

Academy EASAC and ALLEA International Delegates Report 2015

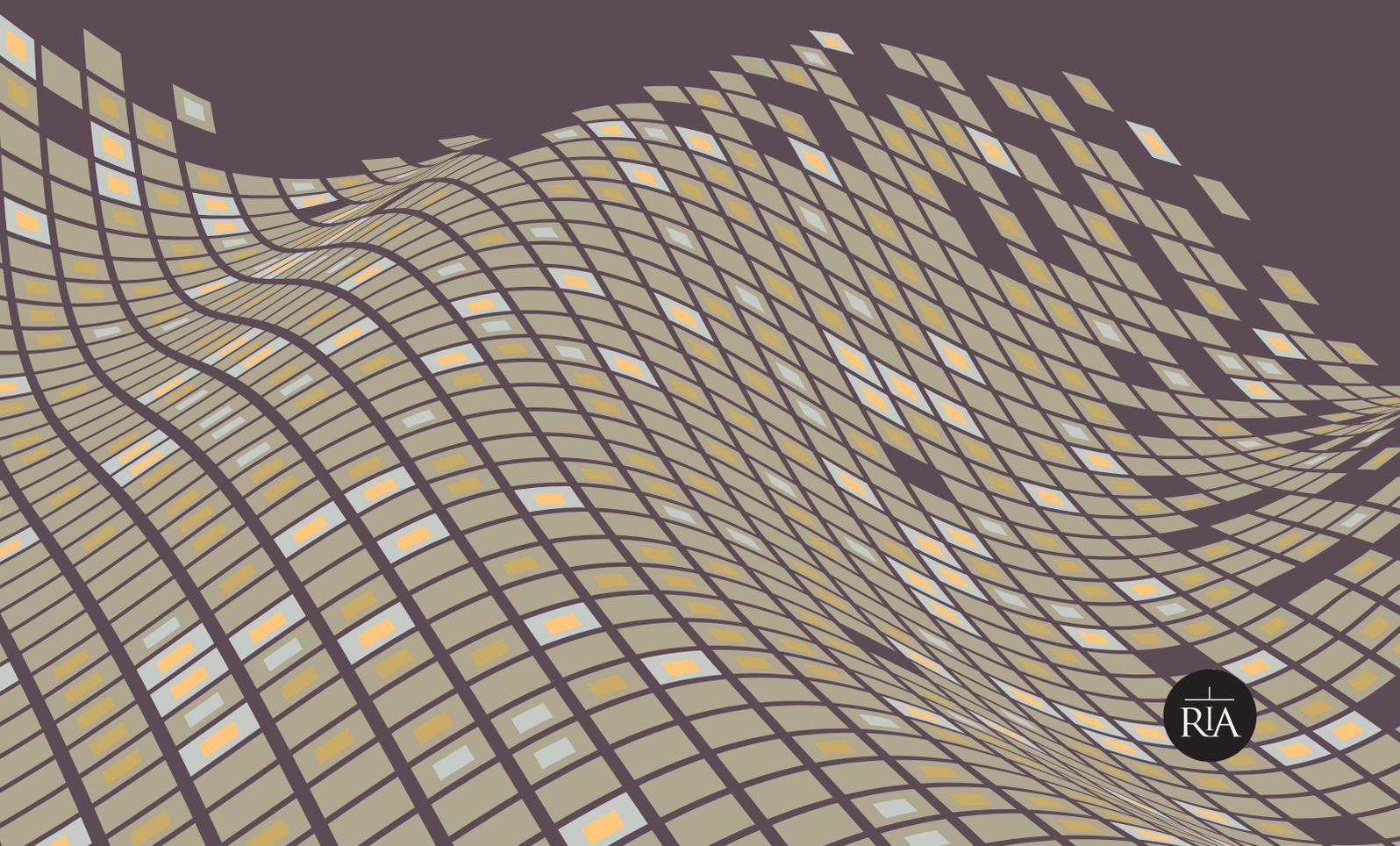


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Foreword

“Many of the world’s challenges are global and addressing them requires international collaboration.”



Professor Peter Kennedy

MRIA, Policy and International Relations Secretary
University College Cork

Through its active participation in the European Academies Science Advisory Council (EASAC) and the All European Academies (ALLEA), the Royal Irish Academy leverages coordinated European efforts to address issues of science for policy and policy for science. EASAC focuses on the scientific basis for policies related to energy, biosciences and the environment, while ALLEA is concerned with policies related to the practice of research.

