



FEDERATION OF EUROPEAN SOCIETIES
OF PLANT BIOLOGY

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FESPB Newsletter

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In this issue:

- Letter from the FESPB Secretary	2
- FESPB Congress 2010	3
- Research news	4
- Opinion: Organic or GMO?	5
- Forthcoming meetings	7
- Summer Courses	13
- Positions available	14
- Other news	17

Letter from the FESPB Secretary

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FESPB Congress 2010

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XVII Congress of the Federation of European Societies of Plant Biology (FESPB).

4-9 July 2010. Valencia, Spain.

Welcome to FESPB 2010!

On behalf of the FESPB 2010 Organising Committee, we are delighted to invite you to participate in the XVII Congress of the Federation of European Societies of Plant Biology (FESPB) to be held in Valencia, Spain on 4-9 July 2010.

The Congress is organised by **SEFV** (<http://www.sefv.net/>), the Sociedad Española de Fisiología Vegetal. SEFV was founded in 1974 and has over 600 members highly active in both, Academia and Education, and promoting our knowledge of plant physiology and adaptation. □□The scientific programme of the FESPB 2010 will cover most aspects of modern plant biology. The aim is to offer a conference with the highest scientific quality in which novelty on multidisciplinary approaches including systems biology, genetics, molecular cell biology and biochemistry, and ecophysiology will be presented. □□Valencia is a dazzling destination. A melting pot of 2000 years of diverse cultural influences that mingle with modern trends to create a city of spectacular contrasts. Valencia offers a wide variety of options to the visitor, including beaches, countryside, mountains and areas of cultural interest besides the possibility to enjoy an excellent gastronomy.

The Conference will take place at the “Palacio de Congresos”, a building designed by Norman Foster and equipped with the most advanced technologies. The Organising Committee is determined to host a Congress that will be both scientifically rewarding and socially enjoyable.

We look forward to seeing you in Valencia at FESPB 2010.

Manuel Sánchez Díaz □ (President of SEFV)

José Pío Beltrán □ (President of FESPB)

Please, visit the Congress web site for updated information:
<http://www.geyseco.es/fespb/principal.php>

Research News



Developmental Patterning by Mechanical Signals in Arabidopsis

Hamant et al. 2008. *Science* Vol. 322. no. 5908, pp. 1650 – 1655.

A central question in developmental biology is whether and how mechanical forces serve as cues for cellular behavior and thereby regulate morphogenesis. We found that morphogenesis at the Arabidopsis shoot apex depends on the microtubule cytoskeleton, which in turn is regulated by mechanical stress. A combination of experiments and modeling shows that a feedback loop encompassing tissue morphology, stress patterns, and microtubule-mediated cellular properties is sufficient to account for the coordinated patterns of microtubule arrays observed in epidermal cells, as well as for patterns of apical morphogenesis.

Molecular biology: RNA repair

Nature **457**, 639 (5 February 2009)

The machinery involved in the RNA interference (RNAi) pathway may protect genomes against some accidental changes in how DNA is chemically modified, geneticists have found. Modifying DNA by adding methyl groups is a common way in which cells silence certain genes, but methylation can erode over time, making the silencing less effective. Vincent Colot at the École Normale Supérieure in Paris and his colleagues studied *Arabidopsis thaliana* mutants that have reduced DNA methylation throughout the genome. They crossed these mutants with normal plants and found that methylation gradually returned to some genes in offspring that no longer carried the mutation. Previous research had shown that methylation doesn't return once lost. Sites that were remethylated complemented the sequence of small RNA molecules that are involved in RNAi; methylation was not restored in mutants that did not make these RNAs.

Ca²⁺/calmodulin regulates salicylic-acid-mediated plant immunity

Du et al. *Nature* advance online publication 4 January 2009

The authors report a mechanism connecting Ca²⁺ signal to salicylic-acid-mediated immune response through calmodulin, AtSR1 (also known as CAMTA3), a Ca²⁺/calmodulin-binding transcription factor, and EDS1, an established regulator of salicylic acid level. These results reveal a previously unknown regulatory mechanism linking Ca²⁺ signalling to salicylic acid level.

Arabidopsis MAP kinase 4 regulates gene expression through transcription factor release in the nucleus

Qiu et al. *The EMBO Journal* (2008) **27**, 2214–2221.

Little is known about how plant MAP kinases regulate specific gene expression. The authors report that, in the absence of pathogens, *Arabidopsis* MAP kinase 4 (MPK4) exists in nuclear complexes with the WRKY33 transcription factor. This complex depends on the MPK4 substrate MKS1. Challenge with *Pseudomonas syringae* or flagellin leads to the activation of MPK4 and phosphorylation of MKS1. Subsequently, complexes with MKS1 and WRKY33 are released from MPK4, and WRKY33 targets the promoter of *PHYTOALEXIN DEFICIENT3* (*PAD3*) encoding an enzyme required for the synthesis of antimicrobial camalexin. Hence, *wrky33* mutants are impaired in the accumulation of *PAD3* mRNA and camalexin production upon infection. These data establish direct links between MPK4 and innate immunity and provide an example of how a plant MAP kinase can regulate gene expression by releasing transcription factors in the nucleus upon activation.

