International Workshop on Accountability Challenges:
Choosing the Right Direction
Summary Report

Workshop Held on June 19-21, 2008
Liverpool, United Kingdom

Purpose
The primary purpose of the Workshop was to present and discuss strategies to address accountability challenges using case studies and discussing best practices. The Workshop agenda is contained in **Appendix A.**

Invitees
Invited persons were mainly people who have responsibility for operating programs that prevent and detect fraud, waste, and abuse in government- funded science and engineering programs. In addition, research universities and institutions were represented. International attendees and their affiliations are listed in **Appendix B**.

Overview
Co-hosts of the Workshop were Christine Boesz, Dr.PH, Inspector General of the National Science Foundation (NSF) [USA], and Stuart Ward, Director of Corporate Services, Engineering and Physical Sciences Research Council (EPSRC), United Kingdom (UK) in Liverpool.

In welcoming the attendees, Dr. Boesz introduced the topics that would be discussed during the two and a half days, with the focus on internal audit, risk assessment and management, and audit strategies. Stuart Ward also welcomed the attendees to Liverpool and to the Workshop.

The remainder of the agenda was devoted to 1) evaluating and managing risks, 2) general auditing and internal control issues, 3) information technology security issues, and 4) misconduct in research allegations. The language for communication was English.

NARRATIVE SUMMARIES
The following narratives are summaries only. Please refer to the accompanying compact disk to view full presentations in PowerPoint or PDF format. Also, the presentations are available on line at http://www.nsf.gov/oig/sri.jsp

An Overview of Science and Engineering Research in the United Kingdom
Mr. Ward outlined the structure and funding of Research in the UK. He explained the role of the UK Research Councils as the main public investors in fundamental research and its support for basic, strategic and applied research, postgraduate training as well as providing access to large facilities, undertaking public engagement activities, maximizing the impact of investments on the economy, public policy, services and culture. He also outlined how and where research is undertaken as well as the main priority research themes within the UK such as Energy and Digital Economy.
[Presenter: Stuart Ward, Director Corporate Services, Engineering and Physical Sciences Research Council (EPSRC), United Kingdom]

European Commission Audit Policy and Audit Strategy
Summary of the presentation on the new Audit Strategy of the European Commission

The presentation had two objectives: 1. To explain to the audience why auditing has become a priority for the Commission, given the fact that the Commission is accountable before the discharge authority (the Council and the European Parliament) 2. To explain how the Commission can achieve this accountability for Framework Programme 6 (FP 6).

It was explained in what political and administrative context, the research expenditure under FP 6 was done. Contrary to other expenditure, the research expenditure is direct expenditure for the Commission, directly from Brussels to the single beneficiary. It implies that the Commission is fully accountable. Moreover, this area of expenditure has never obtained a positive discharge from the European Court of Auditors. This is because the error rate (number of errors compared to the total expenditure) is too high. Partly it is understandable why there are errors: the regulations are complex, there is a heterogeneous population in a variety of sectors to which the grants are given and the basis of reimbursement remains the actual eligible costs. With this principle, a number of difficulties that auditors may encounter when on beneficiaries' premises were outlined.

The error rate is nevertheless important in the context of accountability in the Commission. Indeed, a Director General is to sign a Declaration of Assurance in annex to his/her Annual Activity Report stating that he/she has reasonable assurance that his expenditure was done in line with the principles of sound financial management and that necessary guarantees were in place concerning the legality and regularity of the underlying transactions.

In the beginning of 2007, for the year 2006, the Director General of Research admitted to not having this reasonable assurance. Hence, the search was on for a new and soundly based audit strategy. The Commission was criticized by the European Court of Auditors for insufficient controls, limited audit coverage and lack of representative controls, and all this with an error rate that remained high.

This new audit strategy, corporate for the Commission, is conceived around three strands:

1. The first strand concerns the top-beneficiaries representing the top 40 % of the expenditure – for these beneficiaries. The possibility for extrapolation is noted meaning that if in the audited contracts a systematic, material error is identified, it is assumed that the same error will also be present in the non-audited contracts and, hence, the contractor will be requested to revise his/her cost statements for the past financial period. Compliance with this will be audited during follow-up audits.
2. The second strand concerns the remaining 60 % of the expenditure for which a representative sample has been drawn.

3. As an additional layer, there is a third strand: the risk-based audit after a risk assessment of the population. The aim of this audit strategy is to have a more representative error rate and a more important corrective leverage effect.

It is correct to acknowledge that this new audit strategy constitutes an unprecedented change in the Commission's control strategy for this type of expenditure. More human resources, more audit coverage, and more audits are key for this new strategy. It is believed that the current new audit strategy for FP 6 will equally constitute a sound basis for the FP 7 audit strategy.
[Presenter: Marc Bellens, European Commission, Belgium]

Summary of the presentation on Certification & Outsourced audits

Certification: Core activities of the Directorate General for Research (RTD) are the selection and implementation of research projects and the execution of related payment procedures. In order to ensure that payments are executed in line with all requirements, Financial Officers scrutinize all financial statements with which research organizations use to request payments. This desk review is one of RTD' key controls. As a result of internally or externally induced modifications of its strategy and/or core activities, RTD had to adjust its internal control system occasionally to make sure that its key controls still adequately cover underlying risks.

The last framework program (FP6) entailed a considerably increased budget. In order to cope with the workload, an additional control mechanism was introduced: Beneficiaries were obliged to have their financial statements accompanied by a certificate of an external audit firm, basically stating that in the opinion of the external audit firm the financial statements were free of non-eligible costs. However, both the Court of Auditors and the auditors of the European Commission saw a number of cases in which the certifying auditor had issued an unqualified opinion whereas in the financial statements serious errors were found.

In order to further improve the reliability of the internal control system, in the new framework program (FP7) a second type of certificate was introduced, the Certification on Methodology (CoM). The CoM specifically addresses the calculation of those cost categories which are known to be the main source of error, i.e. personnel and indirect costs. In contrast to the certification on the financial statements, the external audit firms shall not provide an opinion but rather provide a defined set of information, based upon which the Commission will either accept or reject the beneficiaries' method of calculation. The objectives are to resolve the most recurrent errors observed in the past right from the outset («fix the future»), to reduce the overall number of certificates, thereby reducing costs, and to streamline on-the-spot audits which can limit their scope to compliance with the certified methodology.

Beneficiaries that wish their methodology to be certified need to have a reliable system of time recording in place, need to make use of a sufficient number of staff categories for calculating their personnel average costs, and need to have an analytical accounting system in place with full-fledged methods to assess indirect costs.

Outsourced audits: RTD has recently created a unit with the dedicated task to manage and monitor all outsourced audits. The total number of outsourced audits has already considerably increased and will even increase further in the near future. Internally, workflows and timelines have been implemented as well as elaborate quality control procedures; however, the achievement of challenging targets heavily depends upon the proper functioning of the contracted service providers. In the past, RTD has made the experience that some service providers were severely underperforming, especially with regard to keeping the deadlines. Delivery of audit reports behind schedule can have severe consequences for the Directorate General, as in case that an insufficient number of audits has been finalized, causing an insufficient coverage of the budget, the Director General has to make a reservation in its annual Declaration of Assurance which is part of the Annual Activity Report. In the Declaration of Assurance it is stated that all funds have been used for their intended purpose and in accordance with the principles of sound financial management. Any reservation in this declaration is critically eyed by the public.

