

International Workshop on Accountability in Science Research Funding:
A New Decade of Managing Risks and Accountability Challenges

Summary Report

June 23-25, 2010
Oslo, Norway

INTRODUCTION

On June 23-25, 2010, The Research Council of Norway (RCN) and the U.S. National Science Foundation (NSF) co-hosted an international workshop on managing risks and accountability challenges.

The 2010 Workshop was the eighth in a series of annual workshops. The first workshop was held in Paris in 2003 and focused on organizational structures and research and technology missions of the represented funding organizations. The overall goal of the 2010 workshop was to gather officials from international research organizations responsible for the oversight of research to discuss new or existing challenges and exchange experiences and best practices.

PURPOSE

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

INVITEES

Invitees were individuals with responsibility for operating programs to administer, oversee and/or prevent and detect fraud, waste, and abuse in government-funded science and engineering programs. Government funding agencies and some research universities and institutions were also represented. International attendees and their affiliations are listed in **Appendix B**.

OVERVIEW

The National Science Foundation and The Research Council of Norway co-hosted the workshop this year in Oslo, Norway. Organizers from the National Science Foundation were Allison Lerner, Inspector General; Deborah Cureton, Consultant to the Inspector General; Christine C. Boesz, Dr. P.H., Former Inspector General and Kristen Cutforth, Attorney Advisor. From the Research Council of Norway, the co-hosts were Trine Tengbom, Director, Internal Audit and Heidi Eriksen, Adviser, Internal Audit.

NARRATIVE SUMMARIES

Wednesday, June 23

Overview of the Research Council of Norway

Soenneve Oelnes, Executive Director, Division of Administrative Affairs, The Research Council of Norway (RCN), Norway

The Norwegian Research Council (NRC) was established in 1993, by merging five research councils and is the only research council in Norway. Approximately 42 percent of funds for research and development in Norway comes from public funding, of which 30percent is distributed through RCN.

RCN has four main roles:

- Advise the government on research policy
- Provide research funding to:
 - Support basic research
 - Implement national thematic priorities
 - Support research and development in industry
- Support networking and dissemination

In addition, internationalization has become a more and more important perspective for all the activities in RCN.

The system of governance at RCN is complicated. RCN has four divisions; Science, Strategic Priorities, Innovation, and Administration. In addition, there is the Director General and his staff and an Executive Board. There are three Research Boards – one for each of the three scientific divisions mentioned above who are responsible for distributing the research funds.

There are several different funding schemes, ranging from Centres of Excellence to User-directed innovation programs. The funding for different schemes and different topics are organized and managed through some 100 research committees. The program coordinator is employed in RCN. The other program members, including the chairperson, are external persons, and some are from abroad. The committee members amount to some 800 persons. To evaluate the applications, another 800 external experts (largely international experts) are drawn on. Hence there is extensive external participation in RCN's activities.

RCN is a key player in Norway's National Research and Innovation system. RCN's research strategy mirrors the Government White Paper. Dialogue and research policy development are major activities for the Council.

Norway's Ministry of Education and Research oversees the activities of RCN. Twenty-five percent of RCN's total funding comes from this ministry. There are 16 other ministries also funding research, and RCN has a very important task to coordinate funding from different sources for common research topics.

Networking and dissemination of research results is another role for RCN. In 2009, RCN had 15,000 visitors. The Executive Board decided that RCN's administrative operating costs could

not exceed 8 percent of its budget turnover. In 2009, RCN's administrative costs were 7.9 percent, of which 1 percent was for dissemination costs and 1 percent was for IT activities.

RCN's budget turnover for 2010 is 875 mill €, an increase of 250 mill € over the past five years. RCN has some 400 employees. The number of funded projects has increased from 6200 to 6700 from 2004 to 2009 and the number of applications has decreased from 5600 to 5300.

RCN underwent an external evaluation in 2000/2001, conducted by Technopolis, and will be evaluated again in 2011.

Accountability Standards: What is Changing?

Christine C. Boesz, Dr. P.H., Former Inspector General, National Science Foundation (NSF), United States

This presentation focused on two areas of accountability: 1) Responsible Conduct of Research and 2) United States Government Auditing Standards. First, the advancements in investigating allegations of research misconduct were discussed. A summary of the work of the Global Science Forum (GSF) under the auspices of the Office of Economic Cooperation and Development (OECD), emphasizing the importance of internal research collaborations in furthering scientific discovery, was presented. The OECD-GSF was concerned about the challenges of investigating allegations of "misconduct in research", defined as fabrication and falsification of data, and plagiarism. With increasing numbers of international collaborations in scientific, engineering, and other research, allegations of misconduct in research can present some unique challenges to those responsible for conducting the investigations. Therefore, an International Committee was formed to explore the challenges and barriers to fair and timely investigations. The fundamental goal of the Committee's work was to develop methods of facilitating investigations into allegations of misconduct in international collaborations by developing core principles, by identifying useful tools, by promoting international awareness of the issues and by developing a network among experts. The final report *Investigating Research Misconduct Allegations in International Collaborative Research Projects: A Practical Guide*, of this Committee is available on the OECD web-site at the following link:

<http://www.oecd.org/dataoecd/39/4/42713295.pdf>. Progress in implementation has been slow. This is partially because of resistance to change and partially because many countries do not have the infrastructure in place to handle complex investigations. The structures and processes needed to support research integrity and allegations of misconduct will be discussed at a World Conference in Singapore, 21-34 July 2010. Proceedings of this meeting will be published.

The role of the U.S. Government Accountability Office (GAO) was explained. GAO sets the Generally Accepted Government Auditing Standards (GAGAS) for high quality audits for governments at the federal, state, and local level and entities receiving federal funds. The standards are currently under review. An exposure draft is expected to be issued this summer with a final issuance of new standards in the winter 2011. The focus of the changes is from "rule basis" to "judgment of the auditor", relying heavily on professional expertise. Major issues under consideration include, definitions of auditor, audit team, audit organization and audit period; independence; competence and training; quality control issues, and performance audits. Under the proposed conceptual framework, *independence* guidance may rely heavily on the

auditors ability to identify and evaluate threats to independence, and to eliminate or manage them at an acceptable level. One challenging area for change is performance audits. For example, the term “waste” has not been defined in the past. Clarifications of this term and others are under consideration. For perspective, the changes are being driven and largely shaped by the audit community’s desire to simplify the Standards and to allow for more professional judgment in setting scope and assessing threats to audit integrity. However, to ensure public accountability is not compromised, GAO personnel are carefully evaluating all proposed changes. Implementation issues will include training, resources, and public opinion.

