

The official EFMC e-newsletter

MedChem Watch

18

May 2013

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EFMC

The official EFMC e-newsletter

MedChemWatch

MedChemWatch no.18

May 2013

web: www.efmc.info/medchemwatch

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The European Federation for Medicinal Chemistry (EFMC) is an independent association founded in 1970 representing 25 Societies from 23 European Countries and more than 6500 Medicinal Chemists. The mission of the EFMC is to advance the science of medicinal chemistry, by promoting cooperation and networking, providing training and mentoring, rewarding scientific excellence and by facilitating communication and influencing stakeholders.



Dear colleagues,

The year 2013 has opened, for EFMC, with a workshop organised in Frankfurt, finalized at reshaping the structure of the organization and of its committees with the aim of better serving the community, the member societies, and of increasing the visibility and the impact of medicinal chemistry in the general society. In this issue of MedChemWatch you will find an interview with the President of EFMC, Dr. Uli Stilz, who comments on the main purposes and results of the workshop. Please remember that EFMC is present on social media, such as LinkedIn and Twitter, so make use of them if you wish to comment or to suggest something! We will be more than pleased to host and to promote a further debate.

You will find, in this issue, another interesting article on the EU-Openscreen initiative. This is the first of a series of articles which we have just started publishing, aiming at introducing open innovation initiatives across Europe. Open innovation is emerging as a new and potentially successful model of drug discovery, and it is our intention to present and, again, to stimulate a debate on the established initiatives in Europe.

This issue of MedChemWatch also contains a SME presentation from SARomics Biostructures Lund (Sweden).

And finally, don't forget the two main events of this year, the ASMC'13, which will be held in Moscow, May 5-8, and the 'Frontiers in Medicinal Chemistry', the fourth in a series initiated in Siena (Italy) in 2007, which will be co-organised this year by EFMC and Division of Medicinal Chemistry of the American Chemical Society in San Francisco, June 23-26.

Gabriele Costantino, *Editor of MedChem Watch*



Future priorities for EFMC: Interview with Uli Stilz

BY GABRIELE COSTANTINO

There is a time, for every professional or recreational association, to question its structure, its organization and operative tasks, and to undertake new actions to fulfill the organization's mission, to better serve its associates, and to better accomplish its aims. Having this in mind, in February the **Executive Committee of the European Federation for Medicinal Chemistry** and its **President Uli Stilz** have organised a workshop in Frankfurt to brainstorm on how the EFMC can best serve the medicinal chemistry community within Europe. The invitees jointly discussed about future priorities the EFMC should emphasize, taking EFMC's pillars as a starting point for discussion:

- cooperation and networking within the global scientific community
- future training and mentoring of young scientists
- rewarding scientific excellence
- enabling communication within the scientific community
- promoting influence and communication with the stakeholders

Goal of the brainstorming was to define future activities of the EFMC and to build a roadmap how to promote



medicinal chemistry within Europe at a time where we see unprecedented changes in the life science enterprise.

The stimulating discussions, held in a good atmosphere were very fruitful. Ideas came up, proposals were collected and working groups have been established, translating creativity and lateral-thinking into concreteness. The Executive Committee and the working groups now take up the challenge to implement the proposals, taking concrete actions both in the short and the long run.

Let's talk a bit with the President of EFMC, Uli Stilz, who was the main promoter of this initiative to appreciate more the outcome of the workshop and to foresee the expected evolution.

Q. Uli, let's start with something provocative. Was there something wrong with the current organization of EFMC, and why did you decide to organize such a demanding workshop?

Gabriele, it was very important for me to create an opportunity to bring together EFMC key stakeholders including the Council, the various com-



broader public, collaborations with other scientific societies and a new scientific meeting we will implement for young scientist to promote and support their career development. My personal priority for the workshop was to join and listen to the ideas and proposals brought up by the participants during the two day workshop. The workshop has helped me a lot to have a much clearer sense of what are the most pressing issues we need to tackle. In some way I was overwhelmed by the energy and commitment all participants have put into the workshop. This was a wonderful experience.

Q. Now, the most challenging part is to follow-up the workshop by concrete actions and initiative. How do you see the interconnection between the work-groups and the EC?

We have implemented small working groups to drive implementation, and the EC also decided on a few quick-wins. Right after the workshop, we have created an EFMC twitter account and we changed the age policy for prize winners. It is critical for me that we keep the spirit of the workshop in Frankfurt to manage and drive EFMC as a community. In my experience a dynamic and vibrant community benefits from decentralized structures. The EC and EC members can and must play a major role as enabler and facilitators and as a management team I would also like us to keep track of where we are with the initiatives and to communicate and celebrate the progress we make. But I also want to emphasize that by no means I want the EC to function as a gate keeper.

