stances by exploring the effects of policy and regulatory instruments on agriculture and food, health and pharmaceutical developments in genomics. It is not simply about regulation but the much wider genomics-related policy arena, which includes policies ranging from morality and ethics, to efficacy and safety, and trade and industrial competitiveness. The project aims to monitor relevant policies and regulations and study their evolution. By interacting with policy makers in the UK, EU and USA and international regulatory bodies it is exploring policy development processes and the assumptions that underlie them. It is attempting to build a model of policy interactions, classifying policy and regulatory instruments, according to whether they are enabling or constraining, discriminating or indiscriminate in order to explain their impact on industry strategies. This project therefore provides a policy foundation for other Innogen projects, in particular Project 1.
Highlights of the research and important findings	During the first year a searchable database has been produced mapping policy actors across a range of governance levels and genomics-related topic areas by identifying their policy goals and “policy targets” (the objects of their policy) in order to identify policy gaps and overlaps and assess the multiple policy impacts on the innovation process. Other research outputs include a bibliographic database of policy relevant literature and contributions to a number of workshops.
Research staff	Joyce Tait (Principal Investigator) Catherine Lyall (Research Fellow), 0.4 FTE <i>Associated staff:</i> Graeme Laurie, David Wield
Publications	Lyall, C. and Tait, J., “Foresight in a Multi-level Governance Structure: Policy Integration and Communication”, <i>Science and Public Policy</i> (in press). Lyall, C. and Tait, J. (editors), <i>New Modes of Governance: Developing an Integrated Policy Approach to Science, Technology, Risk and the Environment</i> , Ashgate, (in preparation) Bruce, A. and Lyall, C., “Values and policy-making in genomics” (in preparation)
Engagement with potential research users (outside the academic community)	Key stakeholders for this project will be policy makers in the UK, EU and USA, international regulatory bodies, representative bodies, trade associations and other interest groups engaged in influencing the policy process and industry stakeholders in pharmaceutical and agricultural biotechnology firms. The “Science and the Parliament” event in Edinburgh provided an opportunity to discuss this project with MSPs and Scottish Ministers, and policy-makers from the Scottish regional development agency will take part in the joint Innogen/Cesagen workshop “Clusters and Innovation Processes in Genomics”.

7. Brief reports on research (continued)

Project	<i>Project 7: Interests and Values in risk-related stakeholder interactions</i>
Aims and methods of research	<p>Distinctions between the interests and values of protagonists in risk debates are important for the understanding, prevention and resolution of conflicts. Project 7, which contributes to the Innogen Centre's "Risk, Governance and Regulation of Genomics" theme, aims to explore the way in which values and interests motivate responses in debates in the genomics area, using case study methodology. Project aims are :</p> <ul style="list-style-type: none"> • To develop more formal methods of exploring the value and interest dimensions of biotechnology-related controversies • To explore these dimensions in areas such as the GM crop debate, genetic databases, and pharmaceutical innovation • To investigate how the "values" dimension is being incorporated into the innovation and regulation processes • To improve decision making and dispute resolution by understanding the values and interests dimension
Highlights of the research and important findings	<p>Highlights of the first seven months (equivalent working time) include:</p> <ul style="list-style-type: none"> • Extending the concept of interests and values from a model developed in GM crops to application in genetic databases • A start has been made to addressing the interesting research challenges around the definition of 'interests' and 'values' and how these concepts can be operationalised. Questionnaire methodology at the moment looks likely to be limited in scope and we are investigating the potential use of cognitive mapping techniques. • Observation and evaluation of the <i>GM Nation?</i> debate in Scotland • Preliminary interviews and analysis of 'expert' views on genetic databases • Submission of an outline research proposal to ESRC Stem Cell Research initiative on 'Role of ethical and social values in HFEA stem cell research licensing' in collaboration with SRT project, University of Glasgow and New Economics Foundation.
Research staff	<p>Joyce Tait (Principal Investigator) Ann Bruce (Research Fellow), 0.4 FTE <i>Associated staff:</i> Sarah Cunningham-Burley, Graeme Laurie, Donald MacKenzie, Barry Barnes (Egenis)</p>
Publications	<p>Bruce, Ann and Tait, Joyce "Interests, Values and Biotechnological Risk", paper presented at <i>Values in Decisions on Risk</i> Conference, Stockholm, June 9-13 (2003)</p> <p>Bruce, A. and Tait, J. "Interests, values and genetic databases", paper submitted to International ELSAGEN conference <i>Ethical, Legal and Social Aspects of Human Genetic Databases</i> (2004)</p>
Engagement with potential research users (outside the academic community)	<p>A training seminar was held for the Scottish Executive (with Joyce Tait) on 'Engaging stakeholders in the policy process: GM crops and genetic databases'.</p> <p>The main stakeholder engagement will be through a 2-day stakeholder workshop on 'Values, policy and innovation' planned for mid-March 2004. Organised in collaboration with AHRB Law Centre and the SRT Project, it will involve around 30 people from industry, policy, regulatory and social science communities.</p>

7. Brief reports on research (continued)

Project	<i>Scottish Enterprise Project 1: Genomic Innovation in Scotland</i>
Aims and methods of research	Innovation processes and knowledge management are highly relevant phenomena for the development of emerging industries such as biotechnology. In this sense, the development of a biotechnology cluster has been one of the high profile and successful initiatives undertaken by Scottish Enterprise over the past few years, lying between the advanced longstanding US model and those of the other European countries. This project undertakes an in-depth evaluation of Scottish Enterprise's policies in this area and covers a broader range of measures than traditional investment performances and cost-benefit analysis.
Highlights of the research and important findings	In the first months, attention has been focused on the structure of the different industries and sectors interested by the application of biotechnology (with a specific focus on therapeutics and diagnostics) and the role played by different actors. Specifically, we have been concerned with single actors' contributions to the process of creation and commercial exploitation of innovation. Likewise, we engaged in an extensive review and examination of the literature relating to the existence and growth of clusters and regional and national systems of innovation. This entailed an in-depth examination of both theoretical and applied works in this area, the focus being on the dynamics of industrial agglomeration in high tech industries. Finally, a number of interviews have been conducted with biotech companies operating within the cluster.
Research staff	Joyce Tait (Principal Investigator) Alessandro Rosiello (Research Fellow) <i>Associated staff:</i> Robin Williams, David Wield, Jane Bower
Publications	"Genomics Innovation in Scotland and Cluster Strategy": to be presented at the EGOS 2004 Symposium in Ljubljana next July.
Engagement with potential research users (outside the academic community)	Interactions with Scottish Enterprise representatives, sponsors of the project.