Funding Activities at the Hungarian Scientific Research Fund (OTKA)

Andrea Balla, Head of Department of Social Sciences and Humanities, Hungarian Scientific Research Fund (OTKA), Hungary

Basic and applied research, development, and innovation rely on two cooperating funding agencies in Hungary: the Hungarian Scientific Research Fund (OTKA), with a yearly budget of approximately 20 M Euros, and the National Office for Research and Technology (NORT). However, all research universities, institutions of higher education, and the research institutes of the Hungarian Academy of Sciences primarily depend on OTKA to finance their basic research activities. The budget of OTKA is determined by the Parliament each year, based on recommendations from the Hungarian Ministry of Finances.

Research proposals undergo three levels of review: expert review, panel meeting review with ranking lists, and final review and approval by the Scientific Colleges and OTKA Committee. During peer review and before signing the contract (for 3-4 years) the proposal budget is evaluated, and corrected through negotiation if needed. If the proposal budget request is deemed unrealistic by the peer review or OTKA Committee, a 25% reduction is possible. Once approved, the Principal Investigator must submit a financial plan identifying anticipated research project costs for up to 12 months intervals (interval length can be flexible). At the end of each interval, the Principal Investigator must submit a summary financial and scientific report. Continuous, uninterrupted financing depends on OTKA’s receipt of accurate reports.

The financial plan is flexible and can be modified if scientifically justified in writing to the head of the Scientific College. About 35% of the projects will request and will be granted budget modifications. No cost extensions are possible and unspent funds can be used for extending the projects for another period. Misspent funds must be reimbursed to OTKA at the end of the award period and historically have ranged about 1 percent of the award amount. Allocation of funds to specific awards from the 3 Scientific Colleges is based on needs of the Principal Investigator and foregoing analysis of different cost categories.

Making an Impact and Accounting for It

Ian Carter, Director of Research and Enterprise, University of Sussex, United Kingdom

Research is now expected to make an impact, and be able to show that it is doing so. In some respects, this is not new; but the explicit requirements are challenging some traditional positions. This presentation explored the nature of impact and its context in innovation and research, and

explores the relationships. Two example approaches from the UK were presented to illustrate alternative approaches to capturing information about and assessing impact.

1. What Is Impact?

Impact means different things to different people: journal impact factors and publication citation rates; economic impact; and innovation. Potential areas of impact include economic, social, public policy, cultural, environmental, quality of life, and education. These are all sometimes abbreviated to “economic impact”, which in the UK has created unfortunate opposition to the concept of research impact. Indeed, one view of impact is that it does not include educational benefits and uses, which has further alienated the academic community.

2. Research and Innovation

Research and innovation are often linked, especially in socio-economic models and objectives. However, innovation also takes numerous forms, even though it is normally discussed in policy contexts with relation to the OECD definition, which relates to science and technology innovation. This omits innovation in policy, culture and behaviors, which is detrimental in general, but also has the potential to exclude valuable areas of the academy.

Universities and other research organisations are now exhorted to contribute directly to socio-economic impact. While this may be possible in a small minority of cases, the economic impact of research usually takes place after some translational process (i.e. knowledge exchange), and usually in a different socio-economic entity (whether company, government, or third sector). Identifying and measuring the impact of research organizations can therefore be problematic because of the distance between the researcher and the innovator. Under a number of current schemes and measurement mechanisms, Higher Education Institutions are responsible for reporting other people’s activity and effects, with inevitable problems

Funders of research, especially government agencies wish the researchers they fund to translate their research into some form of practice or benefit. There remains an open question as to whether this knowledge exchange is a part of the overall research process (i.e. part of the plurality of dissemination), or whether it is a “different”, non-research activity. This can cause difficulties both with respect to the mode of funding, and to institutions as to how they record and report knowledge exchange against the required categorizations. Equally, some government interventions (especially those managed by the regional development agencies and funded by European structural funds) are not research, but are nonetheless perceived as such by many researchers. This also leads to risks with respect to meeting contractual deliverables.

It is contended that ground-breaking research and world-leading innovation both require flexibility and freedom to act, rather than being treated as a well-defined commodity. It also needs to be recognized that there is considerable overhead involved in measuring the immeasurable.

3. Two UK Examples

The UK is taking two approaches to identifying and evaluating the impact of research: one at project level and one at the unit level. At the project level, the UK Research Councils now require an application to include a description of the possible pathways to impact (i.e. speculation as to the uses of the research results). During and after the project (for three to five years after the end) researchers and their institutions will be required to report back on the outputs and the outcomes. This could be over a wide range of aspects, not just standard publications (e.g. career development, engagement, exploitation). This raises a number of challenges, including what the Councils will do with the information. A suggestion that about 2 percent of the collected information will be used raises questions about the value of the exercise, given the amount of time, effort, and infrastructural capacity that will go into the process and supporting systems. Of course, institutions should expect to make use of the information, too, in presenting and promoting themselves.

At the unit level, there are proposals to include impact assessment in the UK's periodic research assessment process (formerly the Research Assessment Exercise, RAE, now to be the Research Excellence Framework, REF). This is currently being piloted, and is suggested to involve the documentation of a number of impact case studies for a given unit, where those impacts have occurred during the assessment period (i.e. the previous five years). These impacts need to be related to the underlying research that produced them, which needs to have been of a reasonable quality, and could have been undertaken some time (e.g. 10-20 years) before the impact. This also raises a number of challenges, including the time lag between research and impact, and identifying the causal link between research and impact, and its relative weight.

4. Conclusion

In conclusion, this presentation noted that research and innovation are complex, behavioral human systems, with non-linear, multi-factorial, iterative processes. Identifying and assessing impact in the research and innovation system is non-trivial, and depends on the perspective of the viewer (e.g. government, business, and researcher all have different views on acceptable impact). Managing creativity needs a subtlety of approach, and there's a danger of coupling overly complex data gathering with simplistic analysis. We should tread carefully in these waters for fear of creating an overplanned, overly constrained environment, which will not deliver groundbreaking research and world class innovation.