In order to facilitate the monitoring of outsourced audits and to increase the pressure on external audits firms to deliver all audit reports in due time, RTD on the one hand always asks for the performance of a batch of audits, and on the other hand contractually arranges for a clause on liquidated damages. A batch of audits may comprise up to 100 audits which have to be completed in a defined period. In case that not all of the audits are completed in time, the clause on liquidated damages stipulates that the audit firm has to repay a certain percentage of the total invoice amount for each day overdue. Therefore, in combination with the total batch size («leverage effect») the worst case of delay will determine the amount of liquidated damages. Together with improved monitoring tools, this clause on liquidated damages has considerably reduced the number of outsourced audits which are not completed in time.
[Presenter: Marcel Magnus, European Commission, Belgium]

Evaluation Activities at the European Science Foundation: An Update

Alexis-Michel Mugabushaka gave an update of Evaluation Activities at the European Science Foundation. The presentation referred to the evaluation of ESF as a research organization (i.e. assessment of its activities, overall strategy and scientific bodies etc …) and not the Evaluation by ESF (such as how ESF assesses and selects grant proposals or how ESF appointed panels evaluate external activities).

Prior to 2004, evaluation of ESF included mainly the reviews of its standing committees (requested by the statutes). Following the adoption of the current strategic plan (2006-2010), a change in the statute instituted the so called “Policy Audits” by means of which ESF Governing Council can “review key aspects of the operations of the ESF Office”. Recent evaluation exercises include (1) the Evaluation of the European Young Investigator Award Scheme (EURY); (2) the review of the European Collaborative Research Scheme (EUROCORES Scheme) and (3) a study on the views and experiences of applicants to ESF funding schemes.

In 2008, ESF will launch a study on the satisfaction of its member organizations and the Standing Committees will be reviewed in 2009.

Dr. Mugabushaka also informed the workshop about current and planned activities of the ESF Member Forum on evaluation of funding schemes and research programmes. This forum, launched in 2007, serves as platform for exchanging and documenting experiences with current practices in research organizations and facilitating networking of officials engaged in evaluation. ***[Presenter: Alexis-Michel Magabushaka, Science Officer, European Science Foundation, France]***

Networking-Science or Art

The discussion focused on ways that networking could be more formalized among person responsible for accountability. The challenge is a difficult one. At present, meetings, workshops, and other routine gatherings seem to be the best ways to foster networking. In short, art won out over science.

{Facilitator & Discussion Leader: Christine C. Boesz, Inspector General, National Science Foundation, USA}

Performance Indicators (DFG)

Performance indicators should be part of a management information system that facilitates the information and decision making needs of senior executives. The performance indicators should measure the achievement of the organizational goals. This presentation analyses, if the balanced scorecard is a useful instrument for science funding organizations as a kind of non-profit organizations. It will show a possible balanced scorecard model for the DFG and compare this model with the currently performed reporting system.

The Balanced Scorecard

The balanced scorecard is a strategic planning and management system as well as a performance measurement framework. In the centre of this system we have the vision and the strategy of an organization. The strategic plan can be translated in operative goals in four perspectives. These perspectives comprise the financial perspective, the customer relations, the internal business processes and the development of human resources. In this perspective the balanced score card helps to define the targets to be attained and the measurements with which we can control our progress.

Non-profit-organizations have as primary goal the fulfillment of a public request, not the financial outcome like it is prioritized in the private industry. Therefore, I suggest quantifying directly the achievement of the strategic goals in an additional perspective.

Measuring the Outcome

The instruments for measuring our strategic outcome are rather complex.

One rather easily accessible measure is the statistics of the number of proposals and approvals. They are a byproduct of the processing of proposals and need “merely” to be analyzed.

The quality of the reviewing process and the efforts in intensifying the international research cooperation can only be measured by an intense reporting about the work in progress. This is opposed to the prevailing business culture, which, based on highly qualified personnel, leaves broad ranges in the way of executing a job.

The achievement of the scientific goals is to be assessed by scientific evaluations. Most of these data are only available after some years and are not adequate for a regular measuring. The DFG

has begun to have the scientific output of her science funding measured by a external research institute (http://www.research-information.de/).

In the financial perspective and in the perspective "learning and growth" the adequate performance indicators are not too difficult to obtain. They are normally a digital byproduct of the working process. Therefore we dispose of elaborate statistics of financial and personnel aspects in our head office.

The success of the internal business processes should be reported, so my suggestion, mainly in the respective organizational units. The performance figures of repetitive, simply structured work can be measured directly, as for example the number of bookings. Other more quality-related aspects would demand specific documentation and are, as a result, not measured regularly. It is to be supposed that their implementation would signify a considerably burden in terms of workload and psychosocial stress in the affected units. Furthermore the fulfillment of a wide range of higher qualified tasks is not at all measurable. In this field should be asked, if such a thorough dissection of process steps should not be neglected in favor of output measurements of entire processes.

The customers' perspective is a field with potential for an amplified output measurement. Here we yet do not analyze all available data: The acceptance ratio of reviewing requests is not monitored, the number of candidates for and the participation in elections of the reviewing boards are reported occasionally, but not in a perennial perspective. These aspects, together with the systematic collecting of feedback signals and complaints, would require a quality management system.

Conclusion

The comparison between the balanced scorecard perspectives and the reporting system of the DFG shows, that, despite an ambitious reporting, the main topics are in some fields influenced by the accessibility of the relevant information. The balanced scorecard can help us on the one hand to monitor our output in fields which are in risk of being ignored. On the other hand, areas with a great amount of accessible data tend to be reported in more detail than necessary.

Therefore the balanced scorecard can help us to concentrate our reporting on the central issues for each organizational level.

[Presenter: Beate Wihelm, Deputy of Budget Department, Deutsche Forschungsgemeinschaft, Germany]

RCN Intellectual Property Issues

The Research Council of Norway has recently decided upon a new IPR-policy. The new policy was initialized by the emphasis on innovation in the Government's declaration in 2005 which stated that Norway should be one of the leading, innovative and dynamic knowledge based economies in the world within the areas where Norway has the advantage. This declaration was followed up by the Ministry of Trade and Industry in a report on how to increase the knowledge of IPR in industry and relevant official institutions and by the Ministry of Education and Research who requested RCN to prepare an IPR-policy for research funding and to facilitate the Universities effort to establish a common IPR-policy.

An internal work-group was established and given the mandate to consider who should have the ownership of values generated from public funded research to ensure the best benefit for society.

The project started in January 2007 and ended in May 2008. The process included studies and field trips as well as meetings and discussions with stake holders from the public and private sector.