The nature of selection during plant domestication

M.D. Purugganan & D.Q. Fuller. *Nature* 457, 843-848 (12 February 2009)

Plant domestication is an outstanding example of plant-animal co-evolution and is a far richer model for studying evolution than is generally appreciated. There have been numerous studies to identify genes associated with domestication, and archaeological work has provided a clear understanding of the dynamics of human cultivation practices during the Neolithic period. Together, these have provided a better understanding of the selective pressures that accompany crop domestication, and they demonstrate that a synthesis from the twin vantage points of genetics and archaeology can expand our understanding of the nature of evolutionary selection that accompanies domestication.

Comforting proteins

A dehydrin protein from *Rhododendron* plays a key role in freezing tolerance due to protection from cellular dehydration caused by extracellular freezing. Rajeev Arora and co-workers from Iowa State University have shown that purified *RcDhn5*-encoded acidic SK₂ type dehydrin can protect enzyme activity against dehydration in *in vitro* assays. When the gene was constitutively expressed in *Arabidopsis*, the transgenic plants exhibited increased freezing tolerance without prior cold acclimation. With cold acclimation, however, the effect was less pronounced. This is apparently due to dilution of the *Rhododendron* dehydrin by less effective native dehydrins.

Read full article free: Peng et al. (December 2008) *Physiologia Plantarum* 134: 583-597.

Nobel Prize for GFP Researchers

The Nobel Prize for Chemistry 2008 was awarded to Green Fluorescent Protein (GFP) Researchers Shimomura, Chalfie, and Tsien. This award is as much a celebration of basic research as it is an acknowledgement of the achievements of three accomplished researchers. An exciting and mysterious phenomenon, bioluminescence has been studied by scientists and philosophers for centuries. In his classic 1952 treatise on bioluminescence, E. N. Harvey quotes Pliny the Elder, Aristotle and other ancient scholars who were captivated by bioluminescence and sought to learn its secrets. Even the word luciferin has ancient roots, coming from the Roman god Lucifer, originally the bearer of light (later the god of the underworld). The successes celebrated a few months ago all have their roots in hundreds of years of basic research-research for the sake of research.

Opinion

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Organic or GMO?

From: <http://www.spps.kvl.dk/cgi-bin/SPPS.pl> (SPPS)

Facing two global crises of immense impact on humanity - the food crisis and global warming - agricultural practices have once again become a central issue of debate. An emerging middle class in China, Asia and South America wants meat from grain-fed animals, but at the same time more and more farmers are growing maize and sugar cane for production of biofuels rather than food or feed. In June 2008, Ban Ki-moon, secretary-general of the UN, called for a 50% increase in global food production by 2030, and Monsanto - the world's leading producer of transgenic seed - was quick to offer its assistance. Claiming that transgenic seeds would be part of the solution, a company spokesman promised to deliver seeds of maize, soybeans and cotton with two times the yield and 30% less requirement of water and fertilizer within that timeframe.

But not everybody agrees, that GMO is the way to go. While transgenic crops blossom in many parts of the world, Europeans have remained skeptical and until this summer, GMO's were hardly discussed in the media. The opponents claim that sustainable organic farming is the only responsible solution, since the environment is already challenged by climate change. But are things really that simple? Are organic farming always friendly to the environment and the climate, and are GMO's really the top yielding crops that can deliver? A couple of scientific reports that emerged during 2008 indicate that the answer is more complex.

In his Master thesis, geography student Jakob Majcher from University of Copenhagen, calculated the total emission of CO₂ from beer produced by organic or conventional farming. The conclusion was that the organic beer had a 12% higher impact on the environment with regard to emission of the greenhouse gas. The main reason is a lower yield from organic barley and hops, which requires a larger acreage to grow the raw materials needed for production of the same amount of beer. This effect is enforced by the fact that the organic hops has a weaker taste so more raw material is needed. On top of this, organic hops for the Danish beer was grown in Tasmania and had to be transported over a long distance, and since more intensive harrowing and other field work is required for organic farming the total use of fossil fuels exceeded that of conventionally farmed hops and barley.

Evaluation of the benefits of organic farming depends to a great extent on how one will balance land use efficiency vs. environmental stress. In other words, is it better to grow low yielding organic crops that uses very little harmful pesticides on a large field, or to grow higher yielding GMO's requiring more pesticides on a small field and then use the rest of the land for recreational use or 'wild nature'? Another dilemma is the energy use. Some researchers have pointed out that imported organic produce emits more CO₂ than locally grown crops from intensive farming. And yet others say that this doesn't really matter, since the bigger part of the CO₂ emission comes from the consumers car, when he drives to the supermarket.

Also the idea of high yielding GMO's got a blow during the year, as the British newspaper *The Independent* cited a scientific report for concluding that genetic modification actually cuts the productivity of crops. They referred to a three year study by Professor Barney Gordon at University of Kansas where he was comparing how conventional and Monsanto's glyphosate-resistant soybeans reacted to manganese fertilizers. The newspaper concluded that the "GM soya produces about 10 per cent less food than its conventional equivalent, contradicting assertions by advocates of the technology that it increases yields." Though data from the report could give such an indication, Barney Gordon found this a gross misrepresentation of his research.