Auditing Information Technology Systems

Hai Tran, Director for Computing and Telecommunications, Center for Technology and Engineering, Government Accountability Office, United States

The US Government Accountability Office (GAO) is an independent agency in the legislative branch of the federal government. Its mission is to assist the Congress in the oversight of the spending of taxpayers' funds. As such, GAO does not provide funding for science and technology research, but it assesses the accountability of research funding recipients through audits of federal technology programs.

This presentation discussed the principal tools available to agency managers to ensure effective and responsible technology development which include Technology Readiness Levels (TRLs). These TRLs focus on the test and evaluation activities that should be performed during the acquisition of a system or product, especially for hardware systems.

The second tool, the Capability Maturity Model (CMM), focuses on the software component of a system. CMM promotes the development and adoption of structured processes to control and improve the quality of the software development or its acquisition.

In summary, the GAO evaluates accountability of federal technology programs by using these industrial best practices to determine the cost-effectiveness of the federal agency development and/or procurements of large IT systems.

Thursday, June 24

Recent Developments in Research Council Assurance Program

Gareth MacDonald, Head of Assurance, United Kingdom Biotechnology and Biological Sciences Research Council, United Kingdom

This presentation updated attendees on the UK Research Councils' project introduction of full economic costing. This new full economic cost environment necessitated development of a new costing methodology that the universities had to implement as a basis to charge costs to their Research Council sponsored projects. Accordingly, the Transparent Approach to Costing (TRAC) was developed. Under this methodology, universities had to create systems that could track both the direct costs of each project, as well as the indirect costs. Additionally, it had to be able to track on some reasonable basis, and allocate shared costs of activities that directly benefit the research project (ie; principal investigator time devoted to teaching versus research).

Because of the complex nature of this new TRAC costing methodology, the UK Research Councils created an assurance function. This function, as well provides outreach and guidance to help the research universities implement the new costing methodology. It also reviews their cost systems for compliance with the terms and conditions of the grant. Each year, the Assurance Unit conducts 20 three day visits to research organizations in the UK and 20 desk based reviews. Each on-site visit focuses on the university's control environment over the cost accounting systems, including the adequacy of the policies and procedures, the training and qualifications of the accounting staff, the accuracy and reliability of the TRAC system for accurately calculating and applying costs to the various research projects, and the university's internal oversight and governance practices. The overall objective of this assurance process is to add value to the universities' own administrative oversight processes while simultaneously providing the Research Councils with assurance that their regulatory requirements are being met.

Controlling Costs Under Full Economic Costing

Stuart Ward, Director, Corporate Services, United Kingdom Engineering and Physical Sciences Research Council (EPSRC), United Kingdom

The UK has a very successful Higher Education sector across all key areas of activity, but it is vital that the sector reinvests for the future and is transparent in the use of public funding so as to ensure the long-term financial sustainability of the sector. Academic research in the UK is funded on the basis of full economic costs which mean that universities have to understand all the costs of research, including the need to re-invest in infrastructure, and price their research accordingly.

A recent review by Research Councils UK and Universities UK has indicated some concerns with the extent to which research in universities is funded sustainably and whether universities are as efficient and economical in their use of public funding as they could be. Although there are indicators that some institutions are using the process effectively, sector level returns indicate that the gap between research income and research costs is some £2 billion. Furthermore the review concluded that the system gives no incentives to drive efficiency. A number of recommendations, addressing both these issues, are outlined in this presentation.

Demand Management

Stuart Ward, Director, Corporate Services, EPSRC, United Kingdom

EPSRC has historically an “open door” for grant applications. Responsive mode applications can be submitted at any time in any subject within the purview of the Council. However, the demand has increased steeply in recent years. As a consequence, the proportion of research grant proposals that can be funded has fallen. This presentation described the actions EPSRC has taken to improve the efficiency and success rate of its research grant proposal review process and to reduce the associated burden on peer reviewers.

EPSRC ceased to accept re-submissions in April 2009, apart from a small number of invited proposals, and in April 2010 introduced a constraint on repeatedly unsuccessful applicants. The objectives were to:

- Obtain better quality research through fewer, more considered proposals
- Increase the efficiency of the current peer review process by a reducing the submission of uncompetitive applications
- Reduce the burden of effort on the peer review community of assessing poor quality applications
- Provide more time to peer reviewers to consider high quality proposals

According to Nature (March 2010), this was “*a radical, unpopular but courageous effort to address a crisis in the peer-review system.....EPSRC is leading the way with a gutsy gamble: the very type of project it wants its researchers to pursue*”.

The outcome has been surprising. In the period before April 2010 when the constraint on repeatedly unsuccessful applicants was imposed, the number of grant proposals fell by about 35

percent from the same period the previous year and the proportion of grants funded has recovered from around 20 percent to over 30 percent. Anecdotal evidence suggests institutions and applicants are thinking more carefully about proposals prior to submission. The estimated savings for academics in preparation time, for referees in reviewing proposals, and for EPSRC in processing applications is estimated to amount to about £21M in the first year. It will be interesting to see if this trend continues.

Overview of INRA Funding Activities

Michel Eddi, Deputy Director General, French National Institute for Agricultural Research, (INRA), France

This presentation described the agricultural, diet and food, and environmental research mission of INRA, an institute established in 1984. The institute has a staff of around 10,000 and an annual budget of 920 million euros in 2010. Research is conducted in 20 national centers located throughout France. One of INRA's challenges is managing the costs of its research. INRA activities are financed by subsidies from the French government and income generated through research contracts with public funding agencies and private sector. Contract income covers 16 percent of INRA's research expenses, thereby requiring INRA to fund the remaining 84 percent. However, because the majority (75 percent) of the costs that INRA funds are for labor and another 7 percent for operating costs, there is limited amounts available for investment in infrastructure. INRA estimates that the full cost of a scientist is 235,000 euros, of which 39 percent is for operating and structural costs. INRA can support 53 percent of this full cost, most of which (83 percent) covers the wages of the scientist and technical support staff. INRA's challenge is to maintain constant control over increases to labor and reallocate the savings in labor costs to fund other operating and structural activities. INRA is also trying to shift more of the operating costs to its contracts in order to allow more for investments in infrastructure. The scientist cannot work without the structure and environment supports provided by INRA, and trying to continue to fund these components of research is a challenging objective.

