

European Science, Engineering and Technology Highlights¹ SEPTEMBER 2013

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¹ Note: If you would like additional information or background, please feel free to contact either Carine Polliotti at cpolliot@nsf.gov or Ana Helman at ahelman@nsf.gov



1 European Research Council Takes a Further Step Forward towards Open Access by Joining arXiv



The European Research Council (ERC) announced that it has joined an international partnership supporting arXiv, one of the major scientific repositories in the areas of physics and mathematics which is operated by Cornell University Library (New York, US). The ERC is the first European research funding organization to join the arXiv initiative. By doing so, the ERC reaffirms its commitment to open access and to ensuring that the fruits of the research it funds can be freely accessed, read and used, both by scientists working in relevant areas and by the public.

Full article available at:

http://erc.europa.eu/sites/default/files/press_release/files/ERC_press_release_arXiv.pdf



2 EU Grants for 25,000 young researchers under Horizon 2020



From 2014-20, 25,000 young researchers will receive grants from the Marie Skłodowska-Curie Actions (MSCA) program, which has a budget of €4.7 billion (US\$6.2 billion). This follows the reaching of an agreement on the European Commission's 8th Research Framework Program Horizon 2020. Horizon 2020 is the financial instrument implementing the Innovation Union, a Europe 2020 flagship initiative aimed at securing Europe's global competitiveness. Within Horizon 2020, Marie Skłodowska-Curie Actions is a dedicated European Union (EU) program for researchers' skills development, with industry participation being mandatory in most sub-programs.

The achievements of the past Framework Programs (FPs) in Horizon 2020 have been significant, with 60,000 researchers of 130 different nationalities having received support and training since 1996. More than half of the research supported through framework programs has been in the fields of health, climate change and energy. Around 37% of the participants have been women, and the program has purposely included small- and medium-sized enterprises, since the labor market for doctoral candidates is likely to shift towards the private sector in future.

The Marie Curie part of the FP has been oversubscribed in terms of number of applications. The most popular part of Marie Curie Actions in FP7 was the Initial Training Networks, where more than 5,000 consortia filed applications during the five rounds of calls from 2007-12. The success rate was close to 10%, with the initiative supporting almost 500 consortia and financing more than 10,000 PhDs.

Horizon 2020 is now emphasizing even stronger links between education, research and innovation, with this knowledge triangle being seen as a cornerstone. It is now expected that business will be integrated into the research part of the doctoral training. The agenda for Horizon 2020, with calls for proposals expected to be published in December, urges synergy between MSCA and the other parts of Horizon 2020 – the Excellent Science initiative, focus on societal challenges, industrial doctorates and the European Institute of Technology. There are also plans to promote synergy with the Erasmus+ program and possibly also with the huge EU structural funding requested by the European parliament. The

European Institute of Technology-supported Knowledge and Innovation Communities (KIC) networks, which are based on the knowledge triangle, will receive a €2.8 billion (US\$3.71 billion) tranche from Horizon 2020.

Full article available at: <http://www.universityworldnews.com/article.php?story=20130912164339654>

3 “European Research Council Goes Global” Campaign Continues to China



The European Research Council (ERC) is visiting China from 2 to 7 September to inform top researchers about its funding opportunities and to foster relations with its Chinese counterparts. As part of the awareness-raising campaign “ERC goes Global”, the tour will take the ERC delegation to leading universities and research institutions in Beijing, Shanghai, Hangzhou, Wuhan, Xi'an and Harbin. They will also meet with the National Natural Science Foundation of China (NSFC) in Beijing.

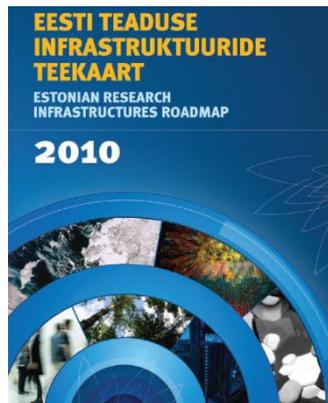
European Research Council ERC Secretary General Prof. Donald Dingwell, who leads the delegation, commented: "The European Research Council is excited about visiting China; a powerhouse for research in Asia. We hope to forge closer ties, learn from each other and raise the levels of support for the best researchers. The ERC's substantial funding is open to top talent from anywhere in the world. We are confident that Chinese researchers will respond to this remarkable opportunity in Europe. This is not the first time the ERC goes to China, and it won't be the last."