Q. To finish, I would like your comment also on the technical aspects

mittee members and the next generation of leaders to engage in a dialog about strategic initiatives EFMC needs to push to best serve the medicinal chemistry community in Europe and across the world in times of unprecedented change in the life science enterprise. In my view, there is nothing wrong with the current organization of EFMC. Nevertheless, I strongly believe that it is critical for any organization every once a while to step out of the day to day business to clarify what we do very well and want to keep doing going forward and also to reflect what new activities are required in a rapidly changing environment and how to make those new initiatives happen.

Q. How did you like the commitment of the people who attended the workshop, and do you think this initiative will have also impact on the national member society activities?

We have designed the workshop in Frankfurt in the format of a "World Café" to foster creativity and participation. Personally, I was very impressed by the energy I felt in the room during the workshop. We are off to a great start both from the spirit among all participants to

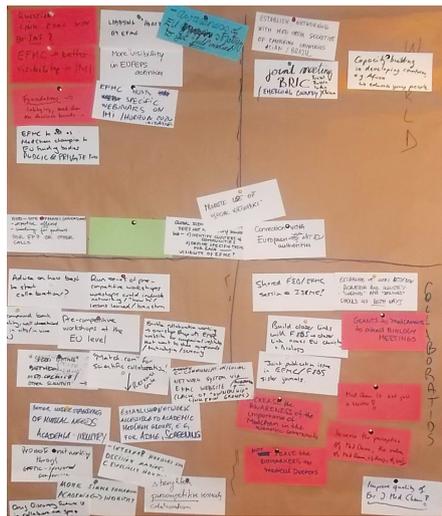
drive EFMC activities together in the future and by the significant number of great ideas and initiatives which have emerged out of the workshop. Concerning your question on the impact on national member societies I expect that the workshop has contributed to strengthen the network between individual members and that this will foster information flow and joint initiatives across member societies. Just as one example we have discussed to share training materials across the different Medicinal Chemistry Schools we have currently in the various European countries.

Q. What are, in your opinion, the most relevant outcomes of the workshop, and did you expect something more, or something different at the beginning?

During the workshop we have identified a number of major new initiatives for EFMC, which we want to implement during the next 2-3 years. These initiatives include improved stakeholder management at the European level, various activities to strengthen the visibility of Medicinal Chemistry in Europe including the use of social media to better communicate within the scientific community and with the

of the meeting. My personal opinion is that the brainstorming was really great, and I had the very concrete feeling that inspiring discussions and lateral-thinking can only blow up from a structured environment, and, it can seem an ossimoric statement, but a lot of organization is needed to promote creativity. Maybe people coming from industrial environments are more accustomed to this than academics, but can you comment on this?

Gabriele, this is a very good observation you are bringing up here. It resonates with my experience that highly creative teams appear only on the surface a bit “chaotic” but at a more close inspection follow a very well defined process with different team members taking on well defined roles. We have tried to build some structure into the design of the “World Café” workshop and I hope participants have enjoyed the experience of the two days being together as much as I did.





EU-OPENSSCREEN

A European Infrastructure of Open Screening Platforms for Chemical Biology

BY RONALD FRANK*



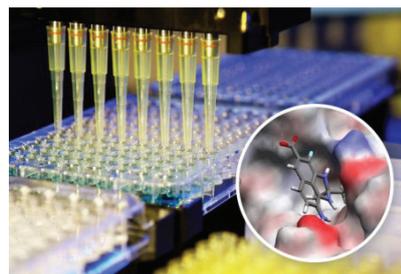
Chemical Biology

Chemical Biology is a rather young interdisciplinary research field¹ following a chemistry-driven approach to investigating biology. Chemical entities are introduced into biological systems such as bacteria, cells, tissue, or small model organisms in the form of modified building blocks, tags, enzyme substrates or ligands (binders); these chemical tools then affect the function of cellular target molecules to become activated, inhibited, or labelled for pull down, for detection, or for in situ visualisation.²⁻⁴ Many fundamental questions about the molecular mechanisms that underlie biological processes can be addressed advantageously – and sometimes exclusively – by using chemical tools.⁵