Controlling Costs in the DFG Head Office

Beate Wilhelm, Deputy Director, Budget Department, Deutsche Forschungsgemeinschaft (DFG), Germany

In the DFG head office, the tasks of controlling, statistical reporting, quality assurance and auditing are situated in different organizational units. This presentation described DFG's processes for capturing, reporting, and managing the internal costs of its various administrative activities.

The responsibility for the controlling and cost-performance accounting lies in the budget and accounting group in Department I, the central administration. Its main objective is to provide financial data and other cost data about the efficiency of internal processes in the DFG Head Office. By monitoring the cost development, DFG is able to achieve cost transparency within its various organizational levels, create a reinforced cost consciousness and give hints about critical cost developments. DFG also develops instruments that help other departments to detect financial or process risks.

Typical reports include charts showing a comparison of costs incurred over the last five years by cost elements, cost centers and cost units. Also, various cost ratios including the administration costs per funded euro in different funding programs, the material and infrastructure costs per workplace, and the costs of business trips per capita are also reported.

When DFG finds striking cost developments, it performs detailed analyses about these topics to identify underlying causal factors. Recent analyses included a review of the costs of business trips, the costs of the participating in a particular DFG program (the ERA-Nets) in relation to the funds received, and an analysis of costs of the advancement of international scientific cooperations.

This management information has resulted in systemic changes to DFG program's internal administrative processes. Programs with an inadequate cost-performance quota have been required to modify their administrative procedures. Recently, based on its cost studies, DFG has also launched organizational studies about several working fields in the DFG head office. So the cost-performance-accounting and controlling process implemented at DFG does not result in short term modifications as in the private sector, but in longer term structural changes in DFG's administrative practices.

DFG Funded Projects and Administrative Misconduct

Florian Habel, Head of Internal Audit Department, Deutsche Forschungsgemeinschaft (DFG), Germany

The DFG's internal audit department, which reports directly to the DFG board of directors, is responsible for conducting administrative reviews of DFG funded projects. The internal audit department conducts their audit on-site at universities or at the DFG Head Office. In 2009, it dealt with two cases of administrative misconduct of DFG funds. In one case, a Collaborative Research Centre which had received €12.3 m in funding was reported by a whistleblower in early 2009 to have used DFG funds for improper payments. An audit in 2009 identified that there was no clear project administration, no correct assignment of staff to the project and an unsuitable accounting system.

The other case, which was also reported by a whistleblower in 2009, concerned a visiting professor in Germany who was financed under the Mercator program. In this case, a whistleblower argued that the professor had neglected his teaching duties, and in addition, the terms of his sabbatical at the sending university appeared unclear. The audit is still underway, but it seems that there was no violation of the DFG's rules, which give in this special degree of freedom that is necessary to researchers.

In both cases, the auditors saw that the whistleblowers were very well informed. Both had previously been researchers working on the respective projects. There was no ombudsman for handling allegations of research misconduct and misuse of funds at their universities. In both cases, the whistleblowers were reported to have displayed unusual and outspoken behaviour in the past, raising questions as to the credibility of their reported allegations.

Challenges of Managing, Overseeing and Auditing American Recovery and Reinvestment Act Funds

Martha Rubenstein, Chief Financial Officer, and Allison Lerner, Inspector General, National Science Foundation, United States

This presentation described the challenges of implementing recent legislation in the U.S. to combat the crisis in financial markets and to stimulate the U.S. economy. Signed by President Barack Obama on February 17, 2009, the American Recovery and Reinvestment Act (ARRA) has the aggressive goals of creating and saving American jobs, spurring economic activity and investing in long-term economic growth, while mandating unprecedented levels of transparency and accountability. The National Science Foundation (NSF), which received \$3 billion in ARRA funding in addition to its annual funding of over \$6 billion in FY 2009, has had to adapt its accounting, financial management, risk management, and program evaluation processes to meet the challenges presented by this new legislation. One of the primary challenges was to process additional research and education awards with no increase in administrative funding. Accordingly, for the bulk of its ARRA awards, NSF chose to rely on “in-house” proposals, rather than release new solicitations. This approach proved to be successful. Other challenges included new recipient reporting requirements contained in the legislation. NSF has conducted significant outreach with its recipient community to help ensure greater reporting compliance and is seeing positive results.

NSF’s Office of Inspector General also has a significant role with respect to ARRA and received an additional \$2 million in funding for dedicated ARRA oversight. Through both its Offices of Audit and Investigations, the NSF Inspector General helps to ensure that ARRA funds are spent appropriately and meet the purposes of the legislation. Because of the underlying reason for the enactment of ARRA, the global economic crisis, accountability for ARRA funds is of utmost importance to the ultimate stakeholders – the U.S. taxpayers. Consequently, the Inspector General’s auditing approach to ARRA has been proactive in nature. This has consisted of real-time reviews of NSF’s activities in an effort to spot potential problems before they occur.

Across the entire U.S. federal government there have been palpable increases in the levels of transparency and accountability. The general public is now seen as a partner in the mechanisms of oversight and direct public interest in how tax dollars are spent is on the rise. The future will likely hold federal agencies and managers to even greater levels of transparency, building on the achievement of and the lessons learned from the implementation of ARRA. The goal will be full and easy access to information on all U.S. government spending to give the public confidence that its funds are properly managed.

Accountability Challenges for International Translational Research (video conference)

Lynne Chronister, Assistant Vice Provost and Director of Sponsored Programs, University of Washington, United States

Abstract: In part possibly driven by the advancement of a global economy, the terms *Translational Science* and *Translational Medicine* have gained acceptance and support within the academic research community. Major sponsors of research in the United States, the European

Union (7th Framework) and the United Kingdom have committed significant funding and resources to supporting translational science. This shift to a more outcome oriented process can pose new challenges and accountability in the facilitation and support for research. When the research spans multiple countries and multiple sponsors, even more challenges arise that range from fiscal responsibility to compliance and regulatory requirements to intellectual property ownership and exploitation. By addressing a few of these issues, this presentation provided attendees with insights in developing the critical path to international translational research.