In a statement published shortly after the news had appeared in media all over the world, the scientist stated that his experiments were designed only to compare manganese accumulation of two varieties of soybean, and that the results could not be expanded to conclude on conventional vs GMO. Furthermore, Monsanto's soybean only gave a lower yield when no manganese were applied, whereas it actually yielded 8% more at the highest rate of manganese fertilization where the conventional variety was depressed.

In 2006 the US Department of Agriculture (USDA) published a survey on the experiences from the first decade of growing GMO's (www.ers.usda.gov) and the impression was generally positive. Herbicide tolerant cotton and corn was associated with higher returns, while insect resistance in the same crops only paid off under prevalent pest manifestation. Herbicide tolerant soybeans, on the other hand, did not directly improve the farmers returns, but the simpler handling of GM soy allowed them to save management time and thus to generate a higher off-farm income. Adopters of GMO's also used less pesticide and the herbicide resistant crops seem to reduce soil erosion due to less need for tillage.

At present there seems not to be any single solution to the food and climate crises - whether organic or GMO crops - and probably the best solution will be a careful and well-balanced mix of the two farming practices.

Forthcoming meetings



Advances in Plant Virology □

1-3 April 2009 – Warwick, United Kingdom.

The programme for this conference will be open to any topics or areas within basic or applied plant virology, will include all current areas of interest to Plant Virologists and will consist of presentations by invited speakers as well as offered papers by conference delegates. It is hoped to hold a forum to discuss the future of plant virology around the world.

More information:

<http://www.aab.org.uk/contentok.php?id=73&basket=wwsshowconfdets>

The BIT's 2nd World Congress of Industrial Biotechnology 2009

BIT's 6th Life Spring Forum

Celebrating 60 years of Prof. Arnold L. Demain's Science on Industrial Microbiology

5-7 April 2009. Seoul, South Korea.

This spring, it is our greatest honor to host one of the world's leading industrial microbiologists and a pioneer in research on industrial microbiology, who is Dr. Arnold L. Demain. This forum is to celebrate Dr. Demain's 60 year's devotion to science. To congratulate Dr. Demain in person and join this not-to-be-missed event, please visit: <http://bit-ibio.com/lifespring.asp>

The Second European Ramularia Workshop – A New Disease and Challenge in Barley Production

7-8 April 2009 – Edinburgh, United Kingdom □

Ramularia collo-cygni is a relatively new disease to cause economic losses in barley throughout Europe. This workshop provides researchers, plant breeders and crop consultants with an opportunity to contribute and to learn more about recent discoveries about the pathogen, varietal resistance, forecasting methods and practical disease control.

More information:

<http://www.aab.org.uk/contentok.php?id=72&basket=wwsshowconfdets>

The 4th international □ 'Genomics in Business' conference

Innovations and business strategies in the Agro - Food sector

19-21 April 2009 – Amsterdam, the Netherlands.

Visit 'Genomics in Business' and find out about the latest innovations and commercial applications of Genomics in the Agro - Food sector. This conference has established a reputation as a global meeting place for high profile management, successful entrepreneurs, leading scientists and key investors. Is your business in ornamentals, vegetables or field crops? Are you working in agro, new fuel crops or food research, or related fields? Then don't miss out on this opportunity to learn about the latest research discoveries in Agro-food genomics, and discuss international partnerships, commercial applications, viable business ventures and best industry practices.

Speakers at the 'Genomics in Business' conference are renowned industry leaders, visionaries and scientists, executives of cutting-edge companies and business analysts.

More information: <http://www.genomicsinbusiness2009.com/>

Total Food 2009 □

22-24 April 2009 – Norwich, United Kingdom □

Total Food 2009 is the third in a series of biennial international conferences which focus on the sustainable exploitation of agri-food co-products and related biomass, thereby helping to minimise waste. This event will provide a forum to highlight recent developments and to facilitate knowledge transfer between representatives of the agri-food industries, scientific research community, legal experts on food-related legislation and waste management, and consumer organisations.

More information: <http://www.ifr.ac.uk/totalfood2009/index.html>

2nd EMBO Conference on Plant Molecular Biology: 'Frontiers in Plant Research' □

6-9 May 2009 – Cadiz, Spain □

Plant molecular biology has gained a prominent relevance for the understanding of basic biological processes as well for the basic sector of applied agricultural research, for environmental protection, for the pharmaceutical industry, among others. Emphasis of this EMBO Conference will be given to epigenetics and RNA biology, cell division and differentiation, organogenesis, hormone perception and signaling, abiotic stress and defense mechanisms and membrane biology.

More information: <http://cwp.embo.org/cfs2-09-06/>

Research Connection 2009 □

7-8 May 2009 – Prague, Czech Republic □

Are you a scientist, full of new ideas? Or an entrepreneur, looking for solutions? Or perhaps a researcher, willing to take the international challenge? Realise your dreams and get support for your projects. We want to know you! The budget of the European Commission for research and innovation is increasing every year and we can show you how to participate. You will get first-hand information about priorities, objectives and participation rules. We will bring you into contact with experienced researchers from successful European projects, giving you the opportunity to meet reliable partners for your projects. Selected EU-funded projects will be exhibited. This will promote the networking and integration of research activities in Europe.