Need for a European Infrastructure

One major route for the discovery of bioactive substances is the systematic empirical screening of large compound collections with dedicated bioassays designed to respond with a robust signal to an anticipated biological activity. The screening provides hit compounds as entry points for further modification by chemists towards useful tools and potential candidates for products. This approach, typical of industry, is technically and logistically rather demanding with respect

to the necessary storage and maintenance of a compound collection (several hundred thousand substances), as well as rapid testing with reasonable effort and the necessary reliability. It requires large, dedicated facilities with expensive investments and experienced personnel. Meanwhile, some academic institutions have established such high-tech screening facilities to support interdisciplinary research projects between chemists and biologists. However, these facilities serve mainly their local or national communities, due to limited resources. Linking these facilities within a truly pan-European network, similar to the Molecular Libraries Program (MLP) of the NIH in the US, generates the critical mass to cost-efficiently develop novel tools to the maximal benefit of the scientific community.



The European Strategy Forum on Research Infrastructures (ESFRI)

“The competitive and open access to high quality Research Infrastructures” was recognized vital for developing the European Research Area (ERA).⁶ Therefore ESFRI was set up in 2002 by the EU Competitiveness Council and the research ministers of the European member states as a meeting of senior representatives for informal consultations on

strategic issues related to research infrastructures.⁷ In 2004 ESFRI received the mandate to develop a European Strategic Roadmap for Research Infrastructures which shall describe the needs for the next 10 to 20 years and identify vital new European research infrastructures in all fields of research. 1000 high-level experts from all Member and Associated States were involved in a bottom-up selection process. The first roadmap was published in October 2006, updated in 2008 and 2010.

The FMP in Berlin, node of the German ChemBioNet and national open access screening platform, submitted a proposal for a European-type ChemBioNet named EU-OPENSREEN which was included on the ESFRI roadmap in 2008. Since then, ChemBioNet has served as a model for the building of national networks in other European countries; several of them are now on their respective national roadmaps for research infrastructures. EU-OPENSREEN is currently in its Preparatory Phase Project, funded by the European Commission with 3.7 million Euros. The infrastructure will be fully operational from 2015 onwards.

Concept of the infrastructure

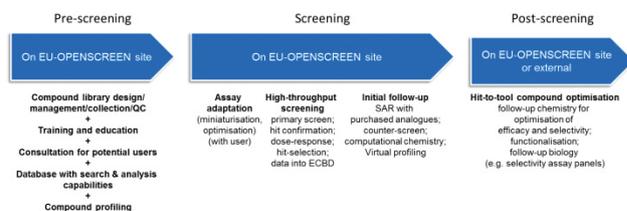
EU-OPENSREEN is a distributed network that will involve Europe's leading compound screening sites including expert chemistry and biology groups, to provide to users from academia and SMEs access to their cutting-edge technologies, services and resources required for the discovery and characterisation of biologically active substances. It brings together a multitude of academic groups, thereby integrating the individual biological, chemical and technological expertise only available at these local sites.

The screening sites jointly use one European compound collection. This European Chemical Biology Library (ECBL) will be built on the expert knowledge of European chemists and will be profiled against hundreds of assays. It will be composed of proprietary compounds collected from European

chemists and selected commercial compounds to optimally serve the research community and its needs. This compound collection will be managed (incl. storage, QC, distribution of compounds to the service sites) centrally in one Compound Collection Management Facility (CCMF).

EU-OPENSREEN adopts an open-access policy to support maximal data dissemination and publication, where the same rules will apply to users from academia and SMEs alike. EU-OPENSREEN's European Chemical Biology Database (ECBD) will contain validated output from screening centres in a public and pre-release form. It serves as a web portal with search and analysis capabilities and is an environment designed to ensure maximal availability, reuse and analysis of data.

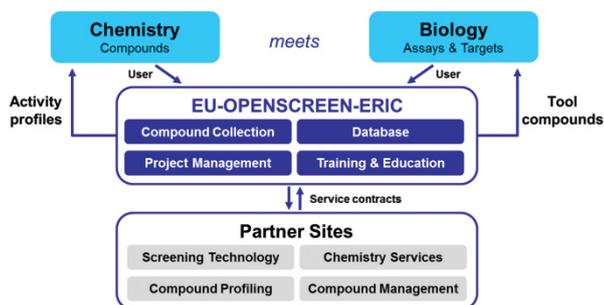
EU-OPENSREEN will select projects according to scientific novelty and excellence. It will support these projects through assay development, screening and follow-up chemical optimisation as well as biological validation. High quality bioactive tool compounds shall be made openly available to the community.