7. Brief reports on research (continued)

Project	Science in Society Project 1: Institutional Impacts of North-South Partnerships in Agricultural Biotechnology
Aims and methods of research	Agricultural biotechnology promises solutions to famine in developing countries. This study explores the processes involved in technology transfer through three in depth case studies and a snapshot database on projects involving African partners.
Highlights of the research and important findings	<p>Fieldwork on case studies in Kenya and Mali has been completed. An inventory of major institutions that are shaping African agricultural biotechnology debate and policy has been conducted.</p> <p>In collaboration with projects 3 and 4 of the INNOGEN centre, and the UN INTECH we are also setting up a snapshot database on partnership projects. The template of this database is developed, and it has been partly piloted.</p> <p>The emerging qualitative and quantitative data are indicating some interesting preliminary findings. Based on some of these findings, short summaries or synopses of topic areas are being developed (see section under 'publications').</p>
Research staff	<p>Dr Joanna Chataway (Principal Investigator) Dr Seife Ayele (Research Fellow) Associate staff: David Wield, Helen Yanacopulos</p>
Publications	<p>Publications in preparation:</p> <p>Joanna Chataway and Seife Ayele. Framing North-South Public Private Partnerships in Biotechnology</p> <p>The project team is also considering the following topic areas for publication:</p> <p>Institutional impacts of north-south public-private partnerships in agricultural biotechnology</p> <p>Biotechnology and development aid in Africa</p>
Engagement with potential research users	Seife Ayele, Joanna Chataway, Aparna Joshi and David Wield provided inputs to the Cabinet Office on their contributions to GM Nation. In particular, comments were given on the cabinet office study into the Costs and Benefits of GM and on their paper on the 'Potential UK Impact of GM crops on the decision-making contexts of developing countries: Analysis Paper'.

8. Dissemination and engagement strategy

Face-to-face dissemination and engagement

Innogen is involved in face-to-face dissemination and engagement for non-academic communities through:

- Innogen conferences and events
- the provision of evidence-based advice to industry, policy makers and public groups via the Innogen stakeholder platform
- participation in the work of strategic planning bodies
- giving presentations to stakeholder meetings
- delivering training seminars

The events in the following table included both academic and non-academic communities, thus contributing to two-way dissemination and engagement. They are only a small sample of Innogen's activities over the period of the report. The number of approaches made to Innogen staff and research fellows to give presentations at major national and international meetings, including payment of expenses, has been particularly gratifying. Overall Innogen staff gave 39 invited presentations at conferences, workshops and stakeholder-organised events; 11 papers were offered at conferences and workshops; and staff attended 35 additional workshops and meetings. The table gives an indication of the breadth and scope of activities that have contributed to the overall non-academic dissemination and engagement strategy during the past fifteen months.

Activity	Commentary	Date/Location
Innogen Launch	The launch event was held at the National e-Science Centre in Edinburgh and was attended by over 70 delegates from a wide range of stakeholder communities and senior scientists based in Edinburgh University and other Scottish Universities and research institutes	10 Jun 2003, Edinburgh
First Innogen Annual Conference	<i>Precaution and Progress: the UK GM crops debate</i> , attended by over 130 delegates from a range of sectors including industry, government, regulatory bodies, and private and public interest groups, sponsored by the Agriculture and Environment Biotechnology Commission and Scottish Executive.	13 Nov 2003, Edinburgh
First World Congress on Risk	Joyce Tait was overall organiser of events on 24 th June, Chair of the plenary lecture and presenter of the session on <i>Globalisation and GM crop development</i> (This was Innogen's contribution to ESRC Social Science Week)	22-25 Jun 2003, Brussels
Innogen Workshop	<i>Innovation, Growth and Market Structures in Biotechnology and Pharmaceuticals</i> was a multidisciplinary event attended by 67 delegates	28-29 Mar 2003, London
Stakeholder Platform set up	The Stakeholder Platform has a membership of international standing and is creating an extended audience, familiar with Innogen's programme and approach, for the discussion of current and proposed research programmes and projects, their implications and user relevance, and their effective dissemination	From 2003
Advisory Committee	Advisory Committee set up; membership drawn from a range of stakeholder and academic communities; first meeting held: agenda items included project structure, timetable and milestones; forthcoming events and activities	14 Nov 2003, Edinburgh
Invited presentations	<i>Genetic Research on Plants, Animals and People: what do scientists need to know about public concerns and policy responses</i> , Roslin Institute, Joyce Tait.	19 th June, 2003 Edinburgh

8. Dissemination and engagement strategy (continued)

Activity	Commentary	Date/Location
	<i>Bank loans, start up subsidies and the survival of new firms: An economic analysis at the entrepreneur level at CEPR conference on Entrepreneurship, Financial Markets and Innovation, Mariana Mazzucatto.</i>	20-22 Nov, 2003, Barcelona
	Scenario Workshops organised by Prime Minister's Strategy Unit as part of the <i>GM Crops Dialogue</i> , attended by Joyce Tait	2 Dec 2002, London
Participation on policy and advisory groups	<i>The use of science in international agreements</i> , presentation to the House of Lords Science and Technology Select Committee, David Wield and co-workers	16 Sept 2003, London
	UNIDO European Consultative Meeting on Biotechnology, Joyce Tait	9-12 Dec 2003, Vienna
Training seminars	<i>Risk management in policy making: the role of science and technology in evidence-based policy making in the context of transport</i> , Scottish Executive, Edinburgh, Joyce Tait and John Adams	20 Nov 2003
	<i>Integrated policy approaches in the context of GM innovation</i> , Scottish Executive, Edinburgh, Joyce Tait and Jane Bower	9 Sep 2003
Public events	<i>Biological Weapons: Where is the threat now?</i> presentation to BA 2003 meeting in Salford, David Wield	9-10 Sept 2003
	Café Scientifique presentation on <i>GM Crop Development</i> , Edinburgh International Science Festival, series organised by Sarah Parry; presentation by Joyce Tait	15 April 2003