The ERC funds leading researchers from anywhere in the world, and their innovative ideas across all disciplines, with up to €3.5 million (USD 4.6 million) per grant. Since the ERC's launch in 2007, it has awarded €6.3 billion (USD 8.3 billion) to over 3,800 scientists performing frontier research in Europe - both early-career and senior.

Source:

http://erc.europa.eu/sites/default/files/press_release/files/ERC_Highlight_global_campaign_China_2013.pdf

4 Updating the Estonian Research Infrastructures Roadmap



The Estonian Ministry of Education and Research in cooperation with the Estonian Academy of Sciences has launched a program for compiling the Estonian research infrastructures roadmap. Pursuant to the development trends of Estonian and international research, the needs of modernizing the existing research infrastructure are mapped along with initiatives for establishing new infrastructure. The roadmap is a long-term (10-20 years perspective) planning instrument, which lists research infrastructure units of national importance which are either new or in need of modernizing. The roadmap is regularly updated (3-5 year cycles) in order to take into account the changing needs and opportunities. The inclusion of infrastructure in the roadmap does not mean it will be funded or ranked; the roadmap is rather an input for investment decisions which are under preparation.

Research infrastructure is defined as facilities (laboratories, equipment, machinery, collections, archives, structured information or their complexes), conditions, knowledge, methods, materials and the activities and services related to them, used with the purpose of research and development activities, creating new

knowledge as well as transmitting, exchanging and/or preserving knowledge. The list of the objects in the Estonian research infrastructures roadmap includes:

1. Estonian e-Repository and conservation of collections;
2. Estonian Centre for Genomics;
3. Centre of Estonian language resources;
4. Estonian Environmental Observatory;
5. Estonian beamline at MAX-IV synchrotron radiation source
6. Estonian magnet laboratory (EML)
7. Estonian participation in ESS (European Social Survey)
8. Estonian participation in the European Organization for Nuclear Research (CERN)
9. Estonian PET-Centre
10. Estonian structural biology infrastructure (ESI)
11. Estonian Scientific Computing Infrastructure
12. Estonian research and education optical backbone network
13. ESS – European Spallation Source
14. Estonian participation in the European Space Agency;
15. Estonian participation in the European Southern Observatory;
16. Natural history archives and information network (NATARC);
17. Baltic Sea regional research vessel
18. Nanomaterials – research and applications
19. National centre for translational and clinical research
20. Plant biology infrastructure – from molecules to high-technology agriculture

More information available at: <http://www.etag.ee/research-funding/estonian-research-infrastructures-roadmap/?lang=en>



5 Academy of Finland Poised for More Powerful Role in Science Policy



An international evaluation report published today by the Ministry of Education, Science and Culture paints a very positive picture of the activities of the Academy of Finland. In the report, the results and quality of the Academy's operations receive top marks. The reviewers note that the Academy is internationally an outstandingly cost-effective organization. On the whole, researchers seem to be satisfied with the Academy's application, evaluation and decision-making processes.

The report also proposes a more extensive role for the Academy in terms of science policy. Professor Heikki Mannila, President of the Academy of Finland, welcomes this proposal: "The recommendation is a clear sign of the high regard in which the Academy's reliability and expertise in science policy are held." The report further proposes that the Academy of Finland draft an internationalization strategy in collaboration with the Ministry of Education, Science and Culture, the Ministry of Employment and the Economy, Tekes and other key players. "The key here is cooperation. The reviewers strongly recommend that the drafting of a national strategy concerning the internationalization of Finnish science and research be a joint undertaking," Mannila underlines.

Source: <http://www.aka.fi/en-GB/A/Academy-of-Finland/Media-services/Releases1/Academy-of-Finland-poised-for-more-powerful-role-in-science-policy/>



6 University of Athens on Strike



Athens University, Greece

The rector of the country's largest university has said that the institution has no choice but to strike against the government's plans to remove hundreds of its administrative staff. Theodoros Pelegrinis, the head of the University of Athens, said the government's so-called mobility scheme would leave the university unable to function. He was speaking a day after the university senate voted to keep the college closed until next Monday. This means that the registration of incoming students, which was supposed to begin on September 11, will be postponed. Freshmen have until September 27 to enroll. Unions say that of the 6,239 administrative staff at third-level institutions across the country, the government is seeking to place 1,765, or 25%, in its mobility scheme, which will end in dismissal if another job for them cannot be found in the public sector.