Many of the world’s challenges are global and addressing them requires international collaboration. EASAC and ALLEA produce evidence-based reports and statements on matters of interest both to policy-makers and to the general public in Europe. During 2015, EASAC published position papers on “Gain of function”, “Marine sustainability” and “Ecosystem services, agriculture and neonicotinoids”, while ALLEA promoted research in the humanities and social sciences, as well as addressing issues related to intellectual property, scientific integrity and science education. RIA nominees contributed to all of these activities.

In this work, the Academy draws heavily upon its Members, Academy Committees and external experts who willingly offer their time and expertise to participate in working groups, review draft papers and advise on the effective dissemination of the resulting outputs.

I wish to express my particular appreciation to those who agree to represent the Academy and Ireland in international working groups: such a commitment is not to be entered into lightly and yet the Academy’s delegates fulfil it with great energy, enthusiasm and expertise.

Introduction

“Through its participation in EASAC and ALLEA, the Academy seeks to proactively contribute to the development of high-quality science advice on a range of issues which are of interest to policy makers both nationally and internationally.”



Dr John Maguire

Acting Head of Policy and International Relations

The Royal Irish Academy, through its engagement with key global research networks and policy agencies, plays a leading role in showcasing the expertise of Irish researchers and their contribution to informing international research policy. Through its participation in EASAC and ALLEA, in particular, the Academy seeks to proactively contribute to the development of high-quality science advice on a range of issues of interest to policy-makers both nationally and internationally. To do this, we draw heavily on our network of Members and committee members, to identify and nominate Irish experts to participate in scientific working groups and steering panels established by EASAC and ALLEA. We are lucky, and grateful, that such nominees, acting on the Academy's behalf, are prepared to offer their time and expertise to participate in deliberations and to review and draft papers. Through our successful breakfast briefing series we work to ensure the targeted dissemination of the findings of these various working groups to the broadest possible range of stakeholders in government, academia and civil society.

In 2015 the Academy was represented by its nominees on no fewer than ten EASAC working groups and four ALLEA working groups; the full breadth of the work undertaken is outlined by our delegates in the rest of this report. Milestones of particular note included the successful nomination of Dr Cliona Murphy, St Patrick's College, Drumcondra to the ALLEA Permanent Standing Committee on Science Education; Dr Maura Hiney, Head of Policy at the Health Research Board, to the ALLEA Permanent Standing Committee on Science and Ethics; and Ms Aifric O'Sullivan, Food Health Ireland, to the EASAC working Group in Food Security. There was also a series of successful breakfast briefings on recent reports issued by the EASAC working groups on Ecosystem Services, Agriculture and Pollinators and Gain of Function. In 2016 I look forward to further building on Ireland's successful reputation for engagement with EASAC and ALLEA in addressing global challenges, and wish to commend the work of our international delegates, without which none of this would be possible.

The European Academies Science Advisory Council

www.easac.eu

European Academies



EASAC – the European Academies Science Advisory Council – is formed by the national science academies of the EU Member States to enable them to collaborate with each other in providing independent science advice to European policy-makers. It thus provides a means for the collective voice of European science to be heard. The Royal Irish Academy was a co-founding member of EASAC in 2001.

With the growing importance of the European Union as an arena for policy, national science academies recognise that the scope of their advisory functions needs to extend beyond the national to cover also the European level. Through EASAC, the academies work together to provide independent, expert, evidence-based advice about the scientific aspects of public policy to those who make or influence policy within the European institutions. Drawing on the memberships and networks of the academies, EASAC accesses the best of European science in carrying out its work. Its views are vigorously independent of commercial or political bias, and it is open and transparent in its processes.

EASAC activities include:

- Substantive studies of the scientific aspects of European policy issues;
- Reviews and advice about policy documents;
- Workshops aimed at identifying current scientific thinking about major European policy issues;
- Workshops aimed at briefing policy-makers;
- Short, timely statements on topical subjects;
- Lay summaries aimed at communicating with non-expert audiences.

All European Academies

www.allea.org



ALLEA – the federation of All European Academies – was founded in 1994 and currently brings together 57 Academies in more than 40 countries from the Council of Europe region. Member Academies operate as learned societies, think tanks and research-performing organisations. They are self-governing communities of leaders of scholarly enquiry across all fields of the natural sciences, the social sciences and the humanities. ALLEA therefore provides access to an unparalleled human resource of intellectual excellence, experience and expertise.

Independent from political, commercial and ideological interests, ALLEA's policy work seeks to contribute to improving the framework conditions under which science and scholarship can excel. Jointly with its Member Academies, ALLEA is in a position to address the full range of structural and policy issues facing Europe in science, research and innovation. In doing so, it is guided by a common understanding of Europe bound together by historical, social and political factors as well as for scientific and economic reasons.