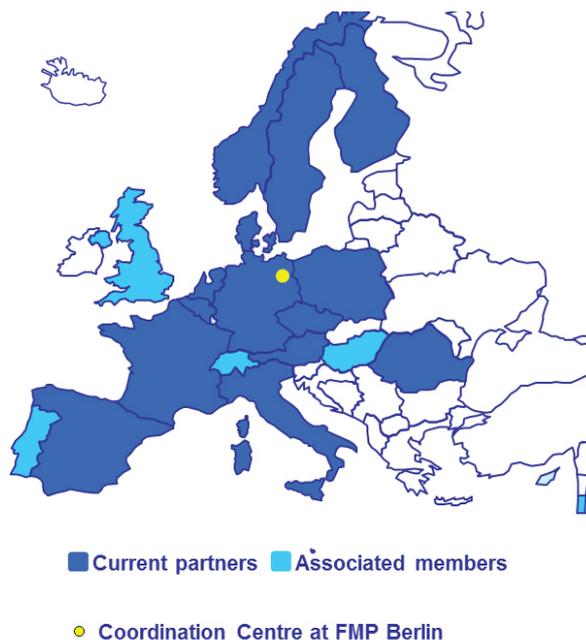
EU-OPENSREEN's service portfolio

Exploring the secrets of life

EU-OPENSREEN has no bias towards target families, biological topics or models. The chemical tools developed within EU-OPENSREEN will support a wider use of the pharmacological approach to biology and help to enter new fields beyond the parent themes of pharmacology, human and veterinary medicine, and toxicology. EU-OPENSREEN explicitly advocates wide-ranging projects that will encourage cross-fertilisation between disciplines and, thus, increase our knowledge base. By utilising chemical tools, new opportunities are opened in systems and network biology (directed and selective perturbation of signalling pathways), structural biology (atomic resolution of compound-target interactions), chronobiology (modulation of biological rhythms), plant biology^{8,9} (response of wild or crop plants to environmental and agricultural substances), chemical ecology (chemical communication between species), and many more.



EU-OPENSCEEN builds on national networks in 14 European countries and their expert facilities. Currently, 21 institutions are partners in the EU-OPENSCEEN preparatory phase project: Austria – Centre for Molecular Medicine Vienna; Czech Rep. – Inst. Molecular Genetics Prague; Denmark – DTU Copenhagen; EMBL-European Bioinformatics Inst. (EMBL-EBI); Finland – Finnish Inst. for Molecular Medicine Helsinki; France – CNRS; Germany – Leibniz Institute für Molekulare Pharmakologie (FMP), Helmholtz Centre for Infection Research (HZI), Max-Delbrück-Centre for Molecular Medicine (MDC), BMBF, Leibniz Association, Helmholtz Association; Italy – CISI Milan, IRBM Rome; The Netherlands – National Cancer Inst. Amsterdam; Norway – Univ. Oslo; Poland – IMB Lodz; Spain – Barcelona Science Parc; Sweden – Univ. Umeå; Belgium – VIB Ghent; Romania – Inst. Chemistry Timisoara; Interested institutions: Estonia – Tartu Univ.; Greece – BRFAA Athens; Univ. Ioannina; Hungary – Univ. Budapest; Israel – Weizmann Inst. Rehovot; Portugal – Univ. Lisbon; Switzerland – EPFL Lausanne; UK – Univ. Dundee, Univ. Cambridge.



*on behalf of the EU-OPENSCEEN consortium

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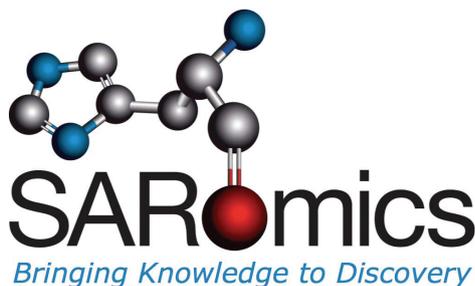
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-  • Danish Chemical Biology Initiative
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-  • POL-OPENSCEEN
-  • CZ-OPENSCEEN and Czech ChemGen
-  • Austrian PLACEBO
-  • Spanish ChemBioBank
-  • French Chimiothèque Nationale, PCBIS platform, FR-OPENSCEEN
-  • Romanian Chemical Biology Net
-  • Flemish Network on Chemical Biology
-  • Collezione Nazionale dei Composti Chimici e Centro Screening



SARomics Biostructure

BY BJÖRN WALSE*



SARomics Biostructures was founded in 2006 by a group of researchers from academia and industry as a structural biology and drug discovery service provider. Since then the spirit of bridging academic research and industrial applications has dominated the strategy of the company. This is also reflected in the company's slogan: Bringing Knowledge to Discovery. This strategy helped to quickly establish SARomics as the primary structural biology and drug discovery services provider in Scandinavia. Our location in close vicinity to the MAX-lab synchrotron radiation facility in Lund and our use of a high-throughput crystallization laboratory both played a crucial role in our initial success. Throughout the years we have helped many companies and academic groups with their structural biology projects, which is reflected in some joint publications (1-4). Currently SARomics Biostructures provides structural biology services to customers from several continents and has established itself as a significant player on the drug discovery CRO market.