The new policy should take into consideration the recent legislative changes in Norway, such as the termination of the academic exception in *The Employment Invention Act* and the changes in the act regulating the universities- and colleges giving them the task of commercialising research results for the benefit of society.

The new policy should also be applicable to the different kinds of projects funded by the RCN; User-driven Innovation Project, Knowledge-building Project with User Involvement and Researcher Project. In the User-driven projects the Project Owner (formal applicant) must be a Norwegian company/organisation. In the two other kinds of project, the Project Owner (formal applicant) must be a Norwegian research institution.

The new IPR-principles

1. Objective
Research projects that are fully or partly financed by the RCN shall ensure society's interests. The results shall benefit society in a broad sense, both through development and dissemination of knowledge and commercialisation. RCN has an important role in contributing to the management of intellectual property resulting from research financed by public funds.

2. Rights
The project results shall in principle be transferred from the employees who have created the results to their employers. For research purposes the project results ought to be freely available for all the participants in the project. In collaborative projects and if an employee has more than one employer the parties shall agree on how the property and exploitation rights shall be divided and managed. As an exception RCN can stipulate special conditions concerning the property and exploitation rights for specific application types.

3. Publication/dissemination
The project results shall in principle be made known as soon as possible. A temporary postponement can be agreed upon if publication interferes with the protection or the commercialisation of the results. In exceptional cases permanent secrecy can be agreed upon.

4. Protection
The institution or enterprise shall evaluate if protection of project results that can have commercial value is needed, and if so, ensure such protection.

5. Utilization
The project results shall be utilized within reasonable time. If this is not carried out, those persons who have created the results in the project can claim that the rights shall be returned to them, unless otherwise agreed.

6. Consortium agreement
Before signing the grant agreement with the RCN, collaborating parties shall enter a consortium agreement which regulates the conditions of the collaboration between the project participants.

Principles for consortium agreements:
a) Use of and possible compensation for background which is brought in to the project shall be regulated.
b) The consortium participants shall have free access to the project results emerging during the project and that are necessary for the completion of the participants own work in the project.
c) The consortium participants shall have access to the project results and to the background at agreed terms when needed for the utilization of their own project results.
d) The research institutions ought to have the right to obtain the property and exploitation rights to the project results that fall outside the other parties' commercial interests.
e) The educational institutions ought to, possibly after a specified date, freely fulfil their needs for use of the project results for educational and research purposes.
[Presenter: Mariken Vinje, Acting Director, The Research Council of Norway, Norway]

Evaluating & Managing Risks in a New Integrated Awards Management System

New technologies, concepts and people constantly challenge the order of things in many fields of research. Less noticeable but equally challenging, information technologies (infrastructure and programs) are deeply transforming activities associated with research such as scientific publishing and research funding.

International research funding programs such as The International Human Frontier Science Program Organization (HFSPO) have in recent years adopted web-based on-line applications of research proposals, dematerialized [this sounds as if we have abolished review committee meetings] to a large extent the flow of data and documents used in the review process (although reviewers themselves are more important and solicited than ever), have generalized electronic-fund transfers for payments of awards and sometimes demand on-line uploading by awardees of their scientific and financial reports.

Research funding organizations, despite having distinct aims than commercial companies, are adopting comparable approaches towards new technologies and data management such as ERP (Enterprise Resource Planning), workflow management, data warehouse, outsourcing etc.
The nature of the data collected, stored and used makes their protection and safeguard possibly as sensitive as information on patents or technological positions. Research proposals from applicants are always confidential as are the reviewers' reports in most cases; personal and financial information about awardees need to be strictly protected from ill-intended users, data must be archived safely and retrievable over long periods of time etc.

This combination of internal integration of confidential data with the multiplication of points of entry through the extranet and the intranet raises a new challenge for data security in a broad sense, and accountability *vis a vis* the scientific community that must be ensured that appropriate measures have been taken.

Such organizational and technological changes are expected to bring more efficiency and responsiveness. But if not carefully implemented the trade-off will be higher vulnerability. Most attention is often given to security of infrastructure with redundancies in servers, power supply; data back-up etc and to the protection of data with antivirus tools, spam filters, access rights etc. However, how many of these are thoroughly and systematically challenged? The education of users, internal or external, on the different risks brought by new technologies is sometimes overlooked despite its acknowledged critical importance. Management of change is a delicate

exercise when enforcing stricter security procedures that need to be understood and implemented correctly to be efficient (password management is a case in point).

To complement advice by expert consultants, sharing experience and audit results with other research funding organizations is essential to help find a realistic security balance in integrated applications open to the internet. Without these exchanges, the benefit expected from improved workflows and data management will be jeopardized by potential weaknesses in confidentiality of data or continuity of activity.
[Presenter: Patrick Vincent, Director, Administration & Finance, HFSPO, France]

The Art of Risk Management at KNAW

The Royal Netherlands Academy of Arts and Sciences (KNAW) is a hybrid organization. On one hand it is a society of members forming a broad forum for the scientific community in the Netherlands, committed to advising, quality assessment, promoting international scientific cooperation etc. On the other hand it is a research organization containing 18 research institutes on several disciplines in humanities and life sciences. The actual income in 2007 was M€ 135 of which 68% was funded by a lump sum of the Ministry of Education; 75% of M€ 135 was spent by the 18 research institutes. The balance-sheet adds up to M€ 270 (end of 2007) of which 33% in capital.

As far as *accountability* is concerned, the presentation focused on *finance*. The annual financial report is fully published in the annual report of KNAW since 2006. The accounting system is accrual based since 2000 and is highly standardized throughout all the research institutes. Policy-matters within 'finance' are (a) the improvement of the budgeting system, (b) benchmarking on the rate of capital on the balance-total regarding financing investments, (c) the development of the costing system and (d) a budget decrease of about M€ 4,5 by the Ministry, starting 2010. Concerning the *risk management* KNAW focuses on the content of periodical reports, internal controls, monitoring budgets. Also external and internal auditing and compliance is involved. Policy-matters are (a) the specific management structure of the central organization versus the research institutes, (b) moving risk management from 'data-checking' towards 'risk orientation' in the operational and the strategic agenda.