More information:

http://ec.europa.eu/research/conferences/2009/rtd-2009/index_en.cfm

Plant Abiotic Stress – From Signalling to Development □

14-17 May 2009 – Tartu, Estonia

The meeting is organized by the European Union COST Action FA605 – International Network of Plant Abiotic stress (INPAS). The goal of INPAS is to build an international network of plant abiotic stress. The research priorities of the action are centered on complementary expertise allocated into four Working Groups: Functional characterization of protein kinases. Genetic identification of signaling factors. Expression of genes involved in the production of osmo-protectants. Integrated molecular analysis of the polyamine metabolic pathway.

More information: <http://www.ut.ee/INPAS/>

Integrated Agricultural Systems: Methodologies, Modelling and Measuring

2-4 June 2009 – Edinburgh, United Kingdom □

The aim of this conference is to explore and identify effective methodologies, modelling and measuring techniques to analyse integrated systems. These systems are, by their very nature, complex and many interacting factors determine their development. It is now widely recognised across the scientific community and policymakers that issues such as climate change, biofuels and food security, impacts of agriculture on the environment, animal health and welfare, and

agricultural policy and regulations are best addressed through an integrated systems approach. This timely and topical conference is being organised jointly by the Association of Applied Biologists, the British Society for Animal Science and the Agricultural Economics Society to discuss this rapidly developing area and share insights into how problems can be resolved. Conference participants will consider how recent research can enhance our understanding of how changes in the biophysical, economic and social environment are likely to impact on agricultural production and ecosystem services, and the wider implications for society.

More information:

<http://www.aab.org.uk/contentok.php?id=74&basket=wwsshowconfdets>

Co-Extra Conference 'Coexistence and Traceability of GM and non-GM Products in Food and Feed Supply Chains' □

3-5 June 2009 – Paris, France

The Conference will present the results of four years of scientific research within the Co-Extra EU Project (European Commission research project in the 6th Framework Program priority 5 - Food Safety and Quality) and discuss how these integrate with other EU and international studies to provide information for the management of GMOs and their products from farm to fork.

Invited presentations on the results of other related EU research projects (SIGMEA and Transcontainer) and also from representatives of non-EU countries will provide a broader picture of current knowledge both within and outside in Europe. □□Based on the outcomes from these projects, on international experience and on the contributions of Co-Extra, discussions will take place on how GM and non-GM production and supply chains can be managed to suit European and international requirements. □□The conference will be of particular interest to scientists, policy makers, operators in food and feed chains, regulators, the media and consumer organisations.

More information: <http://www.coextra.eu/news/news1274.html>

4th International Plant Dormancy Symposium

8-11 June 2009. □Fargo, ND, USA.

This symposium is the fourth in a series following those in Oregon USA, 1995; in France, 1999; and in The Netherlands, 2004. Its goal is to bring together experts and stakeholders in a forum for exchange of information on dormancy in plants, development of collaborations, and sharing of ideas on plant dormancy mechanisms in vegetative buds, seeds, and other meristems from a variety of experimental plant systems ranging from agronomic, horticultural, and tree crops to model plants and weeds.

Contact info@plantdormancy.com

More information: □<http://www.plantdormancy.com>

2009 Polyamines Gordon Graduate Research Seminar

20-21 June, 2009. Waterville Valley, NH.

The second Gordon Research Seminar (GRS) on Polyamines will precede the Polyamines Gordon Research Conference (GRC) June 21-26, 2009. The 2009 Polyamines GRS will be a unique opportunity for all graduate students and postdoctoral fellows with an interest in any aspect of the polyamine field. This is an exciting field that brings together scientists using mammalian, fungal, plant, and microbial models to study polyamines in the context of metabolism, transport, gene regulation, cancer and disease etiology, enzymology, drug discovery and development, pharmacology, and structural biology.

Contact: Andrew Goodwin. E-mail: agoodwi9@jhmi.edu

Additional information can be found at the following website:

http://www.grc.org/programs.aspx?year=2009&program=grad_pola

The 8th International Symposium on the Plant Hormone Ethylene

21-25 June 2009 □. Cornell University, Ithaca, New York, USA. □

An international conference on all basic and applied aspects of ethylene. The Symposium web site contains information about the program, invited speakers, abstract submission, registration, travel, housing and about Ithaca.

Web site: □ <http://www.hort.cornell.edu/ethylene/index.html>

Phoenix 2009 Symposium - Protein Complexes in Plant Signalling and Development □

25-27 June 2009 – Glasgow, United Kingdom □

The Phoenix Symposia were launched in 2003 as focused meetings on topics at the forefront of research in plant cell biology, signalling and development. Phoenix 2009 will address relevant issues of protein complex biochemistry and function in plants and will bring together researchers with otherwise disparate backgrounds in order to stimulate discussion.

More information: <http://www.psrq.org.uk/events/Phoenix.htm>

17th European Biomass Conference & Exhibition – From Research to Industry and Markets □

29 June - 3 July 2009 – Hamburg, Germany □

The main reference for the world's leading Biomass experts. More than 1,500 participants from more than 70 countries are expected to attend and learn about the latest breakthroughs in the field. The Exhibition, taking place in parallel with the Conference, will feature the foremost companies and state-of-the-art products in the Biomass industry.

More information: <http://www.conference-biomass.com/index.htm>

20th International Conference on Arabidopsis Research □

30 June - 4 July 2009 – Edinburgh, United Kingdom □

The largest annual international scientific conference dedicated to the model plant *Arabidopsis thaliana*.