In an interview on Skai TV, Pelegrinis said the university was facing its worst crisis in a decade. Although its state's subsidy had been halved since 2009, the university was able to function, Pelegrinis said. But the decision to move staff out as part of the mobility scheme has led to an "impasse", meaning it can no longer function. "Considering the operating needs of the university, the number of 1,300 staff is not excessive," the rector said, pointing to possible implications for the health sector given that the university supports 66 clinics in public hospitals. Reports suggest that Pelegrinis' university could lose up to 500 staff members under the mobility scheme. Countering allegations that the universities are sabotaging efforts to create more efficient third-level institutions, Pelegrinis noted that the University of Athens has already carried out an assessment of its staff. According to university's general director of administration, Panagiotis Fotopoulos, while the US has 9.5 administrators per 100 students and the UK 7.9, at the University of Athens the ratio is just 2 per 100. In addition, the US and UK have 8.7 and 7.3 teaching staff per 100 students while Athens has 3.1 per 100.

Full article available at: <http://www.enetenglish.gr/?i=news.en.newsmain&id=1463>



7 New Norwegian National Strategy Gives Momentum to ICT Research



In the new strategy document, the Norwegian Government points to quality, value creation and benefit to society as areas of particular focus. The strategy encompasses a broad range of sectors and industries and will have a major impact on the growth and prosperity of Norwegian society at large – as evidenced by the fact that it has been signed by a full 15 government ministers. “The Research Council provided input to the process of drawing up the strategy based on analyses of ongoing research in addition to dialogue with key actors in industry and the rest of society,” explains Anne Kjersti Fahlvik, Executive Director of the Research Council's Division for Innovation. “We are pleased to see that our views have been integrated into the strategy.” “One of our clearest recommendations has been to strengthen the foundation for research by focusing on quality, researcher recruitment and the internationalization of Information and Communication Technologies (ICT) research. Basic research and recruiting researcher talent are critical for the private and public sectors alike.” “The ICT strategy's emphasis on internationalization of research very much aligns with Research Council philosophy,” continues Ms Fahlvik. “Research is by nature international, and we are dependent on access to the best international research as well as top-notch international researchers if we are to satisfy our needs for ICT knowledge.”

The strategy points out that Norway's social and economic welfare are closely tied to ICT. The document stresses three important areas of focus: information security, ICT in the public sector, and infrastructure in health and health care services.

Full article available at:

http://www.forskingsradet.no/en/Newsarticle/New_national_strategy_will_give_momentum_to_ict_research/1253989075786



8 Polish government proposes assignment of ownership of inventions to academics not their employing institutions



The Polish Ministry of Science and Higher Education published proposed amendments to the law on higher education and passed it for public consultations, which stipulate the assignment of ownership of inventions to academics not their employing institutions, alongside additional regulations, facilitating technology transfer by university-owned companies.

According to the proposal, researchers employed by public higher education institutions and students would retain rights to their inventions. This presents an exception from the general rule related to the employee inventions, which in the Polish legal system belong to their employers.

Universities would be entitled to 10%-25% of future profits, derived from the future commercialisation. The proposed regulation is expected to stimulate the commercialisation of research results by offering direct financial motivation to scientists and simplifying technology transfer processes, which are currently complicated due to the applicability of regulations concerning public finance. The same act stipulates also that transfers of intellectual property rights between universities and their special-purpose company, dealing with technology transfer, will not be subject to public procurement regulations and will not require consent of the Minister of Treasure.

Source:

http://erawatch.jrc.ec.europa.eu/erawatch/opencms/information/country_pages/pl/highlights/highlight_001

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9 Planned government budget cuts to affect public R&D expenditures, but the expected impact remains limited



The Polish government submitted on August the 21, 2013 to the parliament a plan for wide-ranging budget cuts in response to the lower than expected economic growth in the first half of the year. The proposed savings include also 3.2% reduction of the science budget for 2013 (decrease by 160.2m PLN). The savings will affect among others two R&D funding agencies. The annual budget of the National Science Centre (NCN), funding basic research, will be reduced by approximately 1.6% (decrease by 15m PLN - USD 4.6m),

and the National Center for Research and Development (NCBiR), distributing funds for applied research, will have its budget cut by approximately 5.4% (subtracting 70m PLN - USD 21.7 m from previous plans). At the same time, the amended science budget for 2013 maintains the previously agreed investments, as well as the planned increases in remuneration for scientists employed by public sector organizations. The cuts to NCN and NCBiR budgets are not alarming, when taking into account past performance in executing budgets. In 2012, the expenditures in the science budget amounted to 92.57% of the original plan, so actual annual savings amounted to 7.43% of the budget. NCN managed to spend 96.80% of its awarded budget, and NCBiR - 95.36%.