When it comes to *choosing the right direction* the KNAW presented three major themes. As far as (a) organization of the financial function is concerned, KNAW is experiencing more complexity in accountability; this calls for improving skills on all levels. It is stated that the development of a shared service centre on finance is rather inevitable in due course. Looking at (b) the costing system: there are several reasons (amongst other reasons) to believe that a full cost method is inevitable on very short term to safeguard financing of research projects. Concerning (c) the risk approach in auditing, the direction moves towards intensifying external as well as internal audit on processes and there should be therefore a discussion within KNAW about the place of the audit function in the organization including the role of the Board's committee on Accounting and Accountability.
[Presenter: Meine Bosma, Manager Finance, Royal Netherlands Academy of Arts & Sciences (KNAW), The Netherlands]

Overview of the Portuguese Foundation for Science & Technology

Under the Ministry of Science, Technology and Higher Education, the Science and Technology Foundation is the main funding agency of research in Portugal. Its activities include the funding of approximately 6000 research projects, 8000 PhD and pos-doc grants and the support of 390

research units and 25 Excellence Centers (Associate Laboratories). Following the special program for science approved by the Portuguese government in 2006, the Foundation also funds over 600 5-year contracts for young PhD researchers and is about to launch a program of 1500 grants for undergraduates aiming at stimulating scientific career choices. The rapid growth of a highly qualified, competitive and more demanding scientific community, the requirement of a greater diversity of programs and funds, and the managing of both national and European Structural Funds are challenging factors. The Foundation's role in assuring the correct use of public funds places accountability among its main concerns, as well as the difficult balance between scientific management and financial management. The participation in this workshop helped us sharing our concerns with other similar agencies, and bringing some new ideas home.
[Presenter: Ligia Amancio, Fundacao para a Ciencia e a Technologia, E.P. (FCT), Portugal]

National Science Foundation International Activities

David Stonner, Head of the Europe Office of the U.S. National Science Foundation, provided a brief overview of the structure and function of the National Science Foundation with a focus on NSF's international activities. Although NSF accounts for less than 5 percent of Federal spending on research and development, the agency is a major source of support for basic research in academic institutions. NSF accounts for nearly 90 percent of support for academic computer science research and more than half the funding in biology, environmental sciences, mathematics, and the social sciences.

NSF supports three regional international offices – a European Office in Paris; a Japan-Southeast Asia Office in Tokyo; and a China office in Beijing. The NSF role in support of international research collaborations is difficult to measure with any degree of specificity, although a new coding scheme has recently been instituted that should lead to better data in this area. NSF does support a number of large research infrastructures that are international in their design and execution. These include a number of astronomical observatories that rely on international partners, the integrated ocean drilling program, the International Polar Year, and the Large Hadron Collider program at CERN.

Dr. Stonner also provided a brief look at accountability from a political perspective, reflecting his previous responsibilities as the NSF liaison with Congress. A discussion followed on how one measures and provides accountability for the public investment in basic research. Although this question is currently the topic of an NSF research program (the Science of Science and Innovation Policy), Stonner suggested that the case for supporting science is strengthened by focusing on the near-term benefits of generating researchers and problem solvers rather than attempting to quantify the marginal return on investments in science.
[Presenter: David Stonner, Head, National Science Foundation European Office, France]

National Science Foundation Risk Assessment Model

Tom Cooley, Chief Financial Officer, National Science Foundation, discussed the National Science Foundation's Risk-Based Portfolio Monitoring Strategy for its Award Portfolio Oversight and Monitoring activities. He summarized NSF's award portfolio, oversight and transparency requirements, portfolio monitoring program, monitoring activities, the NSF's risk assessment model, program accomplishments and future directions.

NSF has an annual portfolio of nearly 35,000 active awards at about 2,200 awardee institutions (universities, colleges, small businesses, non-profits and for profits) with over $19.7 B "on the books" that is audited annually. The risk-based monitoring activity evolved over the 2002-2007

time frame in response to audit findings and recommendations. In 2002, NSF instituted a formalized monitoring program to include piloted site visit procedures and a basic risk assessment. In 2003, that program was expanded to include increased business assistance to awardees, and in 2004 the program was further expanded to include post-award monitoring policies and procedures, and creating a new Division for Institution and Award Support to align corporate systems with business practices. In 2005, the risk assessment model was refined, a baseline and advanced monitoring approach instituted, and the Business System Review procedures for its large facilities were expanded. A desk review program and expanded resources for post-award monitoring were instituted in 2006 and in 2007 the program was further refined and a customer feedback survey included to assist implementing these practices to aim for a user friendly approach that did not over burden the awardee community. The completed program includes (1) "Baseline Monitoring" comprised of an automated report screening, grants and agreements monitoring, and Federal Cash Transaction Report transaction testing, based upon a statistically valid sampling methodology, and (2) "Advanced Monitoring" comprised of desk reviews, site visits and Business Systems Reviews. Baseline activities are a) largely streamlined or automated, b) designed to identify exceptions and potential issues that require immediate research, resolution, or further scrutiny through advanced monitoring, and c) focused on one or more awards rather than the institution's grant management systems.

He reported that automated financial report screening identifies issues that may need further scrutiny such as cash-on-hand, interest income, program income, days-on-hand, adjustments to closed awards and grant closeout and financially unobligated balances. Such transaction testing verifies reasonableness, allowability, and allocability of award expenditures.

Mr. Cooley outlined the components of the Advanced Monitoring Program including specifics relative to Desk Reviews, Site Visits and Business System Reviews.

The final area he discussed was the annual risk assessment of the awards and awardee institutions within the NSF award portfolio to determine monitoring priority for each awardee. He presented the information based upon a model where each award is ranked by a variety of risk factors (award size, award complexity, high-risk expenditures, and fiscal year-end awards) and risk points are assigned at various levels for awardee type, NSF cognizance, new awardee, number of high risk awards, and total obligations which provides for a system of assigned weighting for risk. In this way NSF focuses its limited resources on the 29 % of the awardees administering higher risk awards, thus targeting advanced monitoring activities on 93 % of the funding. NSF's combination of baseline monitoring, advanced monitoring, and augmented activities provide robust coverage of the entire portfolio. He anticipated that further refinements to the program will be made over time and that at least one other Federal agency, EPA, is considering adopting the NSF model to utilize in its own oversight activities.
[Presenter: Tom Cooley, Chief Financial Officer, National Science Foundation, USA]

The Single Audit Concept and Other Audit Issues
Actions to Address the US National Single Audit Sampling Project
On June 21, 2007, the Office of Inspector General community in the US issued its report on the National Single Audit Sampling Project. This project was undertaken to assess statistically the quality of over 35,000 single audits performed annually on awardee institutions. The project reviewed a sample of 208 audits randomly selected from a universe of 38,523 audits submitted during the period April 2003 to March 2004. For the 208 audits, 49% were found to be

acceptable and thus could be relied upon. But 16% of the audits had significant deficiencies and were of limited reliability and 35% were unacceptable and could not be relied upon.

Significant deficiencies included not documenting the auditor's understanding of internal controls over compliance requirements, not testing of internal controls of at least some compliance requirements, and not testing compliance requirements of major programs. To improve quality, the report recommended revising single audit standards and guidance, establishing prerequisite and continuing training requirements for performing single audits, and establishing sanctions to be applied against auditors who perform substandard work.

Since the report was released, there have been a number of actions taken. On October 25, 2007, the Senate Subcommittee on Federal Financial Management held a hearing to discuss the report's findings and recommendations. Representatives from the Inspector General community, the Office of Management and Budget and the American Institute of Certified Public Accountants testified at the hearing, and in general, agreed with the report's recommendations.