Summary of Presentation: The presentation opened with a brief discussion of some of the accepted definitions of translational research. The term initially was used in the health sciences/medical research community to describe the range of research and development and networking activities needed to ensure and shorten the time from bed to bedside or discovery to application. The term “translational” has expanded to encompass the bridging of basic research to development of practical applications and usable technology. International collaboration is challenging and when the research focus is translational, the administrative and compliance issues are even more critical.

The balance of the session discussed the challenges and opportunities associated with administrative accountability and the broad variation among compliance rules across the globe. Intellectual property, while there have been multiple harmonization agreements in place for over 125 years, still poses significant challenges and can be a barrier to collaboration. Another significant challenge to overcome is collaborators’ export control laws. They can vary significantly and technology restricted from transfer in one country may be acceptable in another.

There is a broad range of responsible units, rules and regulations, and processes that must be recognized when international translational research involves human and animal subjects, scientific integrity and conflicts of interest. It is significant to note that it is almost universally accepted that protections must be in place for subjects and that scientific integrity principles are critical. However we lack guidance on what principles and rules should take precedence when working across international borders.

The Audit Committee: Challenges for a New Decade

Jeremy Twomey, Head of Audit and Compliance, Science Foundation of Ireland. Ireland

This presentation covered three main areas:

First, the definition of an Audit Committee and some background and best practice guidance was discussed.

The second part of the presentation concentrated on the challenges facing the Audit Committee including:

- Risk Oversight
- Committee Meeting Efficiency

- Unclear Committee Roles, Responsibilities & Expectations
- Ensuring Effective Committee Communication

The final section provided a brief summary of the main themes discussed.

Friday, June 25

Survey – Risk Management & Implementation Challenges

Heidi Eriksen, Advisor, Internal Audit, The Research Council of Norway (RCN), Norway

In the fall of 2009, the Research Council of Norway (RCN) started planning its process of introducing and implementing Risk Management on a corporate / strategic level. The process gained momentum in 2010. As part of a Master's course in Internal Audit that the presenter took in 2009 / 2010, she wrote her dissertation about RCN's Risk Management process, focusing on the implementation challenges the organization would be facing.

In order to learn what challenges similar organizations had encountered when implementing Risk Management, she compiled a questionnaire. The survey was distributed to 31 people at 23 research councils / organizations in 13 countries, mainly the invitees / participants to the annual Accountability Workshop, but also to a few selected others. She received 16 completed responses. Thirteen of the 23 research councils participated in the survey. The survey gave indications only. No statistical "conclusions" could be drawn from the sample, mainly because it was too small and had not been selected randomly. Therefore, the survey provided only indicators of Risk Management implementation issues faced by the responding organizations.

The replies indicated that some of the most critical factors for successful Risk Management are:

- Commitment at the top
- Clear communication
- Clear, simple framework and guidelines / standards
- Integration with normal business processes
- Sufficient resources

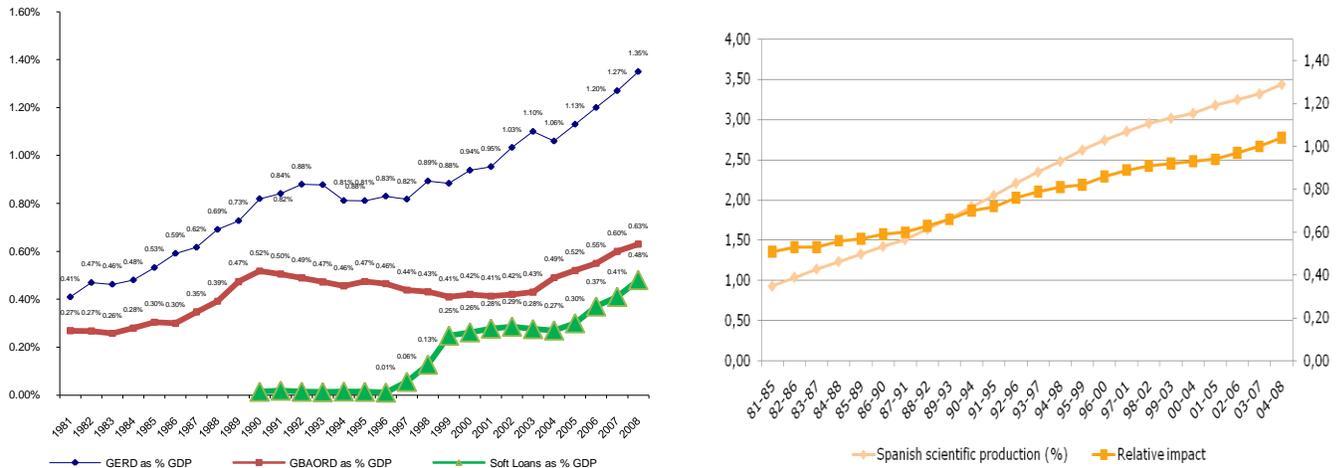
The survey also indicated that several of the organizations have faced similar challenges when implementing Risk Management. Consequently, it might be beneficial to exchange ideas and experiences. Some of the respondents even expressed an interest in sharing of information between different countries.

The Research Funding System in Spain

Victoria Ley, Director, Directorate General for Research and Management of the National R+D+I Plan, National Evaluation and Foresight Agency, Spain

During the last 10 years Spain has improved significantly its research and development performance indicators. Human resources invested in R&D have increased from 21 to 34 percent. R&D investment as a percent of Spain's Gross Domestic Product has gone from 0.82 to

1.87. Scientific production has risen 2.36 percent, from ,96 percent to 3,32 percent and its relative impact increased from 0,51 percent to 1,00 percent. However, despite these encouraging numbers, this presenter indicated that it is necessary to improve the indicators concerning the



impact, relevance and innovation of Spanish research. Therefore, government and agencies are considering new measures to boost the R&D system, identifying the best proposals to be funded, increasing the number of highly qualified researchers and promoting private investment in R&D. The objective is not only to increase the scientific production, but foremost to produce better and more relevant science.