Print and electronic media

Innogen/Genomics network Newsletter

The three research centres, Innogen, Egenis and Cesagen, are collaborating to produce a quarterly newsletter. The newsletter will draw on the activities, research and events from all three centres to produce a high-quality, current, comprehensive and fresh newsletter that will be circulated to a large, diverse, target audience. The newsletter will act to raise the profile of the Genomics Network and will be a valuable method of distributing news, research findings, discussion points, policy-changes and any other relevant information using an accessible and easily digested medium. The first issue of the Newsletter is currently being planned and compiled, under the editorship of Ginny Russell (Egenis), and it is envisaged that this will be distributed sometime in the second quarter of 2004. Editorship of subsequent issues will be rotated between the three centres.

Innogen Website

The Innogen website is a primary communication tool and is the main interface between the Innogen Centre, stakeholders, industry, interest groups and the public. The website plays a vital role in promoting Innogen, its events and activities, and providing current information on research projects and publications, presentations from workshops, and links to other related material. The Innogen website is currently undergoing a major redevelopment programme, in consultation with Egenis, Cesagen and Innogen staff, and will have improved functionality, be easier to use, easier to update, more flexible and provide a more comprehensive resource for interested parties. The website will build on the current user group and will attract and sustain a wider and more varied audience to the activities of the ESRC Innogen Centre.

Providing high quality content is essential and there is a strong commitment to future web development and improving the value of web content provided by research staff. Innogen staff will be fully involved in the website redevelopment and will be encouraged to contribute comments, ideas and content. Close liaison between researchers and the web manager will be encouraged, resulting in more regularly updated site content. Individual project sites will be developed and private areas with restricted access to upload and download material will be incorporated into the website to support interdisciplinary integration of Innogen's research and to give centre staff increased ownership of the website.

9. Capacity building and research environment

We made a deliberate management decision to build capacity early in the life of the Innogen Centre and to consolidate in the later stages of the five year first phase of the life of the Centre. This strategy was stimulated, among other things, by the number of opportunities available from research councils and elsewhere to apply for further funding.

We are building capacity in the Centre as a whole by seeking funding for new projects and posts beyond the initial ESRC award, and also accepting offers of collaboration with other research centres and units in both natural and social sciences, thus adding to the range of research skills and areas of interest represented. However, we are doing this in a highly targeted manner, based on the Innogen Integrated Policy and Governance Approach, to gather data from each of our major constituencies (science/industry innovation communities; policy makers and regulators; stakeholders and public groups) and to develop an integrated analysis of the interactions among these groups as they respond to new knowledge in life sciences and the innovation opportunities that arise from this knowledge.

We are also significantly expanding capacity in teaching at the masters level and in the provision of a programme of doctoral studentships. A new permanent lectureship in Genomics, based in the Innogen Centre, has been created by the School of Social and Political Sciences in the University of Edinburgh to support these initiatives.

In the process of bidding for funding for the Centre, capacity in one of the three thematic areas of research in our programme, on 'identity, culture and everyday life', was significantly reduced. We are attempting to rebuild capacity in this area by submitting applications for grants from other sources and also by strengthening contributions in this area to the masters and doctoral level programmes, for example through the lectureship referred to above.

The programme as initially funded had no projects that were specifically focussed on two of the major areas of genomics-related innovation, genetic databanks and stem cells. We are adding these to our areas of expertise and applying for funding from other sources, with some success so far in the area of genetic data banks and with several proposals under consideration in the stem cells area. We are also working closely with scientists in Edinburgh and surrounding research institutes, through our links with the Scottish Stem Cells Network and with scientists working on the Generation Scotland genetic databank.

Another area of significant expansion in our first year has been in 'knowledge and technology flows in Latin America, Asia and Africa'. Our researchers are collaborating with important existing institutions and also with new ventures in capacity building in these regions and are discussing potential partnerships with researchers in the countries where they are working and also with other European researchers.

Research fellows themselves are provided with a supportive environment with ready access to all senior staff involved in the Centre. They are encouraged to develop new skills and given training where necessary. They are also encouraged to expand their horizons by mutual interactions and discussions on research issues. The following activities have contributed to capacity building in this sense:

- regular lunchtime discussion groups, involving research fellows, staff and students, take place at intervals of 3-4 weeks at both Edinburgh and the Open Universities
- three day 'retreat'-type residential meetings are held at intervals of six months where all staff involved in Innogen (including visiting fellows) meet to discuss their research projects, how they are evolving, how they fit into the overall Innogen programme, how they contribute to Cross-Cutting Themes, and how the capacity of the Innogen programme as a whole is being developed

9. Capacity building and research environment (continued)

- regular research seminars take place at approximately monthly intervals in Edinburgh or the Open University – these are open meetings and bring in other interested researchers from across the host university and beyond
- the three directors meet at approximately monthly intervals to discuss issues related to management of the Centre and of its research programme, and in addition regular conference telephone calls are held
- research fellows are contributing to teaching on the masters programme
- two training workshops have also been provided for research fellows, one on the ESRC Data Archive and one providing an introduction to the science of genomics (both were set up by one of the research fellows)

Given the scale and scope of these activities over the first fifteen months of the work of the Centre, the research team, involving both Edinburgh and the Open Universities and also staff included in the Centre as visiting fellows, is beginning to operate as a coherent whole with useful cross-fertilisation of ideas and the building of new partnerships and new ideas for further research.