Also, OMB and the AICPA are taking steps to address the report's findings. OMB has convened eight working groups staffed from the Inspector General community to improve the guidance on conducting single audits, establish additional training requirements, develop course curriculum for specialized training, and identify actions to address unacceptable audits. The AICPA has established seven standing task forces to review the report recommendations and to revise its single audit guidance and standards for conducting single audits. While these efforts are important, these initiatives have only just begun. As such, it is too early to determine their adequacy or effectiveness.

[Presenter: Debbie Cureton, Associate Inspector General for Audit, National Science Foundation, Office of Inspector General, United States]

The University Perspective on Audit and Compliance Issues

Summary: This session explored how universities view increasing compliance requirements and how they respond to the laws, regulations and policies related to compliance and integrity. No formal survey was completed but in discussions with many auditors, faculty, and research administrators there seems to be an international consensus that the universities are recognizing the importance of complying by establishing a “culture of compliance and conscience”. The three university communities most concerned with compliance are; 1) the academic units which focus on students, mentorship and faculty integrity,2) research integrity and compliance in the design, implementation and reporting of research and 3) the business functions of a university including monitoring of grants and contracts. Most universities have policies regarding the conduct of teaching and learning as well as many internal and external policies and regulations regarding research. However, the financial functions are generally audited fairly rigorously in addition to having an extensive policy framework.

Most breaches of ethics or compliance in the research and academic sectors of a university are made known by a whistleblower. In the financial arena, in addition to whistleblower allegations, auditors may find financial and performance violations through the audit process. In the U.S. universities are audited by internal auditors, possibly state auditors and external audit firms. While most universities have in place appropriate structures, processes and internal controls to avoid disallowances and breaches of ethics, auditors do uncover weaknesses in systems and occasionally fraud and misuse of funds.

Universities, in general, view audits and good management tools that provide an opportunity to improve systems and controls. However, the audits may have some deficiencies; they are expensive, time consuming and in some instances carried out by inexperienced auditors who may not understand policies and processes. In the U.S. the A-133 Single Audit is a good mechanism to review large projects, but they may be too narrow and too focused to be of maximum effectiveness.

With the increasing emphasis on international collaboration, it is increasingly critical that universities and researchers assure compliance with a plethora of national and international standards and regulations.
[Presenter: Lynne Chronister, Executive Director, Office of Sponsored Programs, University of Washington, USA]

Discussion of Future Challenges
Ideas for future workshops were solicited from all participants. They are summarized below:

Performance Management
--Evaluation of research outputs
--Business systems necessary to support researchers in managing research projects
--Indicators of research performance accomplishments
--Controls to ensure project success
--Accountability for research results in new scientifically advanced countries/institutions
--Role of university costing systems in optimizing usage and efficiency of academic resources for research

Compliance
--Managing risk of noncompliance at the funded organization
--Establishing an effective whistle blowing function--case studies and experiences at various funding organizations

Financial Management
--Overhead--experiences at various funding organizations
--Controls over financial reporting at funded institution
--How to manage and value In-kind contributions/cost sharing
--Full economic costing
--Evaluating costing methods in a change management process

Audit
--Audit committees and how they contribute to oversight/accountability of research funds
--Implementation of international audit standards
--Developing/increasing internal audit efforts and relationship to external audits

Pre-award Functions
--Effectiveness of "masked screening" on award selection process
--Individual fellowship on international scale and how to offer comparable standards of living to researchers in different countries
--Strategic impact for research quality and cost of awarding to research intensive universities vs. teaching universities
--Effective peer review process and risks

Information Technology Systems
--Role of IT systems in managing research portfolio and grant costs
--Security of IT systems--standards for securing systems and audits of IT security
--Assessing and managing risks of implementing a new IT system

Intellectual Property
--Rights to intellectual property--funding agency vs. university vs. commercial partner

Ethics
--Corporate social responsibility

The list of topics will be used to plan the agenda for the next Accountability Workshop to be held in Lisbon, Portugal, June 16-18, 2009.
[Facilitator & Discussion Leader: Debbie Cureton, Associate Inspector General for Audit, National Science Foundation, Office of Inspector General, United States]

Public Private Partnerships in Research: Organization, Accountability and Results

The Foundation for Fundamental Research on Matter (FOM) promotes, coordinates and finances fundamental physics research in The Netherlands. It is an autonomous foundation closely connected to the physics division of the national research council NWO. FOM's annual budget is about 80 million euros. FOM employs about 850 people who work at FOM research institutes and in university laboratories.

The main goals of the current FOM strategy are 1) to maintain and, when possible, reinforce the international quality of Dutch physics and 2) to increase the contribution of FOM to the Dutch knowledge-based economy.

The international quality of Dutch physics research is excellent. According to the recent report Science and Technology Indicators 2008, published by the Netherlands Observatory of Science and Technology (NOWT), the citation impact of Dutch physics publications is very high (more than 40% above world average), as is the citation impact of publications from the FOM institutes.

To increase the contribution of FOM to the Dutch knowledge-based economy FOM has introduced the Industrial Partnership Programmes (IPPs). These are research programmes (size > M€ 1, duration > 4 years) in areas with a great innovation potential and challenging scientific questions. They concern fundamental research carried out by FOM employees in close contact with industrial researchers. The research objectives are jointly formulated by academia and industry and the programmes have more than 50% in-cash financing by industry.
Since 2004 ten IPPs were established, with a total budget of M€ 33. The IPP instrument is successful and the FOM board recently decided to continue it**.**
[Presenter: Mark Brocken, Head of the Financial Department, Foundation for Fundamental Research on Matter, The Netherlands]

Update on the Science Foundation of Ireland

The presentation was set out in three distinct sections as follows:

1.Background details on Science Foundation Ireland (SFI) together with the Foundation's role in the national Strategy for Science, Technology & Innovation (SSTI), 2006 – 13, were presented.

2. An overview was provided on Internal Audit within SFI. The areas covered here included Internal Audit's mission, main responsibilities, the reporting structure of the function within SFI, the audit planning and reporting processes employed and an outline of the audit performance methods used.

3. The Accountability Developments within SFI over the last year and the ongoing Accountability Challenges facing the Foundation.

[Presenters: Donal Keane, Chief Operations Officer & Jeremy Twomey, Head of Audit & Compliance, Science Foundation Ireland (SFI), Ireland]

Update on the Swiss National Science Foundation Internal Control System (ICS)

Due to the new regulations of the Swiss Code of Obligations, a new internal control system and a risk assessment system have been put in place. This presentation discussed the elements of these systems. The main components are summarized below:

1. Orientation, involving strategic and operational risks and controls.
2. Reporting the risks and controls

Internal control is the defined as the totality of basic principles and practices provided by the management to assure the following:

1 Achieving business objectives
2. Compliance with laws and regulations
3. Safeguarding business assets
4. Identifying and reducing errors
5. Ensuring timely and reliable financial reporting

The annual report contains no fundamental errors. Errors are fundamental if they could have an impact on economic decisions.Controls in the individual business processes and relevant information technology processes were discussed. Finally, organizational structure of the internal audit function was presented with information on operational aspects.