Report of the Academy's nominee to the EASAC Steering Panel on Environment



Professor Ger Kiely

MRIA, University College Cork

Professor Ger Kiely was elected a Member of the Royal Irish Academy in 2012. He is the Professor and Chair of the Civil and Environmental Engineering Department at University College Cork. He has a PhD in Environmental Hydraulics from University College Cork and a DSc from the National University of Ireland (2014) for his contributions to research. He was elected a member of the Irish Academy of Engineers in 2013. He is the Director of Hydromet, an interdisciplinary research group based at the Environmental Research Institute, UCC. The areas of Hydromet research include: greenhouse gas fluxes in terrestrial ecosystems (grasslands, peatlands and forestry); coupling of water, energy and the carbon cycles at the land–atmosphere interface; soil carbon sequestration; extremes in climate related to precipitation, wind and streamflow; hydrological and hydrochemical experiments and modelling in terrestrial catchments; flood event analysis, flood forecasting and flood warning. He has been a member of the EASAC Environment Steering Panel since September 2015.

The objective of the EASAC Environment Steering Panel is to provide independent leading-edge scientific assessments and advice to European Union (EU) environment policy communities, together with experts across the science academies of the EU. Topics are selected by the EASAC Council based on advice from the Environment Steering Panel, and encompass a wide range of environmental issues of interest to the EU (e.g. climate change, air/water quality, wastes and resources, biodiversity, ecosystems and sustainability). The Chair is Professor Lars Walloe (Professor Emeritus at the University of Oslo), and the Environment Programme Director is Mike Norton (Professor at Tokyo Institute of Technology).

The main outputs of the EASAC Environment Programme during the past 12 months include the following:

Facing critical decisions on climate change: October 2015

This statement has three main purposes: firstly, to provide scientific background to some issues with particular media misconceptions; secondly, to highlight some recent science (since the Fifth Assessment Report of the United Nations Intergovernmental Panel on Climate Change (IPCC AR5)) that has improved our understanding of the pace at which the climate is changing; and thirdly, to emphasise issues of particular importance to EU policy-makers. We start with a brief overview of current trends in emissions of carbon dioxide (CO₂). We go on to consider the importance of shorter-lived greenhouse gases (including CH₄) and the response of natural ecosystems to global warming. We highlight the importance of adaptation and resilience in parallel with mitigation.

On new scientific evidence, we provide a detailed explanation of why the media meme of a 'warming pause' is incorrect. We provide updated information on the rate of melting in the cryosphere (Arctic, Antarctic and Greenland), and local effects on the Gulf Stream. Our conclusion is that recent evidence suggests that climate model predictions are in some respects (particularly the cryosphere) overly conservative about the pace at which climate change is proceeding. This emphasises the urgency for the 2015 United Nations Climate Change Conference in Paris (COP21) not just to produce an agreement that can deliver the target of a 2 °C limit but to limit warming below that figure. This has major implications for the world's use of fossil fuels in the coming decades, the majority of whose reserves must remain unused this century if there is to be a 50% chance of limiting warming to 2 °C. We note that the EU's Climate and Energy policy framework for 2030 puts the EU in a position of leadership through its target of reducing emissions by at least 40% below 1990 levels. We thus recommend that, for COP21, the EU should:

- Negotiate energetically for an agreement that is capable of reducing emissions sufficient to limit global warming to less than 2 °C;
- Independently of the outcome of COP21, strengthen its leading position by implementing its commitment to reduce emissions by 30% by 2020;
- Emphasise the importance of parallel efforts to increase resilience to the risks posed by unavoidable climate change.

Marine sustainability in an age of changing oceans and seas: July 2015

EASAC has conducted a study on marine sustainability, in collaboration with the European Commission's Joint Research Centre, in recognition of the emerging governance challenges for integrating the various aspects of marine policy. The summary of the report was published as a scientific contribution to World Oceans Day.

Ecosystem services, agriculture and neonicotinoids. April 2015.

Some intensive agriculture has become reliant on neonicotinoids, with proponents arguing that their withdrawal would have serious economic and food security implications. However, EASAC notes that some recent research has questioned the benefits of routine use as seed dressing against occasional or secondary pests. In some cases, neonicotinoid use has even made pest problems worse by eliminating insects which provided natural pest control. As the EASAC report acknowledges, all pesticides involve a balancing act between the desired effect on food production and the inevitable risk of collateral damage to non-target species and the environment. In the case of the neonicotinoids, the increase in scientific knowledge over the past two years suggests that the current balance requires reassessment. These conclusions were discussed in a public debate at an EASAC event in Brussels on 13 April 2015.