A company is like a living organism — to survive it needs to change, to constantly evolve. Several years of experience from serving our customers, substantial changes on the global drug market and numerous other factors played an important role when we decided to formulate a new growth strategy, taking our business to the next level. In the current climate of limited access to investment capital, strategic collaborations with other companies have become an essential requirement for growth of small and medium-sized biotech enterprises (SMEs). In 2010 we started collaboration with the Danish company Kinase Detect and the British company IOTA Pharmaceuticals, together launching the KINOMED project, with backing from the EU-financed Eurostars program. The collaboration brought together expertise in the fields of kinase biochemistry and molecular biology, as well as fragment-based and structure-based drug design, with the aim to create a joint kinase drug discovery platform. The platform created a number of promising fragment complexes of two kinases, PIM1 and CK2, including dual-inhibition fragments for PIM1/CK2.

To strengthen our collaboration with MAX-lab and increase our interactions with innovative startups based around Lund University, in 2012 we brought in for the first time new strategic owners, namely LUIS, the Lund University Innovation Systems holding company, and the Swedish innovation agency Innovationsbron. Subsequently we have established a FastLane service with a library of so-called off-the-shelf structures. This type of service offers crystal structures (often in complex with a ligand) of a protein within a very short time frame, typically 8-12 weeks, but often shorter. Currently

our FastLane library contains more than 100 proteins, including kinases, epigenetic targets, phosphatases and many others. Most excitingly, we have initiated in-house drug discovery projects in the field of epigenetic disorders in close collaboration with Red Glead Discovery, a company founded by former AstraZeneca employees after the closure of the AstraZeneca site in Lund.

Through KINOMED and the Eurostars program we gained valuable experience in EU project coordination, which served us well when we recently entered as a coordinator of the nearly 1.5 million € TAKTIC project within the FP7 program "Research for the Benefit of SMEs". TAKTIC is a drug discovery project aimed at producing inhibitors of three different kinase cancer targets. Apart from SARomics Biostructures, it includes two other SMEs - ProQinase, based in Freiburg, and Prestwick Chemical, based in Strasbourg. On the academic side the project includes two groups headed by Dr Marco Lolli and Marco Piccinini from the University of Turin, and the Israel Structural Proteomic Center (ISPC, Weizmann Institute of Science), headed by Professor Joel Sussman. The academic groups bring in their expertise in medicinal chemistry, cell biology and high-throughput X-ray crystallography, while the partnering SMEs contribute their skills in protein kinase assay and profiling, medicinal chemistry and structure-based drug design. In other words a perfect match! TAKTIC is probably the most exciting project we have been engaged in since SARomics Biostructures was founded. It gives us the opportunity to apply all the experience we gained within the areas of structure-based drug design, computational chemistry and fragment library screening. The truly translational character of the project, that brings knowledge from academia into industrial application, also fits perfectly within the general strategy of the company.

We can confidently say that SARomics Biostructures benefits from having among its founders both those who are active in academic research and those who have long-term experience from industry. Cutting edge research methods originating in academia naturally feed into the company. Vice versa, the experience of running streamlined high-throughput platforms within the company proves valuable in academia. Thus we are convinced that SARomics Biostructures has found a winning combination!

*Björn Walse, CEO of SARomics Biostructures

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INDUSTRIAL LIASON COMMITTEE

Sunset Session at the EFMC-ISMC 2012, Berlin

BY SARAH SKERRAT

The EFMC/ISMC 2012 sunset session organised by the EFMC Industrial Liaison Committee centred on “How the Industrial/Academic Interface is Changing Medicinal Chemistry”. The Chair of this session (Dr. Alan Brown, Head of Medicinal Chemistry at PFIZER NEUSENTIS, UK) opened with a thoughtful overview of why MedChem must change. He highlighted the decreasing numbers of FDA-approved NMEs over recent years along with the increasing amount of R&D spend. He stressed that increasing the collaboration between industry and academia, and aligning their scientific direction, will be key in driving a much needed boost in productivity.