Highly successful ICAR meetings have been held worldwide including Beijing in 2007 and Montreal in 2008. 2009 will see Edinburgh, the capital city of Scotland, host the 20th International Conference on Arabidopsis Research (ICAR) ICAR for its 20th anniversary meeting. Over 1000 delegates from all over the globe will come to the beautiful and vibrant city of Edinburgh to learn about, and discuss recent advances in Arabidopsis research.

More information: <http://arabidopsis2009.com/>

FEBS Conference 2009

Prague, 4-9 July 2009

<http://www.febs2009.org/>

Plant Genomics and Beyond

5-8 July 2009 – Evry, France □

"Plant Genomics and beyond" intends to bring together world leaders, scientists and students interested in plant genomics. The conference will bridge basic scientific issues such as evolution, cell signaling, transcription, proteomics and post-translational controls, to very applied topics that form the basis of modern agriculture, including domestication, polyploidization and heterosis. An outlook into future concepts of plant genomics will be given by discussing advanced concepts of systems biology, comparative genomics and bioinformatics.

More information: <http://www.plant-genomics.org/index.htm>

21st "International Conference on Virus and other Graft Transmissible Diseases of Fruit Crops"

5 - 10 July 2009. Neustadt/Weinstrasse, Germany.

<http://www.phytomedizin.org/icvf.html> or <http://www.icvf.phytomedizin.org/>

Please Note: Deadline for submission of abstracts has been extended until 28th February 2009

Plant ROS 2009 □

8-10 July 2009 – Helsinki, Finland

The Society for Free Radical Research Plant Oxygen Group would like to announce a meeting on reactive oxygen and nitrogen species in plants.

In the tradition of the previous POG conferences, the 2009 ROS meeting in Helsinki will feature keynote lectures by renowned scientists. In addition to the posters, 6 to 8 longer talks from selected abstracts will feature established researchers sessions. Furthermore, more than 20 slots will be reserved for younger, less established colleagues to give them the opportunity to present their research in an oral presentation.

Read more about the conference at: <http://pog2009.org/>

Plant Biology 2009 □

18-22 July 2009 – Honolulu, Hawaii, United States.

Joint Annual Meetings of the American Society of Plant Biologists and the Phycological Society of America.

More information: <http://www.aspb.org/meetings/pb-2009/housing.cfm>

International Congress of Biochemistry and Molecular Biology IUBMB-FAOBMB 2009.

Shanghai, China, August 2-7, 2009.

<http://www.iubmb-faobmb2009.cn/iubmb/page/index.jsp>

The EMBO Meeting 2009 □

29 August - 1 September 2009 – Amsterdam, The Netherlands

As main focus areas, reflected in three plenary sessions, this inaugural meeting will highlight the rapidly developing and intensely debated field of stem cell research; new insights into the signalling pathways underlying normal development as well as tumorigenesis; and the fundamental topic of chromosome dynamics, maintenance and evolution. Poster sessions and 21 workshops will further extend these themes, for example by covering the underlying cell biological processes such as adhesion, polarity, signal transduction and membrane traffic, or the mechanisms of modification, repair and regulated expression of the genome. Additional workshops will discuss current topics such as cell death, nanobiology or functional and evolutionary genomics, ensuring a blend of subjects relevant to present-day molecular biology under the auspices of eminent and up and coming researchers in these fields.

More information: <http://www.the-embo-meeting.org/programme.html>

EPSO Workshop on Plant Productivity □

7-8 September 2009 – Ghent, Belgium □

The aim of the workshop is to serve as a think-tank on how basic information on mechanisms that control plant growth and tolerance to abiotic stress can be best translated to improve crop productivity. Participants will be from academia as well as from private enterprises. The expected outcome is a white paper describing the current state of the area and suggestions for new directions in research within Europe at European and National level.

More information:

http://www.epsoweb.org/Catalog/epso_workshops/plant_productivity.htm

5th Balkan Botanical Congress

80th Anniversary of the publication of Turill's "Plant life of the Balkan Peninsula"
September, 07 - 11. 2009. Belgrade, Serbia.

Details on the Congress can be found in the attached file and in the web page:

<http://5bbc.bio.bg.ac.rs/>><http://5bbc.bio.bg.ac.rs/>

22nd New Phytologist Symposium 'Effectors in Plant-Microbe Interactions' □

13-16 September 2009 – Versailles, France □

Effectors are defined as molecules produced by bio-aggressors/pathogens/symbionts to manipulate their host plants, thereby facilitating infection (virulence or symbiotic factors, toxins, inhibitors) and/or triggering defense responses (avirulence factors, elicitors). This dual (and conflicting) activity of effectors has been broadly reported in many plant-microbial interactions. This research topic is actively investigated using a combination of approaches (genetics, molecular biology, biochemistry, physiology and developmental biology) and benefits from the recent advances in plant and microbial functional genomics and genome-wide evolutionary analyses. Tremendous progress has been made in recent years but many questions remain unanswered. The 22nd New Phytologist Symposium aims to act as a catalyst for future research by bringing together scientists working on plant-microbe interactions across a range of organisms (viruses, bacteria, fungi and nematodes) to identify and focus on these important questions.