Currently the Steering Panel is guiding work on current projects and discussing possible new projects which may be initiated in the next 12 months.

Current projects

Sustainable forests and multifunctional use. This major effort led by the Finnish Academy and the University of Helsinki is seeking to identify key scientific issues regarding the increasing competition for forestry resources from diverse demands – energy, raw materials, ecosystem services, biodiversity, carbon sink and so on. The separate emergence of EU policy measures in separate fields is leading to potential conflicts between these uses, and the project seeks to identify key issues and science related to them.

Circular economy project. An initial report on economic and natural science aspects of the debate on the circular economy is about to be published. The Steering Panel has encouraged this to be issued as far ahead as possible of the EU policy announcement anticipated in December 2015. The Panel has also discussed other follow-up studies related to the circular economy.

Possible future topics

The Panel discusses possible subjects for future study at its six-monthly meetings. Those currently under consideration include:

- Water supply and shortages in the EU;
- Value and fragility of soils in Europe;
- The relationship between food production and carbon footprint – especially the high methane emissions from livestock production.

I look forward to joining the Panel and its work over the next few years, following on from the very active role played by the Irish Academy's previous nominee (John Sweeney). Recent reports have had a significant impact on the policy debate on a wide range of environmental issues and I am informed that on some issues, the Irish Academy's nominee has been highly appreciated and seen as most constructive (for example Jane Stout in the Neocotinoids report).

Report of the Academy's nominee to the EASAC Steering Panel on Biosciences



Professor Richard O'Kennedy
MRIA, DCU

Professor Richard O'Kennedy was elected a Member of the Royal Irish Academy in 2014. He is a founding member and Professor in the School of Biotechnology in Dublin City University (DCU) and currently is Scientific Director of the Biomedical Diagnostics Institute. He has supervised 60 PhDs, published extensively (over 220 peer-reviewed papers, 25 reviews, 35 book chapters, two books), reviews for many journals and international scientific bodies, has several patents and licensed technologies/reagents and works closely with Irish/international companies.

The objective of the Biosciences Panel is to explore where the scientific evidence base can help to inform policy development in other priority areas for the European Institutions, particularly in health and agriculture and in the progression of novel technologies with potentially multiple applications. EASAC's Biosciences Panel is very active in preparing papers and views on topics of key importance to scientific research, specifically in Europe but also globally. It has members drawn from across the EU and their level of expertise and inputs are very impressive. The value of EASAC is that it provides an excellent opportunity for interaction with other European Academies and to present a scientifically informed view that has wide support, is viewed positively by the EU and the associated legislators and ensures that key issues are addressed in a timely fashion. The Secretariat is excellent and is very effective in informing the relevant bodies and agencies at the appropriate levels to gain impact. The quality of reports and discussion papers is high and the format very attractive.

I represent the Academy at meetings of EASAC's Biosciences Steering Panel. In cases where the topic area is outside my expertise this is referred to the Academy and input from members within the Academy, with the relevant expertise, is sought and is actively given.

Several significant issues have arisen over the past 12 months. There was a proposal from an anti-vivisection group that the EU ban the use of animals for any research purposes. I alerted the Academy to this issue and in conjunction with EASAC a response was agreed and this was sent to the EU. The outcome was that the EU has agreed to the continued use of animals in research but stricter regulations will be invoked, with great emphasis on the minimisation of usage. This will be reviewed again in 2016.

I was involved in developing opinion papers related to evaluations of publications and food integrity (Lead), and this is ongoing. In addition I have prepared a paper highlighting the need for balance between funding for basic and applied research and it is hoped that this will be discussed at future meetings. This is in line with inputs from the Academy and associated committees on this topic at a national level.

The EASAC report on “Gain of function” was published in October.

Professor Bert Rima was the Academy’s representative on the associated expert working group which considered issues related to modification of the influenza virus, including biosecurity, risk–benefit analysis and information publication. An event took place in the Academy highlighting this work at the end of October.

EASAC has prepared a number of position papers on issues of significant concern. This includes the development of antimicrobial drug resistance, a global issue which needs significant inputs and is recognised as having major implications for disease control and human and animal health.

It also considered Genome editing, which involves the use of more precise approaches to modify the genome (in particular CRISPR-Cas9) and has implications for interventions in animal populations (gene drive) and human disease (as well as for plant breeding), and EASAC panel members expressed interest in June that EASAC should consider this topic in the future.

There is also interest in examining whether the continuing controversy about homeopathic products in some Member States provides an opportunity for work by EASAC.