10. Key Performance Indicators

The list of KPIs was agreed some time after the start-up of the Innogen Centre and its research projects and so some of the indicators were not in place at the beginning of the review period. Others were not relevant to this first full year of our operation. In both cases we have inserted NA in the relevant column. We have also added a column giving our proposed targets for 2004.

In most cases where we had a performance target at the beginning of the year, we have met or exceeded it, for example:

- additional research funding beyond the ESRC grant
- research proposals under evaluation or in preparation
- number of publications across all categories
- stakeholder engagement, particularly with policy makers
- organising 2 major conferences rather than just the one Innogen Annual Conference

Positive outcomes that were not planned in Innogen's proposal include:

- additional funding from other sources, related to medical research on genetic databases and capacity building in north/south partnerships
- approaches seeking research collaboration from other researchers, particularly medical and natural scientists
- the awarding of a new lectureship in Genomics by the University of Edinburgh

11. Scientific Representation

Senior scientists contribute to the work of the Centre through representation on the Innogen Inter-College Advisory Group, through membership of the Innogen Advisory Committee and through membership of our Stakeholder Platform (see section 6).

Innogen staff are also members of the Scottish Stem Cell Network. Jane Bower is on the Advisory Committee and Joyce Tait and Graeme Laurie are members. All three were part of a delegation from the Scottish Stem Cell Network and the Royal Society of Edinburgh to meet EuroMPs and their staff at Scotland Europa in Brussels and to discuss scientific, policy and regulatory issues related to stem cell research. Jane Bower is also a member of the Scottish Science Advisory Committee.

Innogen's annual conference, on 13 November 2003, involved as speakers the scientists who had led the science review and the GM crop trials components of the UK dialogue on GM crop commercialisation. There was also a strong representation from the science community among those attending the conference.

Three of the six grant applications submitted by Innogen staff and under review up to December 2003 involved scientists as co-applicants, as did two of the eight research grants awarded.

See also Appendix 1.

12. Forward Look

As noted above in Section 9, we have adopted a strategy of active development of the Centre and its research programme for the first two to three years of the programme, focusing on the three main areas of detailed investigation (science and industry innovation communities; policy makers and regulators; stakeholders and public groups). Data from studies of each of these constituencies will contribute to Innogen's Integrated Policy and Governance Approach which analyses the interactions among these groups as they respond to new knowledge in life sciences and the innovation opportunities that arise from this knowledge. We hope to be able to add to the programme funded by ESRC in areas of genetic databases, stem cells and bio-informatics and are also planning to expand research on knowledge transfer and capacity building in Asia, Africa and Latin America.

Beyond this initial period of expansion we see the later years of this phase of the Centre's work consolidating the data gathered from research projects and disseminating the results widely, and further developing the interdisciplinary integration of the programme as a whole. We will also be actively seeking funding to provide continuity of employment for the research fellows based in the Centre, and seeking funding for an endowed Innogen Chair.

The next few years will also see continued expansion of postgraduate training at masters and doctoral levels, recruitment of further staff to support this, and development of in-service training courses for company managers and policy makers. We are planning joint postgraduate training programmes with the science-based colleges in the University of Edinburgh and also planning to link our post-graduate offerings to distance teaching initiatives in the Open University and in the University of Edinburgh (e.g. in the Law School).

We will also continue to develop Innogen's stakeholder engagement programme, expanding the coverage of the Stakeholder Platform, further developing links with researchers in North America and other European countries (the latter particularly through our involvement with the PRIME Network of Excellence).

Dissemination activities will be built up in the next few years as results begin to be available from research projects. Innogen's second international conference will be held in February 2005 in the Edinburgh International Conference Centre and will be on 'Evolution of the Life Science Industry Sectors', targeting science, industry and policy communities as well as academic social scientists and economists. The third international conference will be on knowledge transfer and capacity building in developing countries. We will continue to develop and expand our programme of visiting fellows and the workshop and seminars programmes.

We expect increasing numbers of academic publications to be produced as the research programme builds up and consolidates, and we will also be developing a series of policy briefing papers and giving presentations for policy makers and other interested parties. We will continue to use the opportunities presented by the Edinburgh International Science Festival and the Annual BA meeting to enhance our public engagement.

We are looking forward to working with the Genomics Forum in the coming years as a way of enhancing our engagement with the other components of the ESRC Genomics Network and also with wider stakeholder communities.

13. Financial Statement and Commentary

Financial Statement

The table gives details of expenditure against budget for the period 01 October 2002 to 31 December 2003.

	Budget	Spend	Variance
Staff Costs			
Research staff	162,672	154,440	-8,232
Other staff	37,682	41,189	3,507
Subtotal	200,354	195,630	-4,725
Indirect costs	92,166	89,990	-2,176
UK T&S	19,910	25,863	5,953
OS T&S	19,910	21,239	1,329
Consumable Items	13,368	17,308	3,940
Exceptional Items	20,889	28,831	7,943
Equipment	13,664	12,187	-1,476
Subtotal	179,907	195,418	15,511
TOTAL	380,261	391,047	10,786

a = budget is based on the original budget provided by ESRC prior to commencement of the project and does not include the cash limit reduction, due to an incorrect claim submitted at the end of March 2003, that had been imposed by ESRC but has now been revoked.

b = budget includes an additional £7,030 to cover salaries and related costs of an increase in project manager hours from 14 to 21 per week from April to December 2003, as agreed with ESRC.

c = budget includes an additional £3,237 to cover indirect costs associated with the increased project manager hours

Commentary

Innogen spend from October 2002 to December 2003 was 2.8% (£10,786) more than budget.

Salaries and indirect costs were underspent by 4.0%. This is principally due to a salary increase accrual for research staff that has not yet been agreed and is still to be paid; an increase of, for example, 3% would result in a salary spend for research staff of £159,073 rather than £154,440, which is much closer to budget (98% of budget).

Although some of the remaining individual budget headers appear significantly over or underspent, Innogen has been working towards a financial year of Apr 2002-Mar 2003, whereas the period covered in this report is Oct 2002-Dec 2003. This has resulted in some spurious artefactual variances for this period that will even out by the end of the financial year.