Dr. Torsten Hoffman (Head of Medicinal Chemistry at F. HOFFMANN-LA ROCHE, Basel) gave a fascinating insight into how scientists at Roche are working with academia to foster innovation. An example of this is the Roche Innovation Council that funds scientific ideas from Roche scientists. A recent success story from this endeavour is the synthesis and physicochemical characterisation of a number of oxetane, spirooxetane and bisazetidone containing compounds. This work was done in partnership with the Carreira lab, and the interesting MedChem properties of these motifs have generated significant interest in the wider pharmaceutical community. Evidence of this is through the huge increase in patents and publications containing such structures and their recent addition to a number of fine chemical catalogues. A start-up company called SpiroChem also evolved. Another example of Roche leveraging external innovation is through their Collaborative Model scheme in which Roche provides a 100K library of diverse compounds

for use at academic centres involved in new target research. Dr. Hoffman stressed the importance of being scientifically innovative in a risk adverse world where funding is ever harder to secure.

Dr. Paul Brennan (UNIVERSITY OF OXFORD, Oxford) gave an interesting overview of work conducted at the SGC (Structural Genomics Consortium). The SGC is a public-private partnership whose mandate is to promote drug discovery by placing protein structures of relevance to human health into the public domain with no restrictions on their use. A major focus for the SGC is the generation of epigenetic chemical probes and fit-for-purpose molecules to test novel mechanisms in *in vitro* systems. This work is done in collaboration with big pharma companies and an extensive academic network in which no IP is generated. To-date, a large number of crystal structures have been solved and a range of small molecules delivered that are active against a number of interesting epigenetic targets. Dr. Brennan argued that whilst this collaborative target ID/hit generation model is effective, we should look to extend it to the pre-completive generation of clinical data that validates the target, as most novel targets fail in the first patient study. TRPV1 is a case in point with 29 organizations having been active in an area that ultimately failed to deliver, clearly an unsustainable model.

Dr Giovanna Zinzalla (KAROLINSKA INSTITUTET, Sweden) stated the importance of chemical biology and academic research in delivering novel therapeutics. She highlighted that academic research has given rise to 9.3% of all drugs and

that 90% of all drugs against new indications have had an academic origin. Dr. Zinzalla stated that chemical biology has come to the fore as a method of understanding how biological systems operate and how they can be manipulated. Chemical biology, she said, has enjoyed a “decade of discoveries” and these have mainly come from academic labs. It is therefore vital that pharma and academia work together to characterise novel targets that may be therapeutically valuable. She noted that academic research, to be truly innovative and complement the drug discovery process in pharma, should focus on targets for which there is no direct preclinical data linking them to a disease, or tackle the more challenging so called “undruggable” targets. A key area of Dr Zinzalla’s research is the targeting of protein-protein interactions (PPIs), for which Ro5/classical small-molecule libraries are often inadequate. She showed an example of peptidomimetic design to deliver Hydrogen Bond Surrogate α -helices on the c-MYC transcription factor project.

The talks were followed by a round-table discussion with the speakers and the chair. Members of the audience were keen to hear how a pre-competitive research model could work moving forwards. The panel discussed whether the need to publish versus the need to retain Intellectual Property hinders the partnership between academia and industry at present. The panel questioned whether the tendency of Pharma to hold back on disclosure of ground-breaking approaches and science was detrimental to itself, academia and, ultimately, the drug discovery process in the long run. A discussion of academic drug discovery and whether it was too fragmented with respect to expertise and facilities also took place, and how better communication between groups within academia as well as with Pharma would be key to driving successful projects forward. The panel felt the future was bright for collaborative-based research and that any hurdles, perceived or otherwise, are certainly not insurmountable. Members of the audience also expressed a feeling that synthetic chemistry is not involved enough in the early drug discovery process and that we (the chemists) need to talk more with our biology counterparts and be part of the discussion. It was recognised we want to get to a world where chemists and biologists work together at the early stages of target discovery so we have the opportunity to deliver chemical biology probes/compounds that will help transform our understanding of biological pathways. The innovative use of chemical probes/molecules in the biology arena and increased discussion with industry leaders, grant funding bod-

ies and government should bring synthetic chemistry back into a central focus.

In addition, the presentation to the recipients of the 1st European Federation of Medicinal Chemistry – Roche Studentship for excellence in Medicinal Chemistry during an Industrial Trainee placement was made by Ulrich Stolz (EFMC President) and Torsten Hoffmann (Roche). The prize winners were Nicole Trainor (Imperial College, UK) and Claudio Grünenfelder (ETH Zürich, Switzerland). The Industry Liaison Committee on behalf of the EFMC would like to congratulate Nicole and Claudio on their fantastic achievement. The EFMC-ILC hope that other pharma companies supporting medicinal chemistry internship students can recognise excellence in this way.