[Presenter: Sandra Scheidegger, Head of Controlling, Swiss National Science Foundation, Switzerland]

Update on the Research Council of Norway

This presentation centered on "whistleblowing." A survey in Norway identified a significant concern over the amount of unreported economic abuse or foul-play within institutions. Thus, a change in the law set up a new channel for internal whistleblowing and for protection of the whistle blower. The presentation discussed the legal changes and the challenges of implementation.

[Presenter: Trine Tengbom, Director, The Research Council of Norway, Norway]

Challenges of Grants-in-Aid for Scientific Research (KAKENHI)

What is "KAKENHI"?

"Grants-in-Aid for Scientific Research (KAKENHI)" is the biggest funding program in Japan. There are approximately 100,000 new applications, and approximately 24,000 new proposals selected in FY2007. Including new and continuous projects, over 56,000 research projects are supported by KAKENHI in FY2007.

KAKENHI covers all research fields including the social sciences and the humanities. And it supports "curiosity-driven research". Almost all the researchers of universities and research institutes in Japan can apply to KAKENHI. The way of screening the grants is peer review done by approximately 6,000 reviewers. Recruitment, selection and grant disbursement are carried out by MEXT and JSPS.

System Reform of KAKENHI

MEXT has carried out the system reform of KAKENHI.

1. Countermeasures against misuse

The cause of misuse is due to moral issue of researchers, lack of organizational management in institutes, and inflexibility of funding system. The countermeasures which MEXT has carried out are:

- Suspension from research funds (2-5 years)
- Strengthen management system of institutes
  - Checking "unreasonable overlap" and "excessive concentration" through cross-ministerial R&D management system called "e-Rad"
- Funding system reform

2. Effective and efficient use

MEXT has carried out system reform for effective and efficient use.

Two examples of system reform of KAKENHI are:

- Simplifying procedure for carry over
- Changing the break down of use

The study group which discusses efficient use of research fund was just established in March, 2008. Members of the study group are universities, funding agencies and ministries including JSPS and MEXT. Now they're trying to share up-to-date information of rules of funding.

3. Accountability and transparency

To ensure accountability and transparency of research funding, research results are available through the following means:

- Reports of research progress supported by KAKENHI are available using on-line search function.
- A program in which school children visit a university lab and participate in experiments or fieldwork is carried out by JSPS.

Hot Issues

One of the hot issues in KAKENHI is setting a new category for innovating and challenging research in FY2008. The category is called "Scientific Research on Innovative Areas". It is introduced "masking" screening on trial in documentary review (first-stage review).

[Presenter: Emi Ochiai, Unit Chief, Scientific Research Aid Division, Research Promotion Bureau, Ministry of Education, Culture, Sports, Science and Technology (MEXT), Japan)]

German DFG: Overhead Funding Audit

DFG is the central public funding research organization for academic research in Germany. It promotes academic excellence on a competitive basis, acts as an advisor for science and encourages international research cooperation. The annual budget amounts to 2, 1 billion Euros.

DFG grants are till 2006 sole foreseen to finance direct costs like staff expenses, consumables, investments and other. Till 2007, research projects will receive additional 20% on their respective funding amounts to cover typical overhead costs. A comparison with EC-research programs shows that also other funding rates for overhead in Europe exist.

From an audit point of view the audit procedure of the DFG internal Audit Department changed. In the case of overhead funding an audit should also be focused on the used cost accounting system on the site of the grant holder. As it has done in former years- also the total audit or random sampling audit could be applied.

It should be noted that in the result there are limitations in usage of funds for direct costs and freedom by usage of funds for overhead. Granting overhead requires a well designed cost accounting system. A point which should also be clarified is the question of profit, if overhead will be granted to a private research organization.
[Presenter: Florian Habel, Internal Audit Director, Deutsche Forchungsgemeinschaft (DFG), Germany]

Presentations for the United Kingdom: Moderator: Stuart Ward, Director Corporate Services, Engineering & Physical Sciences Research Council (EPSRC)]

Managing Risks in the Funding of Research Overseas

The presentation described how one UK Research Council was managing international funding programmes- and learning how to do this in a way which expanded the scope of funding horizons whilst managing risks through building upon existing funding mechanisms.

The main focus of the talk related to a programme commissioned jointly with one co-funder which had enabled calls for research proposals from research teams from across the world. This had achieved three key benefits i.e.:

- supported the identification of high quality research on an international level
- levered large sums from within a funding stream which had previously been deployed on short timescale consultancy type work into blue skies research
- enabled the Research Council to operate beyond its traditional boundaries which restricted direct research funding to institutions within national borders

The approach used a number of key ingredients to provide a commissioning structure which added strength - in particular:

- Close engagement by Finance with the project team to jointly consider and review the programme risk parameters
- Tripartite engagement of the project team and finance with counterparts in the key funder
- Establishment of a Memorandum of Understanding which addressed financial control issues including delegated powers and available authorities to be drawn upon

- An international commissioning panel representing variety of views and international research expertise
- Obtaining assurance to be obtained on overseas bodies and researchers using information provided to the UK plus information available from other peer review and funding sources
- Application of enhancements to standard controls to provide delivery and accountability assurance

The programmes have been operated to allow Research Organisations (ROs) throughout the world to present research proposals. A variety of projects have been selected – some run by UK Universities/ Independent ROs- others wholly run by overseas ROs and some involving UK and overseas collaborations- in some instances led by UK ROs- but in others led by an overseas RO.

Using collaborative funders money has meant that although the Research Council itself was not allowed to directly to fund overseas ROs using UK public money, other funders' money incorporated into a common pot could be attributed to projects at overseas ROs. This also allowed permitted flexibility in the funding rules, where Research Council (RC) funding within the UK is required to adhere to the full economic cost funding (fEC) framework under which RCs pay 80% of fEC.

UK RCs operate standard eligibility and costing system checks on all new UK Independent ROs before allowing them to apply for possible funding. These rules were modified to examine the financial and research status of overseas ROs applying under the international funding schemes discussed here. This included examination and review of Annual Accounts and Reports. Governing Statutes, and other relevant material including costing system details. These checks also identified risk issues which were addressed where necessary in finalizing contract terms. This includes the need to establish the exact status and operational HQ offices of ROs irrespective of, in which country they are registered.