Appendix 1 Highlights

We have chosen three highlights to present here for possible inclusion in the RPB Report to Council. All three relate primarily to communication and engagement activities but they are based on considerable external interest in our scientific and integrative approaches and the advances likely to arise from it. These highlights also arise from synergies across different areas of our expertise and experience, rather than from discrete items of work.

1. UK GM Crops Dialogue

Based on the previous research on the agro-biotechnology industry, policy development and public attitudes to GM crops by several members of Innogen, we were actively involved in the UK GM Crops Dialogue during 2003.

This 'dialogue' represented an attempt by the UK government to link evidence-based approaches to policy with public and stakeholder engagement on an unprecedented scale. Considerable debate and discussion surround this series of activities which is seen by some as having broken the mould of British politics, setting the scene for treatment of similar issues in the future, and by others as 'never to be repeated'.

Components of the dialogue included a large scale public debate, GM Nation?, a cost benefit study, a review of GM science and the risks posed by GM crops, a report on co-existence of GM crops with conventional and organic farming systems, and a series of farm-scale evaluations of the impact of herbicide resistant oilseed rape, sugar beet and maize on biodiversity.

Joyce Tait was invited to join the working group organised by the Cabinet Office Strategy Unit to comment critically on the cost benefit study as it developed and also took part in the scenarios organised by the Cabinet Office. Seife Ayele, Joanna Chataway, Aparna Joshi and David Wield provided inputs to the Cabinet Office cost benefit study and in particular submitted detailed comments on the 'Potential Impact of GM crops on the decision-making contexts of developing countries: Analysis Paper', and Joyce Tait and Ann Bruce collaborated with the University of East Anglia group funded by ESRC to monitor the GM Nation? debate.

A major impact was achieved by the first Innogen Annual Conference on *'Precaution and Progress: Lessons from the UK GM Crops Dialogue'*, held in Edinburgh in November 2003. This was sponsored by the Scottish Executive and the Agriculture and Environment Biotechnology Commission and included presentations from senior experts involved with all the major strands of the Dialogue, followed by an extended discussion led by representatives from key stakeholder groups. It has been the only meeting to have brought together such a wide range of groups and expertise to discuss the issues raised by the dialogue.

The conference was asked to address the following questions: to what extent should the interests and values of one stakeholder group be allowed to constrain the options available to others; should strength of feeling be a relevant factor - should one 'don't care' vote be given less weight than a strongly held opinion; does the availability of consumer choice change the decision parameters, for example where GM foods are labelled and the public can choose whether to buy them or not does the government need to step in and take such decisions on our behalf?

A journalist was commissioned to write the conference report in language easily accessible to policy makers and the report was sent to the relevant government departments in advance of the decision on commercialisation of GM crops. The report was also sent out to all participants at the conference and to Innogen Stakeholder Platform and Advisory Committee members. It is also available on the AEBC and Innogen websites.

Appendix 1 (continued)

2. Research on North-South knowledge and technology flows

Important highlights this year have been the development of solid collaborations with a wide range of research and policy institutions and production of early policy-oriented results.

We have been particularly successful in building up significant international partnerships. With the United Nations Institute for New Technology (INTECH) in Maastricht, we are developing a joint database on North-South biotechnology partnerships and we have agreed to undertake joint fieldwork in Brazil with INTECH's Dr Lea Velhu. Joint fieldwork has also begun on agricultural genomics with the International Crop Research Institute for the Semi-Arid Tropics (ICRISAT), India, with the International Livestock Research Institute in Kenya, and with the International Aids Vaccine Initiative (IAVI), India.

We were successful in attaining a British Academy Visiting Fellowship for Xai Lin (Chinese Academy of Social Sciences) to visit in late 2003. Dr Xiaobai Shen, University of Edinburgh, applied for this award. As a result we have designed a research programme in partnership with that organisation and Research and Information Systems for Developing Countries New Delhi.

Links have been cemented with the New Partnership for African Development (NEPAD) Science and Technology Secretariat and with the East and Central Africa Biosciences Facility, where we are assisting with the design of scientific governance structures.

As described in the first item in this section, a Policy briefing was submitted to the Prime Minister's Strategy Unit on the study 'Potential UK Impact of GM Crops on the Decision-Making Contexts of Developing Countries'. Advice has also been given on Science and African development to the Network of International Development Organisations in Scotland , and the MSPs' Interest Group on International Development.

Appendix 1 (continued)

3. Engagement with science and policy communities

Engagement with the scientific community and with medical researchers and practitioners, across a broad range of issues, has been an important and very rewarding feature of Innogen's first year. These joint activities have been stimulated by a variety of routes – as a result of the setting up of the Innogen Centre and recommendations by ESRC staff, through our own activities in making contact with potential stakeholders and other collaborators, and based on our previous track record as researchers and policy advisers working in relevant areas. Taken as a whole, we believe this amounts to a body of achievement worthy of highlighting. The following is a short selection from relevant contributions.

Joint research

In addition to the research funded through the ESRC grant to Innogen, the following awards involve collaboration with scientists and policy makers: a £60K project funded by Scottish Enterprise; £131K from a SHEFC grant awarded to Professor David Porteous (shared equally with the AHRB Centre for Intellectual Property and Technology Law) for research on the Generation Scotland and BioBank genetic databases, preceded by a smaller pilot grant from the Edinburgh University Professionalisation of Commercialisation Fund. We were also approached by a team of scientists whose proposal to the BBSRC Stem Cells Initiative had been shortlisted and asked to contribute to the full proposal

Participation in science and policy related advisory bodies and committees.

Joyce Tait has been asked to join the DEFRA Research Priorities Group on Sustainable Food and Farming (2003-06), advising government on priorities for funding in this area in the next 5-15 years following from the Currie Report.