Evaluation and Monitoring

The National Evaluation and Foresight Agency (ANEP) is the Spanish institution responsible for the scientific evaluation of the R&D proposals submitted for public funding in response to many national and regional calls. The ANEP is not a funding agency, but the funding decisions are based on the evaluations performed by ANEP, together with other criteria (strategic and specific call criteria). Evaluation and funding criteria of calls are designed to fund basic research are based on scientific excellence, promoting researcher's freedom and creativity and avoiding political interference. Criteria used on calls designed for strategic needs may also have different standards that are related to particular requirements.

The Spanish National Research Plan also has an oversight tool called The Integral Monitoring and Evaluation System (SISE) which is designed for controlling the management of public funding R&D programs. This monitoring activity helps ensure Spain's research programs are more transparent and allows for publicizing the research programs, giving the Spanish society a better understanding of the activities being financed with public funds. The SISE evaluation is performed yearly to follow up on and evaluate the adequacy of research and innovation policies. It also includes an evaluation of the results of specific R&D programs in order to review current activities and identify the need for new initiatives for future National Research Plans.

Accountability

Administrative, financial, technical and physical verifications are also performed by the managing authority. These verifications ensure that the expenditure charged is real, that the

products or services have been delivered in accordance with the approval decision, that the applications for reimbursement by the beneficiary are correct and that the operations and expenditure comply with community and national rules. They include procedures to avoid duplicate billing of the same costs under other community or national funding schemes and for other programming periods. There are two types of audits: Internal Audits performed by the Financial Control Department, Ministry of Finance (IGAE) and External Audits performed by the Spanish Court of Auditors. The Spanish Court of Auditors is Spain's supreme audit body controlling the accounts and reporting on the economic performance of the State. It reports directly to the Parliament and its members enjoy the same independence as ordinary judges.

Declaration of Assurance – The Expectation Gap

Serge Vanaker, Contracts Manager, European Commission Joint Research Center, Belgium

The different stakeholders (shareholder, auditor & auditee) have different expectations of an audit opinion. The shareholder (for EU, the citizen represented by the Parliament and the Council) and the auditees (the EU institutions) want to get more information from the audit opinion which enables them to better focus their efforts to improve the systems. The auditors are limited by their resources and the methodology used. An example is the use of the Monetary Unit Sampling (MUS), an audit sampling methodology widely used worldwide and also by the European Court of Auditors (ECA) to test and opine on an organization's financial account balances. By using statistical sampling, auditors are able to perform audits more efficiently and with greater reliability. Statistical sampling allows the auditor to test a limited number of transactions and then extrapolate the results to the larger account balance population. This presentation discussed the meaning of statistically extrapolated data and the statistical requirements for using this methodology for financial audits. By using MUS, the ECA has been able to provide a single entity-wide opinion on the European Union financial statements (1994-2006). By further developing the extrapolation methodology, the ECA can now form opinions on the accounts of distinct expenditure areas within the EU, presented as a traffic-light system (2007-2008). These lower levels opinions are more useful in managing costs and making change within the EU organizations. Efforts by both the shareholder and auditor have helped to narrow the expectation gap of audit opinions and make them more useful for management reforms.

A Case Study in Successful IT System Development at the Science Foundation of Ireland

Donal Keane, Chief Operations Officer and Paul McEneaney, Finance Manager, Science Foundation of Ireland (SFI), Ireland

This presentation outlined the process undertaken to appoint contractors to design and build a new Awards Management System for SFI. It outlined some of the obstacles encountered along the way and highlighted the positive aspects that will ensure a successful outcome. Finally, the presentation touched on some of the challenges to be faced when the contractor appointed is based overseas and in a time zone 5 hours behind Ireland.

GENERAL WORKSHOP OBSERVATIONS AND CONCLUSIONS

The Workshop participants are grateful for the efforts of Trine Tengbom and Heidi Eriksen of the Research Council of Norway for providing the venue and general support for this meeting. Also special thanks to Mary Pully, Heidi Eriksen, and others for their assistance in coordinating the logistical and organizational arrangements for this year's workshop.

The 2011 Accountability Workshop is scheduled for **June 22-24, 2011** to be held in Brussels, Belgium, co-hosted by Marc Bellens of the European Commission.

For additional information, contact Mary Pully at the National Science Foundation, USA, email: mpully@nsf.gov

International Workshop on Accountability Challenges
The Research Council of Norway
Stensberggata, 26
Oslo, Norway
June 23-25, 2010

AGENDA

Co-Chairs: Trine Tengbom, Director
 Heidi Eriksen, Adviser-Internal Audit
 The Research Council of Norway (RCN)
 Norway

Co-Chairs: Allison Lerner, Inspector General
 Deborah Cureton, Consultant to Inspector General
 Christine C. Boesz, Former Inspector General
 National Science Foundation (NSF)
 United States of America

Theme: *Accountability in Science Research Funding: A New Decade of Managing Risks and Accountability Challenges*

VENUE: The Research Council of Norway, Stensberggata, 26

Tuesday, June 22

7:00 – 9:00 PM “Meet & Greet” Reception Hosted by The Research Council of Norway, at RCN Headquarters, Stensberggata, 26

Wednesday, June 23

8:30 AM Workshop Registration at RCN

9:00 AM Welcome and Introductions

9:15 AM “Overview of the Research Council of Norway”
 Soenneve Oelnes, Executive Director, Division of Administrative Affairs, RCN

10:15 AM Break

10:30 AM “Accountability Standards: What is Changing?”
 Christine Boesz, Former Inspector General, National Science Foundation

11:30 AM Working Lunch Speaker: “Funding Activities at the Hungarian Scientific Research Fund”
 Andrea Balla, Head of Department of Social Sciences and Humanities

1:30 PM “Making an Impact and Accounting for It”
 Ian Carter, Director of Research and Enterprise, University of Sussex

APPENDIX A

- 2:15 PM “Auditing Information Technology Systems”
Hai Tran, Director for Computing & Telecommunications, Center for
Technology and Engineering,
U.S. Government Accountability Office
- 3:00 PM Close for the Day
- 5:00 PM Shuttle departure from RCN to Museum
- 6:00 PM Museum Tour at **The Norwegian Museum of Cultural History**
Museumsveien 10 (Norsk Folkemuseum) <http://www.folkemuseet.no/en/>
Includes outdoor celebration. Bring or wear walking shoes, warm jacket &
raincoat\umbrella for outdoor events. Tour to start upon arrival at the museum
and will last about 1 hour. Participants will then have about 30-45 minutes on
their own before dinner.
- 7:30 PM Dinner at the Museum Reception Rooms (Gjestestueene) located at
Stoemsborgveien 2, Oslo
- 11:00 PM Shuttle departs Museum Reception Rooms for Hotels at 11:00 p.m. Taxis can be
ordered at own expense for individuals wanting an earlier departure.