If you are interested in more information please contact: sarah.skerratt@pfizer.com.



News from the Societies

BY ERDEN BANOGLU

SECTION MEDICINAL CHEMISTRY, ROYAL NETHERLANDS CHEMICAL SOCIETY (KNCV)

Dr. Harald Albers wins the two yearly Dutch Medicinal Chemistry Award

On 22nd March 2013 the two yearly Dutch Medicinal Chemistry Prize for the best Dutch Ph.D thesis in the field was awarded by the Section of Medicinal Chemistry of the Royal Netherlands Chemical Society to Dr. Harald Albers. The title of his thesis was "*Development of ATX and DUSP inhibitors; Inhibiting phosphate ester hydrolysis in biology*". The research was performed at the Dutch Cancer Institute in Amsterdam in the group of prof. Dr. Huib Ovaa and the Ph.D title was obtained from the University of Leiden by promoters prof. Dr. Hermen Overkleeft and prof. Dr. Jacques Neefjes in April 2012. The jury of the prize consisted of Dr. Christa E. Müller (University of Bonn), prof. Dr. Alexander Dömling (University of Groningen), Dr. Floris van Delft (Radboud University Nijmegen) and Dr. Geert Jan Sterk (Mercachem). The prize, € 1000 (sponsored by Mercachem) and a certificate, was handed over during the yearly spring symposium in Utrecht entitled '*Medicinal chemistry and (epi)genetics*'.

TURKISH ASSOCIATION OF MEDICINAL AND PHARMACEUTICAL CHEMISTRY

Prof. Dr. Meral Tunçbilek of Ankara University and also a member of the Turkish

Association of Medicinal and Pharmaceutical Chemistry, wins the Erol Toksoz Award on Drug Research given by Sanovel Pharmaceuticals, Turkey. The "Erol Toksoz Award on Drug Research" was established to honour the memory of Pharm. Erol Toksoz who was the founder of Sanovel Pharmaceuticals. The award is given biennially to a scientist for his/her pioneering work in drug discovery area. Prof. Tunçbilek won this year's award for her work on the discovery of novel purine ribonucleoside analogues as promising anticancer agents, which was recently published in *Journal of Medicinal Chemistry* (55(7):3058-65, 2012).

THE BIOLOGICAL AND MEDICINAL CHEMISTRY SECTOR (BMCS) OF THE ROYAL SOCIETY OF CHEMISTRY (RSC)

In 4Q2012, the BMCS held two scientific symposia aimed at given postgraduate and postdoctoral researchers the opportunity to give either oral or poster presentations on their work. The 1st RSC BMCS Agriscience Chemical Biology Postgraduate Symposium, was held on 1st and 2nd November at Imperial College, London. See <http://www.agri-net.net/news/agri-science-chemical-biology-postgraduate-symposium> for a summary and details of the winners. The 6th RSC BMCS Biological and Medicinal Chemistry Postgraduate Symposium was held on 14th December in the Department of Chemistry, Cambridge

University; see http://www.rsc.org/images/BMCS_PhD_Symposium_tcm18-226567.pdf for details

NB The 7th RSC BMCS Biological and Medicinal Chemistry Symposium will be held on 13th December 2013 at the University of Cambridge

SOCIEDAD ESPAÑOLA DE QUÍMICA TERAPÉUTICA (SEQT)

Third Seqt Summer School "Medicinal Chemistry in Drug Discovery: the Pharma Perspective"

June 25-27, 2013

Tres Cantos (Madrid), Spain

The Third SEQT Summer School "Medicinal Chemistry in Drug Discovery: The Pharma Perspective" will be organised by the Spanish Society of Medicinal Chemistry (SEQT) and GlaxoSmithKline (GSK) with the aim of approaching the pharma industry to young researchers, both graduate students and post-doctoral associates, working in chemistry and health sciences related fields. The School will be held at GSK R&D facilities in Tres Cantos (Madrid) in June 25-27 of 2013. The scientific program will be illustrated through real case studies led by an exceptional panel of industry experts currently working at Almirall, Esteve, Faes, GlaxoSmithKline and Janssen.