Presentations to local, national and international conferences and workshops with science and policy-related audiences

Innogen staff have given seminars to scientists at the Roslin Institute, to medical staff working on the Dundee Health Database Programme, and to the Edinburgh Bio-Informatics Network. We also contributed to a public event organised by the Royal Society of Arts in Scotland, and to the Cafe Scientifique series at the Edinburgh International Science Festival. Along with the AHRB Law Centre, we took part in a delegation to Brussels organised by the Royal Society of Edinburgh and the Scottish Stem Cells Network (SSCN) (three senior Innogen staff are also members of the SSCN, one being a Board member). Innogen also organised and chaired a workshop on *Social Issues* at the MRC Conference on *Stem Cells – Shaping the Future*. Joyce Tait was also asked to present a paper and chair a session at the UNIDO European Consultative Meeting on Biotechnology.

Open University Innogen staff were invited to present a paper on policy integration to the House of Lords Science and Technology Select Committee on the use of science in international agreements and the paper was formally submitted as evidence to the select committee enquiry on this subject. Joanna Chataway took part in a workshop in Berkeley, California to discuss the Novartis/Berkeley research agreement, and David Wield was a member of a team evaluating the Swedish International Development Agency's support to research in Mozambique.

Innogen's contribution to Social Science Week, 2003 involved organisation of one day of the programme of the First World Congress on Risk, held in Brussels. The programme for this day included a debate between Dr. John Graham, risk analyst and senior adviser in the Office of Management and Budget to President George W. Bush and Commissioner David Byrne, EC DG Health and Consumer Protection. Presenters and participants at the World Congress included scientists involved in risk analysis and policy makers from a wide range of application areas.

Training seminars for Scottish Executive policy makers

As part of a series that is now in its third year of delivery, Innogen staff gave four lunch-time seminars to policy makers in the Scottish Executive. The general theme is 'new approaches to governance and policy integration' with each seminar focusing on a specific area of policy delivery. Topics covered included: *Genomics Innovation; Engaging stakeholders in policy processes – GM crops and genetic databases; Environment; and Transport.*

**Appendix 2
Staff Employed**

Innogen employees

Name	Title	Date(s) employed	Effort on project (%)
Joyce Tait	Director	Oct 02	100
Juliet Miller	Project Manager (University of Edinburgh)	Feb-Sep 03	55
Julie Hamilton	Project Manager (University of Edinburgh)	Nov 03	60
James Smith	Research Fellow	Apr 03	100
Ann Bruce	Research Fellow	Oct 02	40
Aparna Joshi	Research Fellow	May 03	100
Catherine Lyall	Research Fellow	Oct 02	40
James Mittra	Research Fellow	Feb 03	100
Lorna Mitchell	Secretary (University of Edinburgh)	Feb 03	100
Pauline O' Dwyer	Secretary (The Open University)	Oct 02-Sept 03	75
Marlene Gordon	Acting Secretary (The Open University)	Oct 03	75

Appendix 3 Publications

Published and in press

- 1 Bruce, A., Lyall, C., Tait, J. and Williams, R. (in press) Interdisciplinary Integration in Europe: the case of the Fifth Framework Programme. *Futures*. (see also Innogen Working Paper 3, www.innogen.ac.uk)
- 2 Lyall, C., Bruce, A., Firn, J., Firn, M., and Tait, J. (in press) Assessing End Use Relevance of Public Sector Research Organisations. *Research Policy*.
- 3 Smith, J. R. (in press). Impacts of subsidies and unfair trade on developing country agriculture in Hester, R. (ed), *Modern Agricultural Practises*.
- 4 Tait, J. (in press) Opposition to GM Crop Technology in Europe. *SciDevNet*.
- 5 Tait, J. and Bruce, A. (in press) Global Change and Transboundary Risks. In eds. T. McDaniels and M. Small, *Risk Analysis and Society: an interdisciplinary characterisation of the field*; Cambridge University Press.
- 6 Tait, J. and Chataway, C. (in press) Risk and Uncertainty in Genetically Modified Crop Development: the Industry Perspective. *Environment and Planning – C*. (see also Innogen Working Paper 1, www.innogen.ac.uk)
- 7 Bruce, A. and Tait, J. (2003) Interests, Values and Biotechnological Risk. *Proceedings, VALDOR, 2003, Values in Decisions on Risk*, Stockholm, Sweden, June 13-19, 2003 (see also Innogen Working Paper 7, www.innogen.ac.uk).
- 8 Chataway, J., Gault, F., Quintas, P. and Wield, D (2003) Dealing with the knowledge divide, in Sciados, G. (ed.) *Digital Divides and Beyond*, Orbicom, Montreal.
- 9 Laurie, G. (2003) *Intellectual property protection of biotechnological inventions and related materials*, Innogen Working Paper 4.
- 10 Mazzucato, M. Risk, Variety and Volatility: Innovation, Growth and Stock Prices in Old and New Industries. *Journal of Evolutionary Economics*, Vol. 13 (5), 2003: pp. 491-512.
- 11 Mitra, J. (2003) *Innovation processes in genomics industry sectors*, Innogen Working Paper 5, www.innogen.ac.uk.
- 12 Parry, S. The Politics of Cloning: Mapping the Rhetorical Convergence of Embryos and Stem Cells in Parliamentary Debates. *New Genetics and Society* 22 (2), (2003).
- 13 Smith, J. R. (2003) Frontiers and freedoms: the WSSD and the end of sustainable development? *South African Geographical Journal*, 85.
- 14 Smith, J. R. (2003) Povert, potere e resistenza: sicurezza alimentare e sovranità in Africa Meridionale, *Afriche & Orientali: Rivista di Studi ai Confini tra Africa Mediterraneo e Medio Oriente*, Bologna, 2.
- 15 Smith, J.R. (2003) *Poverty, Power and Resistance: Food Security and Sovereignty in southern Africa*. Innogen Working Paper 6, www.innogen.ac.uk.
- 16 Tait, J. and Lyall, C. (2003) *ESRC Funded Interdisciplinary Research: Advice for Applicants*. Report to Economic and Social Research Council.
- 17 Vogel, C. H. and Smith, J. R. (2003) Acqua in una arida: acqua, sete e sviluppo lungo l’Africa Australe, *Afriche & Orientali: Rivista di Studi ai Confini tra Africa Mediterraneo e Medio Oriente*, Bologna, 4.
- 18 Mazzucato, M and Geroski, P. Learning and the Sources of Corporate Growth. *Industrial and Corporate Change*, Vol. 11 (4), 2002: pp. 623-644.