More information: <http://www.newphytologist.org/effectors/default.htm>

8th International Conference 'Eco-physiological Aspects of Plants Responses to Stress Factors' □

16-21 September 2009 – Krakow, Poland □

The Conference is organized under the auspicious of Polish Botanical Society by *the Franciszek Górski* Institute of Plant Physiology, Polish Academy of Sciences in Cracow, in cooperation with the Agricultural University in Nitra (Slovakia), Institute of Plant Protection, Hungarian Academy of Sciences, Budapest, Institute of Biology, Cracow Pedagogical Academy, Department of Pomology and Basic Research in Horticulture, Warsaw Agricultural University and Department of Plant Physiology, Cracow Agricultural University.

More information:

<http://www.ifr-pan.krakow.pl/main.php?lang=eng&page=akt&id=58>

Plant GEM 2009 □

7-10 October 2009 – Lisbon, Portugal □

The "Plant Genomics European Meeting" (Plant GEM) is an international annual meeting on the subject of genomics in all its facets designed to be the platform for researchers from Europe and all over the world to discuss latest developments and to exchange new ideas for future projects and to improve cooperation.

More information: <http://www.plant-gem.org/pages/home.php>

9th International Congress on Plant Molecular Biology □

25-30 October 2009 – St. Louis, Missouri, United States □

The conference will highlight a state-of-the-art view of research in plant molecular biology. In addition to keynote addresses and invited symposia, individuals are invited to submit abstracts for presentation as talks in concurrent sessions, or as posters. Ample time will be set aside for discussion at various workshops.

More information: <http://www.ipmb2009.org/>

Summer Courses

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Summer School 'Mineral Nutrition in Photosynthetic Organisms: Molecular, Physiological and Ecological Aspects' □

17-20 June 2009 – Maratea, Italy

Aim of the School is to offer the opportunity to PhD students to learn about different aspects of mineral nutrition in photosynthetic organisms (plants and algae) in a scientific challenging and stimulating atmosphere. □

Contacts: For any questions or doubts regarding School organization, please contact organizers at: irene.murgia@unimi.it, gianattilio.sacchi@unimi.it, stefano.cesco@uniud.it

5th PhD Summer School on Environmental Signalling □

24-26 August 2009 – Utrecht, Germany □

At the Institute of Environmental Biology, Utrecht University several research groups are studying various aspects of plant biology, often using Arabidopsis as a model. In this summerschool, an attractive program is provided in which experts in the field will highlight different aspects of environmental signaling in plants. Additional speakers will be selected from submitted abstracts. Moreover, there will be ample opportunity for discussions during the poster viewing sessions. The summerschool will not only have a focus on Arabidopsis research, also contributions based on other plant species are very much welcomed. The meeting is especially attractive for Ph.D. students, but the program will also be of interest for post-docs and senior scientist.

More information: <http://www.bio.uu.nl/EPS-summerschool/>

Summer School in Bioinorganic Chemistry

20-31 July, 2009

Chemistry Dept, University of Crete, Grece.

“From Chemistry to Biology & Medicine □ via Metals”.

Subjects and Topics: Principles of coordination chemistry relevant in biology. □ Generalities for metals in biology. Radiometals and their use in radiotherapy and imaging. Methods for imaging and drugs detection. Principles of photochemistry. Oligoelements and their biological role, applications in medicine. Intracellular architecture and compartmentalisation. Natural products as a source for discovery, synthesis, and application of new pharmaceuticals. Nanoporous Materials for Drug Delivery.

Information and contact: <http://www.chemistry.uoc.gr/biointensive/>

Positions available

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12 Ph. D. Studentships

Max Planck Institute for Plant Breeding Research

The Max-Planck-Institute for Plant Breeding Research and University of Cologne invite applications for Ph.D. fellowships in the International Max Planck Research School (IMPRS) in Cologne, Germany.

The training includes regular seminars, yearly retreats, supervision of a thesis committee of the research school, and soft skill and practical courses on modern laboratory techniques.

The program is taught in English and open to students from all countries holding a Master's degree or a corresponding Diploma degree.

Requirements: Highly motivated students with a strong training in molecular sciences. The constellation of participating institutions provides excellent conditions in the area of plant sciences with expertise in plant genetics, plant biochemistry, structural biology, bioinformatics, cell biology, and molecular microbiology.

For detailed information about the application process and the Ph.D. program please visit: www.mpiz-koeln.mpg.de/english/studentInformation/index.html.

Deadline for applications is March 31, 2009.

Max Planck Institute for Plant Breeding Research. IMPRS - Molecular Basis of Plant Development. Scientific Coordinator. Carl-von-Linné-Weg 10. 50829 Cologne. Germany

Postdoctoral positions

Two postdoctoral positions are available immediately with the overall objective of modifying the protein composition of seeds and expressing foreign proteins using transformation and biotechnology approaches.

Donald Danforth Plant Science Center (St. Louis MO).

The goals of the projects are broad with both basic science and translational goals including modifying nutrient source and allocation, exchanging intrinsic for foreign proteins, and remodeling the cellular processes that lead to protein accumulation. The positions will emphasize soybean modification while one will be directed at Camelina. A limited portion of the research will use model seeds such as Arabidopsis or tobacco but the primary emphasis will be to modify the crop plants. Necessary skills and training include molecular biology, tissue culture and transformation and using transcriptome and proteome assays to evaluate phenotype. An example of the type and potential of the research is found in Schmidt and Herman (2008), *Plant Biotech. J.* 6: 832-842 and Herman (2008) *Curr. Op. Plant Sci.* 11: 672-679. Please contact either: Dr. Eliot M Herman or Dr. Monica A Schmidt eherman@danforthcenter.org or mschmidt@danforthcenter.org. Donald Danforth Plant Science Center 975 N Warson Rd St. Louis MO 63132.