Source:

http://erawatch.jrc.ec.europa.eu/erawatch/opencms/information/country_pages/pl/highlights/highlight_001

7



10 Four months after the mass resignation of the members of the Romanian National Council for Scientific Research, their positions are still vacant



Appointments for the National Council for Scientific Research (NCSR) are still pending. NCSR is responsible among others for coordinating three programs of the National Research, Development and Innovation (RDI) Plan 2007-2013 (i.e. Ideas, People, Capacities). All members of the NCSR resigned on 12 April 2013, motivating their decision by the reduced allocation of public R&D expenditure in the national budget for 2013 and the

associated decisions of cutting the budgets for the undergoing projects, postponing the announcement of the accepted projects from the 2012 competitions, and the interruption of calls on certain financing lines. Replying shortly thereafter to the message of the NCSR members, the Delegate Minister for Research Mr. Mihnea Costoiu declared (according to Mediafax) that the budget for 2013 has in fact slightly increased compared with the previous years, but that the success rate for projects having started these years was not sustainable in a multiannual planning.

Source:

http://erawatch.jrc.ec.europa.eu/erawatch/opencms/information/country_pages/ro/highlights/highlight_000

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11 Russian Government Approves Universities for World-Class Bid



Tomsk Polytechnic University,
Russia

The Russian government has officially approved the list of leading universities that will receive state subsidies this year of RUB592 million (US\$20 million) each to help improve their images in the international arena and their positions in global university rankings. The selection process, which was conducted by the Ministry of Education and was based on an evaluation of universities' development programs, led to the listing of several of the country's leading technical universities. They include Tomsk Polytechnic University, the Higher School of Economics, Moscow, the Engineering Physics Institute, the Moscow Institute of Steel and Alloys and the National Research University of Information Technologies, Mechanics

and Optics. According to state plans, the funding should help at least five domestic universities make the list of the top 100 of the world's leading universities by 2020, which is in accordance with a directive recently issued by Russian President Vladimir Putin. The government also intends to allocate funds to strengthen the connection between the country's leading universities and the national defense industry. It is planned that a portion of the 'world-class' funds will be used to promote Russian universities abroad, and to organize tours for Western journalists to Russian universities. There are also plans to create a website profiling top institutions.

Full article available at:

<http://www.universityworldnews.com/article.php?story=20130911144451887>



12 The Spanish National Research Council (CSIC) is under a major budget crisis

The Spanish National Research Council (CSIC) is dealing with one of its largest budget crisis in years.



Since 2010, the CSIC has suffered large budget cuts from the government, with approximately 500 million Euros (USD 660 million) of total reduction.

The council needs 100 million Euros (USD 132 million) to make it to the end of the year. The government has injected 25 million Euros (USD 33 million) and promised to advance some payments coming from scientific projects.

The CSIC has absorbed the savings of its institutes to deal with the cash shortages. The decision has raised important concerns among the directors of its institutes about the sustainability of the centres. The budget assign to the institutes does not guarantee the renewal of research contracts and the operationalisation of running projects. More than 100 directors sent a letter to the government explaining

the consequences of the current financial situation last 19 July. Researchers of the organisation launched a new campaign to collect support from other researchers and citizens. The initiative has collected more than 235,000 signatures through and on-line call that were sent to the government on 30 July. The CSIC is the Spain's largest scientific organisation with about 15,000 employees and one of the most important research performers of the country, with about the 20 per cent of the national scientific production.