Assurance regarding the ROs themselves and of Principal Investigators (PIs) and research team members was provided from :

- Peer review processes
- Information provided by FCO, DFID and international funders
- This included the need to establish that PIs had sound credentials to manage large international research projects

Finally Finance looked at various mechanisms to support delivery of the work through contractual controls – these included:

- 6 monthly financial reporting
- Annual claims signed off by Directors of Finance
- Right to obtain Auditors certificates at end of projects
- Retention of funds to project end/completion
- Ensuring full vouching maintained on overseas fieldwork – particularly for all local engaged staff and volunteers as well as associated fieldwork expenses
- Control over cash flows
- Requirements to tender and take care with sub contracting

Conclusions

- Novel funding arrangements enabling funding of research on a common international agenda can be put in place provided risks are addressed
- Assurance can/should be gathered from a variety of sources- effective peer review processes conducted in an international context will help with this
- Controls need to be applied and managed to suit the circumstances

[Presenter: Brian Hooper, Finance Director, ESRC, United Kingdom]

Quality Assurance for Funding Research at Full Economic Costs – A UK Perspective

- Background and summary introduction of the grant administration process adopted by the Research Councils in the United Kingdom
- Introduction to the principles of full economic costing (FEC) introduced in 2005
- Overview of the Assurance process used by the Research Councils in the United Kingdom before the introduction of FEC and the significant revisions which have been introduced as a result of FEC

In 2005/06, the Research Councils undertook a major revision of their Assurance processes. This was as a direct result of the introduction of full economic costing in the United Kingdom. A new function was established to develop, implement and lead on this new mechanism: RCUK Assurance.

The process emphasizes a collaborative approach with universities and is generally very well received by institutions in the UK. It is light touch, with a visit every three to four years to research intensive universities.

[Presenter: Gareth MacDonald, Biotechnology & Biological Sciences Research (BBSRC)]

A University Perspective

This presentation discussed mechanisms for managing risk in research and knowledge transfer, and the definition of responsibilities of those involved in the activities, preceded by some thoughts on accountability.

Thoughts on Accountability

Borrowing from experience and developments in manufacturing, we should note that quality cannot be inspected into a product or process, it has to be built in from the beginning, and those involved need to be given responsibility for it.

An institution aims to promote good practice in research, management, and administration. In support of this, a university will provide training and support in relevant skills, and in some cases will require completion of training before certain responsibilities can be taken on (e.g. the University of Liverpool requires academic staff to undertake specific training before they are able to be a supervisor of a postgraduate research student, and this accreditation needs to be renewed on a periodic basis).

However, the greater the burden of regulation and legislation, the more time is spent in meeting the specific requirements (and reporting on them), and hence, potentially, less time and effort can

be put into the promotion of good practice. This might be described as the accountability paradox.

Conversely, the aim should be to simplify and harmonize rules, policies, terms and conditions, as this will lead to a better understanding and hence a greater chance of compliance, but also a lower cost of achieving and assuring compliance. An approach using a framework of policy rather than highly detailed prescription is more likely to be successful.

Mechanisms for Managing Risk

A range of mechanisms are used to manage risk and to provide accountability. Review processes are used to evaluate project concepts and proposals (supported as part of the institutional research management system), and partnerships. Each project proposal undergoes a risk assessment as part of the institutional approval process (with the outcome determining the level of authorization required). There are detailed governance processes for projects involving humans or animals. Institutional systems need to capture and categorize adequately information about projects, so that they can report for institutional financial purposes and for individual project management purposes. An institution will have a set of policies, such as general expectations and processes, as well as specific areas such as dealing with misconduct and conflicts of interest. Finally, there will be a range of audit processes.

Audit Processes

The following illustrate the range of audit processes undertaken on research and knowledge transfer activities.

External Financial Audit: The annual, formal requirement, which may pick up some inadequacies of approach, but which does not generally provide significant developmental input. It is often constrained by trainees being used by the audit firm.

Internal Audit: Periodic audit of both central and departmental processes, which can provide significant developmental benefits, and also provide evidence to enable institutional change or investment decisions to be taken.

Departmental Reviews: A periodic process, examining either all activity or certain aspects, which can help to promote good practice across the institution. Some reviews may involve external peers.

Funder Audits: Research Councils' audit processes comprise the Funding Assurance Programme and the Quality Assurance and Validation process. These can provide good developmental input, similar to that of internal audits, and enhance the understanding and communication between the research organization and the funder.

Project-Specific Audits: Most funders, especially those in the public sector, reserve the right to audit, but apart from the European Commission (EC), few do so. EC audits vary from audit certification of cost statements to on-site visits. The former tend to provide little benefit, whereas the latter can provide more developmental benefit. Audits associated with structural funding tend to be burdensome, with little value to the organization.

Responsibilities

Investigators
Clarity of the responsibilities of an investigator is important, and is necessary to support the decisions of a head of department / school about suitability for being an investigator. The responsibilities of an investigator, which may not all apply to all projects, given their nature, include:

i)	Research Leadership and Quality	The creation of an environment in which high quality research is undertaken, in a collegiate and supportive fashion. The provision of suitable direction to enable productive research, along with controls to ensure quality.
ii)	Management of Project Staff	The recruitment and development of members of the team (employees and students), and their direction and supervision in delivering against research targets. Management of partners and collaborators against agreed plans.
iii)	Financial Management	Appropriate use of resources within the terms of the funding agreement and within the University's policies and procedures.
iv)	Health and Safety	Ensuring an environment in which the risks to staff and participants have been assessed and are appropriately managed.
v)	Reporting, Dissemination and Publication	Providing appropriate reports on progress to the funder and others as required. Ensuring results are suitably disseminated, exploited, and published.
vi)	Research Governance	Ensuring good research practice, and adherence to any relevant legislation, regulation, or policies.
vii)	Contractual and Project Management	Recognizing and meeting the contractual obligations of the funding. Ensuring that the project is undertaken in a timely fashion, against an agreed plan.

In some of these areas, there is a balance of responsibility between the investigator and their head of department / school.

Professional Support Staff
The list of investigator responsibilities indicates the breadth of those responsibilities. As such, investigators need support in delivering these responsibilities, in particular where someone has numbers of projects, or they are large and complex. The areas in which support might be delivered are:

i) Administrative
- Ensuring proposal meets funders requirements
- Liaising with, and co-ordination of, partners
- Supporting team meetings, partner meetings, and meetings with funders / customers
- Publicity and marketing

ii) Financial
- Costing and pricing of proposal
- Procurement
- Charging of costs to appropriate accounts
- Provision of relevant statements and alerting to over- / under-spends
- Support of audit processes

iii) Staffing
- Administering the appointment processes
- Ensuring induction and PDR processes are undertaken
- Maintaining a training plan

iv) Environment
- Ensuring working environment meets relevant health and safety procedures
- Support of equipment, etc.

v) Reporting
- Provision of material for reports and presentations
- Ensuring reports meet funder requirements

vi) Commercial
- Contract development and negotiation
- Assistance in making proposals commercially relevant
- Identification of results that can be protected
- Identification and support of potential exploitation routes

vii) Project Management
- Maintaining a project plan
- Providing alerts for required actions
- Risk assessment and management
- Liaison with funders / customers
- Support of forward planning

The delivery of these types of support can take a number of forms, but are particularly in the form of people and systems, that can be organized on a centralized, localized, or mixed basis. The most productive arrangement is to have common systems used by a mixed displacement of staff.

Staff undertaking this support will include those in central offices (*e.g.* human resources, research support, facilities management, and finance), those in departmental (generic) positions, and those in positions dedicated to specific projects. Staff in support roles might be in

administrative, clerical, or technical positions. Achieving a suitable balance is important, recognizing the need for dedicated resource to be built explicitly into the budgets of some projects.