Appendix 3 (continued)

- 19 Tait, J. (2002) The US, Europe, Precaution and Risk Management: Foods Derived from Biotechnology. In eds. Koen Verlaeckt and Virginia Vitorino, *Unity and Diversity: the contribution of the social sciences and the humanities to the European Research Area*. Office for Official Publications of the European Communities, L-2985, Luxembourg, EUR 20484, pp 198-201.

Publications submitted

- 1 Chataway, J., Tait, J. and Wield, D. *Understanding company R&D strategies in agro-biotechnology: Trajectories and Blindspots*. Submitted to *Research Policy*. (see also Innogen Working Paper 2, www.innogen.ac.uk)
- 2 Misselhorn, A., Vogel, C. and Smith, J., 'Land use cover change and rural poverty in the community of Makgori, South Africa'. Submitted to the *South African Journal of Science*.
- 3 Mitra, J. *The Use and Abuse of Biology: Eugenics, Evolutionary Psychology and the Future of Social Science*. Submitted to *Social Epistemology*.
- 4 Mazzucato, M. Competence Destroying Innovations and Industry Market Structure. Submitted to *Strategic Management Journal*.
- 5 Smith, J. R., 'Tales of tenderness and power: evolving social capital in a southern Kalahari community, South Africa'. Submitted to *Development Southern Africa*.
- 6 Smith, J. R., 'Invisible livelihoods: poverty, productive activity and risk aversion in the Northwest Province, South Africa'. Submitted to *Journal of Contemporary African Studies*.
- 7 Smith, J. R., 'Modernity, technology and resistance: genetically modified maize, famine and politics in southern Africa, 2001/03'. Submitted to *Review of African Political Economy*.

Book contracts

- 1 Lyall, C., and Tait, J. *New Modes of Governance: Developing an Integrated Policy Approach to Science, Technology, Risk and the Environment* (Ashgate).
- 2 Mazzucato, M. *Firm Growth Dynamics: A Random Walk or a Structured Stroll?* (in negotiation with Princeton University Press).
- 3 Mazzucato, M (with G. Dosi). *Creative Destruction in High-Tech Industries: The Case of the Biotech-Pharmaceutical Industry* (in negotiation with Cambridge University Press).
- 4 Smith, S. Contract for a review chapter of unfair trade and African agriculture in *Modern Agricultural Practices*. (Royal Society of Chemistry Press)
- 5 Tait, J (in preparation). *Regulating Pesticides and Biotechnology: the Banned Wagon*. Earthscan.

Articles in preparation

- 1 Mazzucato, J. *A Sectoral Taxonomy of Innovation and Stock Prices*.
- 2 Mazzucato, J. *Scaling Company Growth Rates: Personal Computers and Pharmaceuticals*.
- 3 Mitra, J. *Genetic Information and the Life Assurance debate in the UK: A Need for Rational and De-Politicised Policymaking*.
- 4 Mitra, J. *The Use of Citizens' Juries in Policymaking: Harnessing the Deliberative Reasoning Capacities of Lay Publics in Areas of Controversial Science*.

Appendix 3 (continued)

- 5 Mitra, J. *Stakeholder Accounts of the Genetics and Insurance Dilemma: How Interest Groups have Manipulated the Boundaries of the Debate Through their Interview Talk.*
- 6 Parry, S. *Separating Therapeutic and Reproductive Cloning: The role of Discursive Boundaries in the Stem Cell and Cloning Debates.*
- 7 Parry, S. *(Re)Constructing Embryos: A Comparison of Fertility and Patient Support Groups.*
- 8 Parry, S. *Destabilising Nature? Renegotiating Cultural Categories in the Stem Cell Research and Cloning Debates.*
- 9 Smith, J. *The architecture of aid and biotechnological research and development in East Africa.*
- 10 Smith, J. *Joined-up innovation: the development of the East Coast Fever vaccine in Kenya.*
- 11 Smith, J. *The justice of eating: supply-side and demand-driven approaches to conceptualising food security in sub-Saharan Africa.*
- 12 Tait, J., Chataway, J. and Wield, D. *Policy Interactions with Industry Strategies.*

Appendix 4 Training and Career Development for Contract Research Staff

Title	Content	Date: No of days
Innogen Spring Retreat	The Spring Retreat provided an opportunity for staff to introduce the projects, discuss research strategy, explore the three cross-cutting themes, Globalisation and Governance, Public Engagement with Science and Legal and Ethical Aspects and plan future events and initiatives	18-20 March 2003: 3 days
Innogen Autumn Retreat	The Autumn Retreat focused on project updates and future plans and activities	9-10 October 2003: 2 days
Innogen Seminar Series	"Do bio-pharmaceuticals offer a therapeutic advance over small chemical drugs?" – Anthony Arundel, MERIT, University of Maastricht and Innogen Visiting Fellow	12 June 2003: ½ day
	"Experts, Non-experts and the Politics of GM Food" – Peter Robbins, Lecturer in Sociology, Cranfield University	16 September 2003: ½ day
	"The utility of genomic knowledge: patenting and commercialisation" – Jane Calvert, Research Fellow, Egenis, University of Exeter	15 October 2003: ½ day
	The work of the BIOS Centre. Dr Pat Spallone, Associate Director, BIOS: Centre for the Study of Bioscience, Biomedicine, Biotechnology and Society, London School of Economics and Political Science	3 November 2003: ½ day
	Regulating Biotechnology in the Name of Security – Professor Judith Reppy, Professor, Science Studies Unit, University of Edinburgh (based at Department of Science & Technology Studies, Cornell University)	20 November 2003: ½ day
Data Archive Workshop	Run by The Economic and Social Data Service, this workshop covered data archiving, confidentiality, Data Protection Act, data collection and copyright of data	28 November 2003: ½ data
A Whistle-Stop Tour of Biotechnology	Workshop run by Dr Joanna Oliver of ijknowledge to give an overview of current biotechnology practices and direction	17 December 2003: 1