Source:

http://erawatch.jrc.ec.europa.eu/erawatch/opencms/information/country_pages/es/highlights/highlight_00

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13 Spanish Universities Launch 'Adopt a Student' Scheme



Spanish universities are considering a move to set up charitable funds so that private individuals can sponsor the studies of those from low income families. "In the same way that one might sponsor-a-child (in the Third World) individuals could sponsor a student in Spain by contributing to their tuition fees," explained Adelaida de la Calle, the dean of Malaga University and chair of Association of Spanish University Deans. The emergency measure is being considered after figures showed that some 30,000

students are on the verge of abandoning their studies at the start of the academic year because they can't meet tuition or living costs. Access to state sponsorships have been restricted leaving students from low-income families struggling to fund further education at a time when youth unemployment in Spain has soared to a record 56 per cent. Enrolment fees for bachelor degrees at public universities in Spain vary between €680 (USD 900) and €1280 (USD 1670) per academic year depending on the regional authority responsible. The fee payable by students amounts to between 15 to 25 per cent of the total cost of the degree. Fees at private universities are far higher.

Public funding of universities has been cut by 12.3 per cent – €1.2 billion (USD 1.6 billion) since 2010 as part of a series of austerity measures designed to slash Spain's public deficit.

Source: <http://www.telegraph.co.uk/news/worldnews/europe/spain/10289213/Spanish-universities-launch-adopt-a-student-scheme.html>



14 Is Sweden Recovering from the International Student Crash?



Uppsala University, Sweden

Swedish universities are looking to build on the first signs of recovery in the international student market, following the collapse in overseas applications when 'full-cost' tuition fees were introduced for non-European students in 2011. But they face a massive uphill task. Many feel more should be done to sweeten the attractiveness of Sweden's higher education, with improved scholarships, greater flexibility in the application process and liberalization of the post-study work environment. The number of international applicants fell dramatically, from 132,000 in 2010 to 15,000 in 2011, as University World News reported two years ago. This was after students from outside the European Union and European Economic Area – EU-EEA – were told to find around €10,000 (US\$13,300) a year to study for a bachelor or masters degree at a Swedish university – or apply for one of the very limited

scholarships that the government introduced to try to soften the blow. At a stroke, for thousands of Indian, Pakistani, African and Chinese students, the cost of fees for studying in Sweden became almost the same as going to a British or American university. The result was a fall of 79% in newly enrolled non-EU

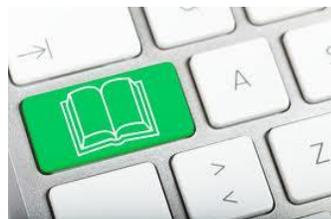
students for the start of the 2011-12 academic year – a drop from 7,600 to just 1,600, according to the Higher Education in Sweden – 2013 status report, published by the Swedish Higher Education Authority. Numbers did recover in 2012, but only by a meager 7% and meant that just 1,700 ‘free-mover’ students from outside the EU-EEA started degrees in Sweden last autumn.

Full article available at:

<http://www.universityworldnews.com/article.php?story=20130912120237809>



15 UK Parliamentarians Urge Government to Reshape Push for Open-Access Publishing



British parliamentarians are urging the government of the United Kingdom to alter its plans for transitioning to open-access (OA) publishing of research results. In a report released, a committee of the House of Commons says the government should encourage greater use of free institutional repositories, rather than OA journals that charge per-paper fees for publishing. Traditionally, journal publishing pays for itself by charging subscriptions for its journals. This, however, limits access to research to those who can afford subscriptions. Research funders worldwide are pushing to encourage more OA publishing, in which papers are free to anyone, so that results can spread wider and more quickly to those who can make use of them. The problem is that OA publishers have to find another way, apart from subscriptions, to finance their work. Some charge scientists an “article processing charge” (APC), while others are subsidized by governments or other bodies.

Last year, the U.K. government declared that it wanted to move toward OA publishing for all publicly funded research and called on universities to pay researchers’ APCs out of existing funds. Also, during a 5-year transition period, the government would continue to finance libraries paying for journal subscriptions so that researchers could continue to see research from abroad published in non-OA journals. Many objected to this policy because APCs would eat into already scarce research funding.

There is an alternative to APC-funded OA (also known as gold OA), in which researchers publish their papers in any journal and then place the peer-reviewed final draft into a free-to-access repository run by their university or other body. Some non-OA journals will allow this practice, but others require the paper to remain under embargo for a period, usually 6 months. Known as green OA, this scheme is considered by some as a transition arrangement until full gold OA is viable.

In its report, the House of Commons’ committee recommends that the government amend its policy to favor green OA during the transition and promote standardization and compliance among repositories.

Full article available at: <http://news.sciencemag.org/europe/2013/09/u.k.-parliamentarians-urge-government-reshape-push-open-access-publishing>