Both of these sets of responsibilities could form the basis of training courses for relevant staff, and potentially become a requirement.

Summary

An institution will try to provide the right conditions for good performance and good practice, using both supportive and directive mechanisms. Bilateral, discursive, inclusive audit mechanisms can be the most beneficial and productive, helping to embed good practice. This is enhanced where the institution is clear about the relative responsibilities and those involved in the activities.

[Presenter: Ian Carter, Direct of Research, University of Liverpool, United Kingdom]

Investigations and International Cooperation

The presentation set the framework for responsible conduct of research and a process to consider in handing allegations of misconduct. The legal areas covered are:

1. Definitions: Plagiarism, Falsification of data, and Fabrication of Data
2. Investigative Process: Allegations, Inquiries, Investigation phases
3. Assessment of Facts: Professional norms, state of mind (intent) and Burden of Proof
4. Adjudication Criteria: Degree of intent, pattern of occurrence, and impact
5. Range of Actions: Correct the record, reprimand, special certifications, suspension of funding, and debarment.
6. Appeal Rights: Factual errors

A case example was used to illustrate an international twist involving peer view and plagiarism of idea.

International challenges were summarized :

1. No agreed upon legal framework for handling inquiries and investigations
2. No structure for fact fining across geopolitical boundaries
3. Currently dependent upon personal relationships.
4. Diverse community standards
5. Diverse collaborations
6. different systems of law
7. Different languages and cultures

Efforts are underway to facilitate investigations. This is being handled by a Global Science Forum Committee (OECD). The Committee is focusing on investigations of wrong-doing in international collaborations. The action steps include, creating a network to provide policy and operational information for investigations, developing a set of principles to facilitate investigations, and developing model language that can be included in international collaborations that govern how to handle allegations of wrong-doing. Note: Dr. Boesz is a Co-chair of the Committee.

[Presenter: Christine Boesz, Inspector General, National Science Foundation, Office of Inspector General, United States]

General Workshop Observations and Conclusions

The participants agreed that the workshop achieved its objectives. It was recognized that scientific research involves an increasing number of international collaborations using both formal agreements and informal arrangements. While collaborations make complex and expensive projects more feasible, the accountability challenges are enormous both in scope and resources needed. Therefore, global communication and cooperation among accountability professionals is necessary to gain efficiency and to produce timely, useful accountability information. During the Workshop, there was discussion on the importance of devising ways to rely on the work of others in the accountability profession. The progress made by participants and their institutions in improving accountability systems was notable. The next Accountability Workshop is scheduled for **June 16-18, 2009.** It will be held in Lisbon, Portugal.

Also special thanks to Debbie Shilton and Maury Pully for their assistance with the agenda and all the logistical and organizational arrangements they coordinated to make this Workshop such a success. The Workshop participants are grateful for the efforts of Dr. Ian Carter and the generosity of the University of Liverpool and its Foresight Centre in providing the venue and general support for this meeting.

For additional information, contact Christine C. Boesz, Dr.P.H., Inspector General, National Science Foundation, U.S.A., e-mail: cboesz@nsf.gov

APPENDIX A

FINAL AGENDA

International Workshop on Accountability Challenges:
Choosing the Right Direction
Foresight Centre, University of Liverpool, 1 Brownlow Street
Liverpool, United Kingdom L69 3GL
June 19 – June 21, 2008

Co-Chair: Christine C. Boesz, Inspector General
National Science Foundation (NSF)
United States of America (USA)

Co-Chair: Stuart Ward, Director of Corporate Services
Engineering & Physical Sciences Research Council (EPSRC)
United Kingdom (UK)

Theme: ***Accountability Challenges: Choosing the Right Direction***

Wednesday, June 18
6:30 – 8:00 PM "Meet & Greet" Reception- Foresight Centre (see address above)

Thursday, June 19
8:30 AM Workshop Registration
9:00 AM Welcome and Introductions

9:15 AM An Overview of Science and Engineering Research in the United Kingdom
Stuart Ward

9:45 AM European Commission Audit Policy and Audit Strategy
Marc Bellens and Marcel Magnus
10:30 AM Break

10:45 AM European Commission - continued

11:30 AM Evaluation Activities at the European Science Foundation: An Update
Alexis-Michel Mugabushaka

12:00 PM Working Lunch: Networking – Science or Art
Christine Boesz

1:30 PM Performance Indicators
Beate Wihelm

2:00 PM RCN Intellectual Property Issues
Mariken Vinje

2:40 PM Evaluating & Managing Risks in a New Integrated Awards Management System
Patrick Vincent

3:30 PM Break

3:45 PM The Art of Risk Management at KNAW
Meine Bosma

4:30 PM Overview of the Portuguese Foundation for Science & Technology
Ligia Amancio

5:00 PM Close for Day

7:00 PM Dinner (Reception beginning 7:00 with dinner at 7:45) at *Merseyside Maritime Museum*

Friday, June 20

8:30 AM National Science Foundation International Activities
Speaker: David Stonner

9:30 AM National Science Foundation Risk Assessment Model
Tom Cooley

10:15 AM Break

10:30 AM The Single Audit Concept and Other Audit Issues
Debbie Cureton

11:15 AM The University Perspective on Audit and Compliance Issues
Lynne Chronister

12:00 noon Working Lunch- Discussion of Future Challenges
Deborah Cureton

1:45 PM Public Private Partnerships in Research: Organization, Accountability and Results
Mark Brocken

2:30 PM Update on the Science Foundation of Ireland Update
Donal Keane and Jeremy Twomey

3:00 PM Update on the Swiss National Science Foundation
Sandra Scheidegger

3:30 PM Break

3:45 PM Update on the Research Council of Norway
Trine Tengbom

4:05 PM Challenges of Grants-in-Aid for Scientific Research (KAKENHI)
Ministry of Education, Culture, Sports, Science & Technology
Emi Ochiai

4:45 PM Daily Wrap-Up
5:00 PM Close for the Day

Saturday, June 21

8:30 AM German DFG: Overhead Funding Audit
Florian Habel

8:30 AM Presentations from the United Kingdom:
Stuart Ward, Moderator
Brian Hooper: Managing Risks in the funding of Research Overseas
Gareth MacDonald: Quality Assurance for Funding Research at Full Economic Costs – a UK Perspective
Ian Carter: A University Perspective

10:00 AM Break

10:15 AM Presentations from the United Kingdom (Continued)

11:15 AM Investigations and International Cooperation
Christine Boesz

11:50 AM Wrap-up Discussion\Conclude Workshop
Christine Boesz and Stuart Ward

12:00 noon Adjournment

PLEASE NOTE: All sessions will be conducted in English. Times of presentations and speakers may change. NSF Contact: Maury Pully, Assistant to the Inspector General: mpully@nsf.gov
(Final)

APPENDIX B

ACCOUNTABILITY IN SCIENCE RESEARCH FUNDING WORKSHOP
June 19-21, 2008
Liverpool, United Kingdom
List of Participants

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