Following discussions on the topic of personalised medicine in June and members’ review of draft output from the meeting, a summary was published. Personalised medicine is also a priority topic for the current Luxembourg Presidency of the EU Council, and will be discussed by the Council of Health Ministers in December.

The EASAC panel has also discussed new breeding techniques and their implications and synthetic biology.

This panel provides an excellent forum for discussion, involvement of Academy Members in specific working groups related to their expertise, and inputs to topics of major concern to the scientific community and to the EU generally.

Report of the Academy's nominee to the EASAC Steering Panel on Energy



Professor Mark J. O'Malley

MRIA, University College Dublin

Professor Mark O'Malley was elected a Member of the Royal Irish Academy in 2008 and is a Fellow of the Institute of Electrical and Electronic Engineers. He is founding Director of the Electricity Research Centre and Director of the UCD Energy Institute, a multidisciplinary, multi-institutional, industry-supported research activity. Mark is also co-founder of the International Institute for Energy Systems Integration (iiESI), a global community of scholars and practitioners engaged in developing an efficient world energy system. He is recognised as a world authority on grid integration of renewable energy and has active research collaborations in Europe, China and the United States, in particular with the National Renewable Energy Laboratory.

Background

I was appointed to the EASAC Energy Steering Panel in 2010 following my participation in the study on Transforming Europe's Electricity Supply – An Infrastructure Strategy for a Reliable, Renewable and Secure Power System. The remit of our Steering Panel is to provide independent expert advice from member academies on the scientific and technical issues impacting on Europe's energy policy. The Energy Programme draws upon leading scientists and engineers who are working in Europe on energy issues, to develop robust advice on key issues pertaining to energy. The Steering Panel advises on the focus of the Energy programme, peer reviews outputs, and makes inputs to energy debates internationally. Once a project has been agreed upon by the Steering Panel, working groups are formed to formulate EASAC's response.

Summary of Panel activities'

Meetings

The Panel met in the Finnish Academy in Helsinki on 5 May 2015 and in the Belgian Academy in Brussels on 13 October 2015. A framework for selecting new energy projects is being developed and an exercise in ensuring the Panel has the correct skills is being conducted.

Reports published

In the past 12 months, two new Energy projects have been started, the EASAC Energy Panel has contributed to the work of the EASAC Environment Panel on shale gas and oil sands, and existing Energy reports have been promoted, but no new EASAC Energy reports have been published.

Promotion of current reports

Management of spent nuclear fuel and its waste – promotion of the EASAC/JRC report (published in September 2014) is still ongoing. Successful events in 2015 were hosted by the National Science Academies in Bratislava (SK) 9 June, Budapest (HU) 10 June, Bergen (NO) 16 June and Vilnius (LT) 17 June.

Shale gas – An event in Poland, 18 June 2015. No further events are planned by the Energy Panel to promote this report.

Current projects

Electricity storage (Chaired by Mark O'Malley) – The project was kicked off at Imperial College in London on 1 April 2015; a second meeting was held on 26 June in Cologne and a third meeting on 15 October in Brussels, preceded by an open workshop (supported by the JRC) to which Commission experts, other Brussels-based stakeholders and EASAC Steering Panel members contributed on 14 October. A draft report has been prepared and the final meeting will be held in Dublin on 23/24 March 2016.

Sustainable Forests (with EASAC Environment Panel) – A successful kick-off meeting was held on 26/27 May 2015 in Helsinki, and the second project meeting was held on 29/30 October. Work has started on the preparation of draft texts, and publication of a report is scheduled for summer 2016.

Smart Villages – Following on from a scoping study in 2012 funded by the Malaysian Commonwealth Studies Centre (MCSC), EASAC and MCSC are undertaking a study of sustainable energy provision to enable the creation of “smart villages” in Africa, Asia, the Caribbean, and Central and South America.

Breakthrough technologies – Comments on draft texts were provided to the project leader from the Swedish academy in May 2015, and publication in the AMBIO journal is scheduled for early in 2016.

Looking towards 2016

A prioritisation framework for the selection of future projects was discussed at the October meeting and a short list is emerging. One clear topic that is emerging is Energy for Transport.

¹ Edited extract Dr William Gillett, EASAC Energy Programme Director Progress report, May–Sept. 2015 and EASAC website.

Report of the Academy's nominee to the EASAC Working Group on Dual Use/Gain of Function



Professor Bert Rima

MRIA, Queen's University Belfast

Bert Rima was appointed Professor of Molecular Biology in 1993. His main research interest is to use techniques to genetically modify human pathogenic viruses such as mumps and measles virus and the evaluation of the mutant viruses in animal model systems including ferrets and macaques. His work now centres primarily on how viruses are attenuated for vaccines and what barriers prevent animal viruses from infecting humans and vice versa.