Appendix 4 (continued)

Title	Content	Date: No of days
Edinburgh University Career Development Strategy	<p>Edinburgh University is committed to the development of staff to enable them to become more effective in their work and is committed to the creation of development opportunities for all categories of staff. The University is committed to the provision of development on a continuing basis.</p> <p>The University has also already addressed most if not all of the recommendations of the Concordat and more recently those of the Research Careers Initiative, ensuring that a range of training and development and career development support is available to researchers. In the light of further Research Careers Initiative (RCI) developments this work will need to be extended to ensure that research staff, at different stages of their careers, from first post-doc through to Principal Investigator, are provided with appropriate advice to help them maximise their potential in each of these distinctive roles, and to help them manage each of these career transitions effectively.</p>	–
Open University Career Development Strategy	The Open University has addressed all recommendations of the Concordat and has contract staff representation on all relevant research and career development bodies.	
Career Planning and Review (CPR) Scheme for research staff	<p>The CPR Scheme ensures that ongoing support is provided to research staff in the two key areas of career planning and professional development.</p> <p>The Scheme helps researchers to consider their future career ambitions, identify any additional skills they may need to acquire to help them achieve those ambitions and find the best ways of acquiring those skills.</p>	-

Appendix 5 Key Performance Indicators: October 2002 – December 2003

Group 1: RESEARCH PROJECTS	Target	Achieved	2004 Target
1.1 Research projects commenced	5	5	2
1.2 ESRC core funding	£369,994	£380,261	£420,163
1.3a Funding from other sources to Dec 2003	£398,415	£464,189	£100,000
1.3b Additional funding for subsequent years	£100,000	£325,113	£100,000
1.4-5 Proposals under evaluation/in preparation	£400,000	£781,004	£400,000
1.6 Research collaborations	2	5	5
Group 2: TEACHING AND STUDENTSHIPS			
2.1 Lectureships	NA	1	1
2.2 Courses set up and running	1	1	2
2.3 Innogen staff involved in teaching	5	9	9
2.4 Research students/supervisors	NA	2/4	2
2.5 In-service training for policy makers and managers	NA	NA	1
Group 3: MANAGEMENT, ADMINISTRATION AND STAFF			
3.1 Advisory bodies set up and running	3	3	3
3.2 Management meetings	1 per month	1 per month	12
3.3 Advisory committee meetings	3	1	2
3.3 Dedicated research staff	3.0 FTE	2.67 FTE ^a	4.8 FTE
3.4 Associated academic staff	0.8 FTE	1.0 FTE	1.0 FTE
3.5 Support staff	1.9 FTE	1.9 FTE	2.4 FTE
3.6a UK and EU Visiting fellows	NA	6	4
3.6b International Visiting fellows	2	4	4
3.7 Edinburgh and Open University staff contributing time to Innogen	2.65 FTE	2.93 FTE	3.4 FTE
3.8 Innogen retreats	2	2	2
3.9 Staff development workshops	1	2	2
Group 4: PUBLICATIONS			
4.1 Refereed journal articles published and in press	7	12	8
4.2 Refereed journal articles submitted	5	7	8
4.3 Books	NA	NA	2
4.4 Book chapters published or in press	3	5	5
4.5 Working papers	6	12	8
4.6 Conference report	1	1	NA
4.7 Newsletter	NA	NA	2
Group 5: EXTERNAL RELATIONS			
5.1 Invited presentations at major conferences or workshops	3	18	10
5.2 Offered presentations	NA	11	10
5.3 Participation in policy, advisory and stakeholder groups, policy briefs submitted	5	21	10
5.4 Conferences/meetings attended	NA	35	20
5.5 Website developed and updated regularly	1	1	NA
5.6 Website redeveloped	NA	NA	1
5.7 Number registered on website	NA	NA	100
Group 6: INNOGEN EVENTS			
6.1 Innogen Launch	1	1	NA
6.2 Conferences	1	2	1
6.3 Workshops	NA	2	6
6.4 Seminars	NA	6	12

a = Figure takes account of start date, which in most cases was after commencement of the project.

Appendix 6 Budget Information

Total ESRC budget for year £380,261

Budget by head

	<u>Budget</u>	<u>Spend</u>	<u>Variance</u>
Staff costs	36,165	35,312	-853
Indirect costs	16,636	16,244	-393
T&S	7,188	8,502	1,314
Consumables	2,413	3,124	711
Exceptional items	3,770	5,204	1,434
Equipment	2,466	2,200	-267

Total co-funding with sources

<u>Source</u>	<u>Target</u>	<u>Achieved</u>
University of Edinburgh and the Open University	240,844	197,268
In kind contributions from Stakeholders	67,500	53,750
Scottish Enterprise	60,000	60,000
In kind contributions from visiting fellows	30,071	30,071
ESRC Science in Society and Open University - Joanna Chataway and Seife Ayele	NA	72,600
Edinburgh University Professionalisation of Commercialisation	NA	37,000
Scottish Executive	NA	5,000
AEBC	NA	3,000
BA	NA	3,500
SciDevNet	NA	2,000
 TOTAL	 <u>398,415</u>	 <u>464,189</u>

Appendix 7 Policy/Process Issues

We have been led to understand that ESRC puts a strong emphasis on stakeholder engagement, in particularly engagement with policy makers. However, beyond the summary information we have been able to include in Sections 4, 5 and 8 and in the Highlights in Appendix 1, the report format does not give an opportunity to list all the relevant engagement activities we have undertaken over the period of the report.

One option in future years may be to include an additional section in Appendix 3 where such activities could be itemised. Otherwise, there is a possibility that, because they are not specifically monitored, such activities will be given less attention by Centre and Programme staff.