Thursday, June 24

- 9:00 AM “Recent Developments in Research Council Assurance Program”
Gareth MacDonald, Head of Assurance, United Kingdom Biotechnology &
Biological Sciences Research Council
- 10:15 AM Break
- 10:30 AM “Controlling Costs Under Full Economic Costing & Demand Management”
Stuart Ward, Director, Corporate Services, United Kingdom Engineering &
Physical Sciences Research Council
- 11:45 AM Working Lunch Speaker: “Overview of INRA Funding Activities”
Michel Eddi, Deputy Director General, French National Institute for Agricultural
Research
- 1:15 PM “Controlling in the DFG Head Office”
Beate Wilhelm, Deputy Director, Budget Department, Deutsche
Forschungsgemeinschaft
- 2:15 PM “DFG Funded Projects and Administrative Misconduct”
Florian Habel, Head of Internal Audit Department, Deutsche
Forschungsgemeinschaft
- 3:00 PM Break

APPENDIX A

- 3:15 PM “Challenges of Managing, Overseeing and Auditing American Recovery and Reinvestment Act Funds”
Martha Rubenstein, Chief Financial Officer and Allison Lerner, Inspector General, National Science Foundation
- 4:00 PM “Accountability Challenges for International Translational Research”
Lynne Chronister, Assistant Vice Provost & Director of Sponsored Programs, University of Washington (video-conference)
- 5:00 PM “The Audit Committee: Challenges for a New Decade”
Jeremy Twomey, Head of Audit and Compliance, Science Foundation of Ireland
- 6:00 PM Close for the day

Friday, June 25

- 9:00 AM “Survey –Risk Management and Implementation Challenges”
Heidi Eriksen, Advisor, Internal Audit, RCN
- 9:45 AM “The Research Funding System in Spain”
Victoria Ley, Director, National Evaluation and Foresight Agency, Ministry of Science and Innovation
- 10:30 AM Break
- 10:45 AM “Extrapolation of Audit Results—the Expectation Gap”,
Serge Vanacker, Contracts Manager, European Commission Joint Research Center
- 11:30 AM “A Case Study in IT System Development at the Science Foundation of Ireland (SFI)”
Donal Keane, Chief Operations Officer and Paul McEneaney, Finance Manager, Science Foundation of Ireland
- Wrap-up Discussion/Conclude Workshop
- 12:15 PM Adjournment

PLEASE NOTE: All sessions will be conducted in English. Times of presentations and speakers may change. NSF Contact: Ms. Mary Pully, Assistant to Inspector General, NSF: mpully@nsf.gov or Heidi Eriksen, Adviser, RCN: heer@rcn.no

**2010 ACCOUNTABILITY IN SCIENCE
RESEARCH FUNDING WORKSHOP- Oslo, Norway
June 23-25, 2010**

List of Participants

<u>Country</u>	<u>Invitee</u>
European Commission	<p>Marc Bellens Head of Unit European Commission Research Directorate-General DG RTD-A.4 Square de Meeus 8, BE-1049 Brussels Belgium Phone: +32(0) 2 295 0942 Fax: 32(0) 2 296 1094 Marc.bellens@ec.europa.eu</p> <p align="right">Alternate contact: Mari-Cruz.Novoa-Garrido@ec.europa.eu</p> <p>Edwin Croonen Head of Internal Audit Unit DG RTD European Commission Square de Meeus, 8, B-1050 Brussels Belgium Phone: 0032 2 296 18 67 Fax: 0032 2 299-83-66 Edwin.croonen@ec.europa.eu</p> <p>Serge Vanacker Contracts Manager European Commission Joint Research Center Institute for the Protection of the Citizen Via Fermi, 2749 I-21027 Ispra (VA) Italy Phone: (+39) 0332/78.53.84 Fax: (++39) 0332/78.6465 Serge.VANACKER@ec.europa.eu</p>

France

Jean-Pierre Alix
Advisor to the President
Centre National de la Recherche Scientifique (CNRS) 3,
rue Michel-Ange
75794 Paris cedex 16
France
Phone : +33 1 44 96 48 63
Fax: +33 1 44 96 5342
Jean-pierre.alix@cnrs-dir.fr

Michel Eddi
Deputy Director General
Institut National de la Recherche Agronomique
(INRA)
147, Rue de l'Universite
75338 Paris Cedex 07
France
Phone: 00 33 1 42 75 92 12
Michel.eddi@paris.inra.fr

Michel Griffon
Deputy Director General
Agence Nationale de la Recherche
(ANR)
212 rue de Bercy F-75012 Paris
France
Phone: 33 (0)1 78 09 80 30
michel.griffon@agencerecherche.fr

Germany

Florian Habel
Head of Internal Audit Department
Deutsche Forschungsgemeinschaft (DFG)
Kennedyallee 40
53175 Bonn
Germany
Phone: +49 228 885 2609
Fax: +49 228 885 3010
Florian.Habel@dfg.de

Daniela Kniel
Deputy of Internal Audit Department
Deutsch Forschungsgemeinschaft (DFG)
Kennedyallee 40
53175 Bonn
Germany
Phone: +49 228-885 2409
Fax: +49 228 885 3010
Daniela.kniel@dfg.de

Beate Wilhelm
 Deputy, Budget Department
 Deutsche Forschungsgemeinschaft DFG
 Kennedyallee 40
 53175 Bonn
 Germany
 Phone: +49 228 885 2228
 Fax: +49 228 885 2599
Beate.wilhelm@dfg.de

Holland
 (The Netherlands)