What problem has the group addressed?

In the specific context to be considered, "gain of function" refers to the experimental modification of the influenza virus to manipulate its transmission potential with the aim to provide understanding of the possible pandemic implications (i.e. the ability of an animal virus to spread by aerosol to man). The current controversy relates to differing views on the scientific soundness and relevance of individual research studies, but the concerns are relevant to EU (and Member State) policy in several respects. There are issues for:

- How to define benefits and risks in proposed experiments (and who defines them);
- Advising on biosafety and biosecurity implications;
- Deciding the appropriate balance between statutory regulation of research (and restriction of research) and scientific self-governance;
- Communicating research outputs including the issue of whether publication of sensitive results is desirable;
- Engaging with the public.

Some of the concerns elicited by GoF studies on H5NI or other avian flu variants also apply to work on characterising or manipulating other potential pandemic pathogens. Dual use research issues are not confined to pathogens: concerns have been raised in other scientific areas, for example the cognitive sciences and neurosciences. However, the current group was composed of experts in infectious disease research.

The group has met three times and formulated recommendations for the establishment of processes that balance the ethical considerations associated with the potential risk of these scientific studies and the benefits that they may have. The scientific community has been here before, when, for example, in the early 1970s the risks associated with genetic manipulation were recognised, discussed, quantified and finally mitigated through regulation.

The group recommended in the area of control, EU regulation and mitigation:

- Emphasis on a layered approach with integration of responsibilities and action at researcher, research institution, research funder, national and international levels;
- Focus on biosafety, but biosecurity also recognised as important;
- Good practice requires conforming with regulations/safety conditions/codes of conduct, justifying proposed research.
- Self-regulation means checks and balances on research within the scientific community, and requires raising awareness of researchers and their institutions, with need for education;
- Importance of inclusion of guidance for GoF research funded by Horizon 2020 as well as at national level;
- Importance for all researchers and their institutions of conforming with EU regulations as implemented nationally;
- No new EU-level body is recommended;
- Member States should have clear national regulations.

The group recommended in relation to risk assessment:

- It is not a “once and for all” calculation but a continuing, collective commitment to understand and communicate the issues;
- Benefit can be quantified as potential public health impact or described in terms of generation of scientific knowledge.

The group recommended in relation to publication of sensitive material, public engagement and the global context:

- Researchers and their institutions all have responsibility to make decisions about publishing sensitive information;
- Journals should obtain appropriate advice, including from security experts;

- European Commission's Export Control Regulations are an inappropriate and ineffective vehicle to block publication;
- Trust and openness are crucial for researchers and their institutions;
- Countries worldwide vary in their standards, national guidelines, legal frameworks and attitudes to benefit–risk balance.
- Collectively, there is much more to do to understand, share and implement good practice.

Academies and others in the scientific community should actively participate in public dialogue – articulating objectives for research, potential for benefit and risk, and biorisk management practices adopted. Academies should also consider what they can do to help convene and inform global discussions. The group delivered its report to the EU commission on 21 October 2015 and the commission has responded to the recommendations. No further meetings of this group are planned.

Report of the Academy’s nominee to the EASAC Working Group on Ecosystem Services, Agriculture and Neonicotinoids



Professor Jane Stout

Trinity College Dublin

Jane Stout has a PhD in pollination ecology from Southampton University, and has worked at Trinity College Dublin since 2001, first as a post-doctoral Research Fellow and subsequently as Lecturer and research group leader. She is now a Professor in the School of Natural Sciences in Trinity College Dublin and her research focuses on how human activities (especially changes in land management and non-native species invasions) affect biodiversity and ecosystem services, mostly using plant–pollinator interactions as a model system. She co-led the development of the All-Ireland Pollinator Plan, a multi-stakeholder plan of action for pollinator conservation across the island of Ireland.

EASAC was asked by the European Commission to conduct a review of the scientific evidence of the impacts of one group of systemic insecticides, the neonicotinoids, on bees and other pollinators. This was as a result of the controversial moratorium on the use of three neonicotinoids on certain EU crops, implemented in late 2013. However, given a European Food Safety Authority (EFSA) review on the same topic and current legal actions against the Commission from industry, the terms of reference of the working group were broadened to place the neonicotinoid insecticides in the wider context of agricultural ecosystem services, including pollination.