Postdoctoral Research Associate Position Available on Photosynthesis and Phloem Anatomy

University of Colorado at Boulder funded by the National Science Foundation

Applications are invited for a Postdoctoral Research Associate position at the University of Colorado at Boulder funded by the National Science Foundation. This research involves a comparative assessment of phloem anatomical features related to phloem loading capacity and of the maximal capacity of photosynthesis in different species under various growth conditions (see previously published work: Amiard et al. (2005) *PNAS USA* 36: 12968-12973 and Adams et al. (2007) *Photosynthesis Research* 94: 455-466. Applications should consist of a Curriculum Vitae, a statement detailing prior experience with transmission electron microscopy

(that is desired for this position), phloem loading, and/or photosynthesis and the names and email addresses of three individuals who could provide a letter of recommendation. Please direct queries and applications to Profs. William Adams or Barbara Demmig-Adams, Department of Ecology & Evolutionary Biology, University of Colorado, Boulder, CO 80309-0334; email: william.adams@colorado.edu or barbara.demmig-adams@colorado.edu.

Scientist , permanent position

Profile for recruitment of scientist , permanent position (CR2) "Flux N, C and S at the leaf and the whole plant scales"

University of Caen, National Institute of Agronomic Research (INRA), Environment and Agronomy Department (EA)

Research Department of assignment: UMR INRA UCBN 950 EVA Ecophysiologie Végétale, Agronomie et nutriments N, C, S (Plant Ecophysiology, Agronomy and nutriments N, C, S) Esplanade de la Paix, University of Caen Basse-Normandie, 14032 Caen Cedex, France, <http://www.rennes.inra.fr/umreva/> Contact: for integration in the UMR EVA, Pr F. the DILY, phone +33 (0) 2 31 56 55 24, fax +33 (0) 2 31 56 53 60, frederik.ledily@unicaen.fr, Contact for integration in the Nitrogen Team of the UMR EVA, Pr A. OURRY, phone 33 (0) 2 31 56 56 53, alain.ourry@unicaen.fr General research topic of the position: Quantification of N, C and S fluxes at the scale of the leaf: a dynamic approach to reconstitute the trophic network within a structured plant. Scientific context of the position: The position is in agreement with the research policy of the EA Department related to the research field of topic 2 of the general strategic diagram (CT2) entitled "Modeling of plants and genotype-environment interaction", and more particularly in "the study of plant response to the constraints of environment, metabolism and mineral nutrition" (priority 1 of the CT2). Description of the research topic: Compared to nitrogen (N), the role of sulphur (S) in a plant has been little investigated whereas its importance in agricultural production increases with regards to the actual phenomenon of S deficiency in soil. Moreover, the grain yield and quality of oilseed rape (*Brassica napus*) are strongly affected by S deficiency which may also reduce the N use efficiency (for which genetic breedings and/or agronomic improvements are expected). The scientist (CR2) will have to implement an analysis combining multi-elements (¹⁵N, ¹³C, ³⁴S) labelling methods to a compartmental representation of the main metabolisms with the aim of simulating the whole metabolic fluxes between organs during a complete cycle of development under fluctuating environmental conditions. Developed first at the scale of the leaf, the first experimental work will be conducted in order (i) to quantify the effects of the local environment (light) determined by the architecture of shoots and the insertion of leaf in a trophic network, (ii) to build a framework that takes into account the most relevant processes studied within the department (uptake, allocation and mobilization of N and S, senescence) at different scales (target genes, leaf and local environment, whole plant). Collaboration will have to be developed with UMR EGC of Grignon where a model of *Brassica* architecture under local light conditions will soon be available. Course and expertise required: In priority, the candidate will have a PhD in Biology, Plant Ecophysiology, Agronomy or equivalent. He/she will have to justify (i) a solid expertise in the apprehension of the functioning of the whole plant and of the interactions plant x environment, (ii) a sensitivity and/or a preliminary experience related to the use of stable or radioactive isotopes, and if possible (iii) a capacity to treat/use the data by way of modeling. Procedure of candidature: The candidate's file must be received before February 27, 2009. The information related to the procedures are accessible on the institutional website from INRA: <http://www.inra.fr/>

Postdoctoral Research Assistants Grade 7

Molecular genetics of lignin biosynthesis in *Arabidopsis* and *Brachypodium*
Division of Plant Sciences, College of Life Sciences, University of Dundee