Co de Vries
 Manager Finance and Control
 Netherlands Organisation for Scientific Research (NWO)
 Finance and Control
 Laan van Nieuw Oost Indië 300
 2593 CE Den Haag
 The Netherlands
 Phone: +31 0620347877
c.devries@nwo.nl

Gertjan Boshuizen
 Manager Finance & Control
 Leiden University
 Rapenburg 70, 2311 EZ Leiden,
 The Netherlands
 Phone: +31 (0) 71-527 3178
g.boshuizen@bb.leidenuniv.nl

Hungary

Andrea Balla
 Head of Department-Social Sciences and Humanities
 Committee
 Hungarian Scientific Research Fund
 H-1093 Budapest, CZUCZOR STR>10
 Hungary
 Phone: (36-1) 219 8725
 Fax: (36-1) 219 8756
balla.andrea@otka.hu

Ireland

Donal Keane
 Chief Operations Officer
 Science Foundation Ireland (SFI)
 Wilton Park House, Wilton Place
 Dublin 2, Ireland
 Phone: 00353-1-607-3248
 Fax: 00353-1-607-3201
donal.keane@sfi.ie

Paul McEneaney
Finance Manager
Science Foundation Ireland (SFI)
Wilton Park House, Wilton Place
Dublin 2
Ireland
Fax: 00353 1 607 3201
Paul.mceneaney@sfi.ie

Jeremy Twomey
Head of Audit & Compliance
Science Foundation of Ireland (SFI)
Wilton Park House, Wilton Place
Dublin 2
Ireland
Phone: 00353 1 607 3202
Fax: 00353-1-607-3201
Jeremy.Twomey@sfi.ie

Norway

Trine Tengbom
Director,
The Research Council of Norway (RCN)
P.O. Box 2700 St. Hanshaugen
N-0131 Oslo
Norway
Phone: 0047 92 65 92 84
tte@rcn.no

Heidi Eriksen
Adviser – Internal Audit
The Research Council of Norway (RCN)
PO Box 2700 St. Hanshaugen
NO-0131 Oslo
Norway
Phone: 0047 22 03 72 38
heer@rcn.no

Soenneve Oelnes
Executive Director for Administrative Affairs
The Research Council of Norway (RCN)
PO Box 2700 St. Hanshaugen
NO-0131 Oslo
Norway
Phone: +0047 22037074
soo@rcn.no

Portugal

Ligia Amancio
 Vice President
 Portuguese Foundation for Science & Technology (FCT)
 Avenue D. Carlos I, 126, 2 Andar
 1249-074 Lisbon
 Portugal
 Phone: (351) 213924378
 Fax: (351) 219 956 519
Ligia.amancio@fct.mctes.pt

Isabel Ribeiro
 Adviser of the Board
 Portuguese Foundation for Science & Technology (FCT)
 Avenue D. Carlos I, 126, 2 Andar
 1249-074 Lisbon
 Portugal
 Phone: (351) 213924378
 Fax: (351) 219956519
Isabel.ribeiro@fct.mctes.pt

Spain

Victoria Ley
 Director
 National Evaluation and Foresight Agency
 Ministry of Science and Innovation
 C/Ramirez de Arellano, 29, 4ª planta
 28071-MADRID
 Spain
 Phone: 916037825
 Email: victoria.ley@micinn.es

United Kingdom

Ian Carter
 Director of Research and Enterprise
 University of Sussex
 Sussex House SH-347
 Brighton, BN1 9RH
 United Kingdom
 Phone: +44 1 273 877718
 Fax: +44 1273 678192
i.carter@sussex.ac.uk

Gareth MacDonald
 Head of Assurance, Research Councils
 Biotechnology & Biological Sciences Research (BBSRC)
 Polaris House, North Star Avenue
 Swindon, SN2 1UH
 United Kingdom
 Phone: +44 (0)1793 413 222
 Fax: +44 (0)1793 413 201
Gareth.MacDonald@bbsrc.ac.uk

Stuart Ward
Director, Corporate Services
Engineering & Physical Sciences Research Council (EPSRC)
Polaris House, North Star Avenue
Swindon, Wiltshire SN2 1 ET
United Kingdom
Phone: 44 1793-444220
stuart.ward@epsrc.ac.uk

United States

Christine C. Boesz, Dr.PH
Former Inspector General
National Science Foundation
4201 Wilson Boulevard, Suite 1135
Arlington, VA 22230
USA
Phone: 703-292-7100
Fax: 703-292-9158
hogheaven@chesapeake.net

Lynne Chronister
Assistant Vice Provost for Research &
Director of Sponsored Programs
Office of Sponsored Programs, UW Box #359472
University of Washington
4333 Brooklyn Ave
Seattle, WA 98105
USA
Phone: 206-543-4043
lchronis@u.washington.edu

Deborah Cureton
Consultant to Inspector General
National Science Foundation
4201 Wilson Boulevard, Suite 1135
Arlington, VA 22230
USA
Phone: 703-292-7100
Fax: 703-292-9158
dcureton@nsf.gov

Kristen M. Cutforth
Attorney Advisor
Office of Inspector General, Suite 1135
National Science Foundation
4201 Wilson Boulevard
Arlington, VA 22230
USA
Phone: 303-312-7615 (Denver Office)
Fax: 703-292-9158
kcutfort@nsf.gov

Allison Lerner
Inspector General
Office of Inspector General
National Science Foundation
4201 Wilson Boulevard, Suite 1135
Arlington, VA 22230
USA
Phone: 703-292-7100
Fax: 703-292-9158
alerner@nsf.gov

Martha A. Rubenstein (Marty)
Chief Financial Officer\Director
Office of Budget, Finance, & Award Management, Suite 405
National Science Foundation
4201 Wilson Boulevard
Arlington, VA 22230
USA
Phone: 703-292-8200
Fax : 702-292-9255
mrubenst@nsf.gov

Assistant: Diane McKay mmckay@nsf.gov

Hai V. Tran
Director for Computing & Telecommunications
The U.S. Government Accountability Office (GAO)
441 G Street, N.W. Room 6K17G
Washington, DC 20548
USA
Phone: 202-512-6762
Fax: 202 512-6171
tranh@gao.gov