The EASAC Environment Steering Panel formed a working group comprising 13 scientists from 10 European academies, plus the Steering Panel Secretary. I was the Royal Irish Academy nominee to the working group, which met three times in 2014 and corresponded electronically in between. The report “Ecosystem services, agriculture and neonicotinoids” (EASAC policy report 26, www.easeac.eu) was published on 15 April 2015 and launched at a stakeholder event in Brussels, which I attended as a panel member.

The report outlined the ecosystem services relevant to agricultural production and their economic value, clarified trends in ecosystem services that are important to agriculture, reviewed neonicotinoids in the context of organisms that provide ecosystem services in agriculture, put neonicotinoid use into the wider context of relevant EU policy and made recommendations for decision-makers. The report concluded that:

1. Ecosystem services provide significant economic benefits to agriculture, and maintaining strong functional ecosystem services is a critical part of a sustainable agricultural system;
2. Biodiversity has significant positive impacts on the provision of ecosystem services but is also an objective in its own right under global and European international agreements;
3. Insects providing ecosystem services have shown major declines in recent decades;
4. Protecting honey bees is not sufficient to protect pollination and other ecosystem services;
5. There is an increasing body of evidence that the widespread prophylactic use of neonicotinoids has severe negative effects on non-target organisms;
6. There is clear evidence for sublethal effects of very low levels of neonicotinoids over extended periods on non-target beneficial organisms;
7. Current practice of prophylactic use of neonicotinoids is inconsistent with the basic principles of Integrated Pest Management as expressed in the EU's Sustainable Pesticides Directive;
8. Widespread use of neonicotinoids constrains the potential for restoring biodiversity in farmland under the EU's Agri-environment Regulation.

The report was presented at a breakfast briefing in the RIA in Dublin on 22 April 2015. It attracted considerable interest in the media (TV, radio, print and online) and contributes to EFSA's reassessment of the evidence for the effects of neonicotinoids on bees.

Report of the Academy’s nominee to the EASAC Working Group on the Circular Economy (CE) and the ALLEA “Science Meets Parliament” Event



Geraldine A. Cusack

Siemens Ireland

Geraldine A. Cusack is a chartered engineer and a chartered water and environmental manager and has a Bachelor’s Degree in Geology (engineering) and Master’s degree in Energy (economics & environmental legislation). Geraldine’s technical background (geological engineering, mineral resources, and environmental hydrogeology) and project work has been focused in environmental consulting throughout the US, in Ireland & UK, Azerbaijan (Baku), Chile (Antofagasta). Geraldine works in the Energy & Environmental Services (Sustainability) division of Siemens Industry (Digital Factories) in Dublin and helps to drive and implement the European Energy Efficiency Directive for Siemens Plc Manufacturing sites (UK & Irl).

Background

In April 2015 Geraldine was nominated by the RIA to be a member of EASAC on the Circular Economy (CE) Working Group. In August 2015 Geraldine was nominated by the RIA through invitation from ALLEA under the heading Circular Economy to take part in a series of bilateral meetings with MEPs. The European Commission (EC) Joint Research Centre (JRC) “Science meets Parliaments” event was organised at the European Parliament in Brussels, Belgium, on 15 September 2015, and a preparatory training seminar took place with the JRC on 14 September.

a) EASAC Circular Economy Working Group

The first EASAC CE working group meeting was held at the Swiss Academies of Arts and Sciences in Bern, Switzerland in August 2015 to discuss our draft CE statement. The commentary document was approved by the group members and thereafter underwent an external peer review. There is much complexity around the topic and many different perspectives on the interaction between the underlying theories, policy and practice, so the document reflects the many viewpoints for consideration by the EC.

The EASAC Final Commentary on this issue is a joint reflection by experts in our academies and provides background on certain natural and social science aspects relevant to the development of policy on the CE. The EASAC CE commentary is expected to be sent to the EC in October to inform EU plans for revised proposals for a more ambitious CE strategy and will be used to inform debate on the principles and broad approach to the topic. The focus of the group's work is to consider the potential economic and climate change benefits of increasing the efficiency with which resources are used in the EU, and thereby contributing to the EU vision of a "Resource Efficient Europe" which is an important part of the "Europe 2020 Strategy".

Three main comments in the 2015 commentary are presented. Firstly, on the question of subsidies as a policy instrument, there is a substantial literature in environmental economics showing that subsidies are often inferior to tax and other instruments. There are cases when subsidies may be effective instruments, but the reasons should be clearly stated.