Job Reference: LS/2554. These positions in the group of Prof. Claire Halpin require excellent and highly motivated researchers with a PhD in plant molecular biology or plant genetics/genomics. Previous experience with Arabidopsis or cereal molecular genetics would be an advantage. The Arabidopsis project (2 posts, 3 years each) is funded by a programme grant from the Global Climate and Energy Project (GCEP), Stanford and is a collaboration with Dr Gordon Simpson (University of Dundee). The appointed postdocs will benefit from dedicated technical support. The research will use mutagenesis to manipulate lignin biosynthesis and connected metabolic pathways in the model plant, Arabidopsis. The ultimate goal is to discover how to optimize the saccharification yield of plant lignocellulose for biofuel production. The Brachypodium position (1 post for 4 years) is part of an FP7 collaborative project funded by the EU which connects 17 academic and industrial labs throughout Europe and the USA (see www.RENEWALL.eu). The Dundee project involves characterization and manipulation of the lignin biosynthesis pathway in Brachypodium in order to discover aspects specific to grasses, and to improve biofuel production from lignocellulose. Successful applicants will join a research team that is part of the College of Life Sciences, University of Dundee, but that is based at the near-by Scottish Crop Research Institute (SCRI), thus allowing them to benefit from expertise and resources at both institutions. Prof. Halpin's laboratories are well-resourced and both the university and SCRI have excellent core facilities. Applications in the form of a CV and covering letter, including the names and addresses of 3 referees, should be sent to email address quoting LS/2554. Alternatively, please send 2 hard copies of your CV and covering letter to Human Resources, College of Life Sciences, MSI/WTB/JBC Complex, University of Dundee, DD1 5EH. Applicants will be considered for all 3 positions put if you have a preference, you may state it in your covering letter. Applicants will only be contacted if invited for interview.

Postdoctoral Research Assistants GRADE 7

Improving barley for biofuel applications using association genetics.

Division of Plant Sciences, College of Life Sciences, University of Dundee

Job Reference: LS/2555. These positions (4 posts, variously 24-60 months) in the group of Prof. Claire Halpin require excellent and highly motivated researchers with a PhD in plant molecular biology, genetics/genomics, or biochemistry. Previous experience with cereal molecular genetics would be an advantage. The positions are funded by BBSRC and form the Cell Wall Lignins Programme of the BBSRC Sustainable Bioenergy Centre (see www.bsbec.bbsrc.ac.uk) The projects aim to gain a comprehensive understanding of cell wall and lignin biosynthesis in barley and to manipulate cell wall composition in order to improve digestibility, and to enable more efficient biofuel production, from straw. One project will involve association genetics to map genes controlling cell wall traits that influence biofuel production capacity. All projects are in collaboration with Prof Robbie Waugh (SCRI) and will make use of SCRI's extensive germplasm and genomic resources for barley. Successful applicants will join a research team that is part of the College of Life Sciences, University of Dundee, but that is based at the near-by Scottish Crop Research Institute (SCRI), thus allowing them to benefit from expertise and resources at both institutions. Prof. Halpin's laboratories are well-resourced and both the university and SCRI have excellent core facilities. Applications in the form of a CV and covering letter, including the names and addresses of 3 referees, should be sent to HR-LifeSciences@dundee.ac.uk quoting LS/2555. Alternatively, please send 2 hard copies of your CV and covering letter to Human Resources, College of Life Sciences, MSI/WTB/JBC Complex, University of Dundee, DD1 5EH. Applicants will only be contacted if invited for interview. The University of Dundee is committed to equal opportunities and welcomes applications from all sections of the community. The University of Dundee is a registered Scottish charity, No: CO15096. w.dundee.ac.uk/jobs

Other news

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Announcing a video contest!

The American Society of Plant Biology (ASPB) and sister societies are sponsoring a contest for fresh new YouTube videos in plant biology. The contest is open to the general public as well as to plant scientists.

Up to **\$8,000 in prizes** for fresh YouTube videos in ***plant biology***.

A competition for new videos illustrating the remarkable aspects of plant life.

Create a relevant video, post it on YouTube™, and complete the entry form by the posted deadline.

Anyone may enter the competition. See <http://www.chlorofilms.org/ContestRules.htm> Contest Rules for details.

We want to encourage production of informative, creative, and entertaining videos that promote a greater appreciation and understanding of plant life. You might additionally be motivated by the prize money, the publicity and free advertising that we will bring to the best videos. See <http://www.chlorofilms.org/benefits.htm> Why participate?.

For details, go to: <http://www.chlorofilms.org/>

Scitable: a new tool for Science Education

Nature Publishing Group (NPG) announces a free website for university-level biology faculty and students: "*Scitable*" by Nature Education.

Scitable is designed to expand students' knowledge of genetics by creating a unique educational experience offering expert, evidence-based content.

See: <http://www.nature.com/scitable/whatisiscitable>

A free science library and personal learning tool brought to you by Nature Publishing Group, the world's leading publisher of science.

Scitable currently concentrates on **genetics**, the study of evolution, variation, and the rich complexity of living organisms. As you cultivate your understanding of modern genetics on Scitable, you will explore not only what we know about genetics and the ways it impacts our society, but also the data and evidence that supports our knowledge.

EPSO

European Plant Science Organisation (EPSO) is an independent body that represents more than 50 leading Research Institutions from 23 European countries. EPSO wants to improve impact and visibility of Plant Science in Europe. EPSO's top priorities include facilitating understanding of plant science, boosting funding for basic plant science and co-ordinating research activities. Please visit the website: <http://www.epsoweb.org/>

Call for papers

On the occasion of the Plant ROS 2009 meeting in Helsinki (July 8-10; www.pog2009.org) we would like to invite you to submit suitable articles for a special issue on ROS and NO in *Physiologia Plantarum* which will appear early in 2010.