Secondly, the importance of the role of the waste management regime in driving (or potentially hindering) transition to a CE is recognised in both the EC and the European Parliament (EP). EASAC notes that a critical issue is how to set the regulations and criteria for determining when recycled waste ceases to be treated as waste, and therefore becomes a resource, a raw material or a product. Currently only three EU regulations have established such criteria (for some scrap metal, glass cullet and copper scrap), yet technology and the industry are allowing a much wider range of materials to be recycled. A priority will be to ensure that future regulations do not impede the full deployment of available technologies and development of new businesses.

Thirdly, valuable case studies already exist within the EU and its industries and EASAC will address these and other issues in later, more detailed reports on the CE.

The plans for 2016 include completing a report on broader issues yet to be decided by the working group but related to terms of reference from EASAC Council. These may include:

1. Economics of resource efficiency (effects on business and competitiveness of greater resource efficiency);
2. Design and manufacturing for a resource-efficient economy (eco-design, materials, cradle to grave, etc.);
3. Relations of resource efficiency to external environmental impacts (including environmental impacts outside the EU of primary resource extraction, effects in the EU on greenhouse gas emissions and climate change policy);
4. Waste management and recycling technologies (technological possibilities to increase effectiveness of resource reuse).

b) ALLEA

The rationale for coordinating the recent “Science Meets Parliaments” event hosted by the JRC in September 2015 was to improve a culture of evidence-informed policy making, effective communication and regular exchanges between scientists and policy-makers. The event was organised for the first time at the EU level and followed the successful example of several Member States and EP Science and Technology Options Assessment (STOA) events. The Science Meets Parliaments event aimed to enhance existing relations between the two communities and contribute to improving their mutual understanding and collaboration.

Geraldine was nominated for the Science Meets Parliaments bilateral meetings via the RIA, and consequently MEP Benedek Jávor (Hungary) selected Geraldine to meet with him in Parliament Offices on 15 September 2015 to discuss the topic “Circular Economy, Resource Efficiency”.

Report of the Academy's nominee to the ALLEA E-Humanities Working Group



Dr Natalie Harrower

Director (Acting) of the Digital Repository of Ireland

Dr Natalie Harrower is the Digital Repository of Ireland's Director (Acting), where she leads a number of leveraged projects, including Inspiring Ireland 1916 (as part of the Ireland 2016 programme of commemorations) and the Digital Arts and Humanities PhD programme contributions for the Academy. Natalie plays an active role in a variety of international research projects and e-infrastructures, including the Research Data Alliance via an H2020 project, and she recently founded the new international conference series DPASSH: Digital Preservation for the Arts, Humanities and Social Sciences (June 2015). Natalie was appointed Secretary to the ALLEA E-Humanities Working Group in 2013.

The ALLEA E-Humanities Working Group was established on 5 November 2012 at the founding meeting in the Berlin-Brandenburg Academy of Sciences and Humanities. Our Working Group addresses the digital humanities, humanities data, open access for data, trusted digital preservation, and sustained e-Infrastructures, repositories and digital tools for the humanities.

Over the course of 2015, the focus of the group was on writing and publishing *Going Digital: Creating Change in the Humanities* – a report on the state of the digital humanities in Europe, framed as a position paper outlining the group's recommendations for continued growth and excellence in digital humanities. The report was presented to the ALLEA AGM in April 2015, and launched on 7 May 2015 in Brussels at a roundtable address to policy-makers from the EC, the European Parliament, HERA, and several national academies/research councils. As the Royal Irish Academy's representative and the group's Secretariat, I edited and co-authored the report, and presented it alongside Dr Sandra Collins, the working group's Chair.

The key recommendations of the report are as follows.

Take a long-term view:

Sustaining long-term archives of unique and important cultural artefacts is critical for Europe's leadership in digital humanities. We recommend a move to funding models which are not project-based, the certification of digital infrastructures, appropriate funding evaluation, pan-European policies and strategies, and adoption of best practice in digitisation and metadata standards and vocabularies. Researchers should look to large organisations such as the Research Data Alliance and DARIAH for best practices.

Encourage openness:

An open approach to data enables research integrity, increased secondary research and cost-effective data production. Open Access should be incentivised and increasingly mandated, data management plans should be required with all funding proposals, and data archiving costs should be included as eligible costs. Training and open repository services should be openly available, and standardised data citation should be adopted and recognised.

Support your people:

In digital humanities the people are no less important than the infrastructures and technologies. Career progression models should include recognition for the importance of data activities including data design, collection, curation, and management. Specialist training should be funded, openly accessible and certified. The roles in data management, such as data librarian, data scientist and data archivist, should be recognised in the research community as trained and skilled roles.

In 2016 our E-Humanities Working Group will continue our outreach and consultation activities with the European Commission and the Research Data community, and will launch a new programme of actions to promote European engagement with the digital humanities.