E-mail: escuelaseqt2013@iqm.csic.es

More information is available on <http://www.seqt.org/englnf/summer.asp>

XVII Seqt National Meeting “Advances in Drug Discovery: Successes, Trends and Future Challenges”

October 2-5, 2013

Madrid, Spain

The Spanish Society of Medicinal Chemistry (SEQT) is organizing the XVIIth National Meeting on “Advances in Drug Discovery: Successes, Trends and Future Challenges” scheduled to be held on October 2-5th in Madrid, Spain. The Scientific Program will be composed of invited plenary lectures, short oral communications and poster sessions, covering the main stages of modern drug discovery and will be completed by a Commercial Exhibition as well as a Social Program.

E-mail: xviicongresoseqt@ceu.es

For further information and regular updates, please visit our website <http://www.farmacia.uspceu.es/pages/medicinalchemistry/XVII-SEQT-National-Meeting.html>



The 5th International Symposium on Advances in Synthetic and Medicinal Chemistry (ASMC'13 Moscow), jointly organised by the European Federation for Medicinal Chemistry (EFMC) and ChemBridge Corporation, will take place on May 5-8, 2013 in Moscow, Russia.

Following the tradition, this symposium is aimed and focused on bringing together leading scientists and expert practitioners of synthetic and medicinal chemistry from academic and industrial institutions worldwide. Beyond key lectures in synthetic and catalytic chemistry, as well as recent case studies in medicinal chemistry and drug discovery, the symposium aims at extending the range from 'small molecules' to 'large molecules' including carbohydrates, natural products, novel protein scaffolds, dendrimers, and genes.

The conference presents an ideal opportunity to network with an international audience of about 250 delegates and provides the conference participants and their guests with a wonderful cultural and social experience. More info is available on the website www.asmc2013.org



EFMC would also like to invite you to participate in the Frontiers in Medicinal Chemistry Symposium, to be held in San Francisco, CA, USA from Sunday, June 23 to Wednesday, 26, 2013. This symposium is the fourth in the series initiated in Siena, Italy in 2007 and continued in Barcelona, Spain in 2009 and Stockholm, Sweden in 2011. The theme of this year's meeting is Emerging Targets, Novel Candidates and Innovative Strategies. The meeting is co-organised by the European Federation of Medicinal Chemistry and the American Chemical Society Division of Medicinal Chemistry. It is intended to bring scientists working in the medicinal chemistry field together in order to share new and exciting results and we encourage attendees to bring poster presentations. To find out more on the programme and on the registration process, we invite you to visit the website <http://wizard.musc.edu/frontiers2013.html>

The Selection Committees of the “EFMC Prize for a Young Medicinal Chemist in Industry” and the “EFMC Prize for a Young Medicinal Chemist in Academia” are very pleased to announce the names of the winners and the most meritorious runners-up.

The prizes are established to acknowledge and recognize an outstanding young medicinal chemist (≤ 35 years old) working in industry or in academia within Europe. The winners will be awarded at the International Symposium on Advances in Synthetic and Medicinal Chemistry EFMC.



EFMC is also active on social media! In addition to the EFMC LinkedIn group, we have also created a Twitter account.

Follow-us@EuroMedChem!

THE EFMC PRIZE FOR A YOUNG MEDICINAL CHEMIST IN INDUSTRY

The EFMC Prize for a Young Medicinal Chemist in Industry is presented to:
Frederick GOLDBERG (*AstraZeneca, UK*).

Jérôme HERT (*F. Hoffman-La-Roche, Switzerland*) and **Alexei KARPOV** (*Novartis Institutes for Biomedical Research, Switzerland*) have been voted runner-up of the EFMC Prize for a Young Medicinal Chemist in Industry.

THE EFMC PRIZE FOR A YOUNG MEDICINAL CHEMIST IN ACADEMIA

The EFMC Prize for a Young Medicinal Chemist in Academia is presented to:
Gonçalo BERNARDES (*Department of Chemistry, University of Cambridge, UK and Instituto de Medicina Molecular, University of Lisbon, Portugal*).

Chris DE GRAAF (*VU University Amsterdam, The Netherlands*) and **Frank DEKKER** (*University of Groningen, The Netherlands*) have been voted runner-up of the EFMC Prize for a Young Medicinal Chemist in Academia.

EFMC EVENTS

BY NELE COULIER AND KOEN AUGUSTYNS

EFMC ORGANISED EVENTS

5th International Symposium on Advances in Synthetic and Medicinal Chemistry (ASMC 2013)

May 5-8, 2013
Moscow, Russia
www.asmc2013.org

Frontiers in Medicinal Chemistry: Emerging Targets, Novel Candidates and Innovative Strategies

June 23-26, 2013
San Francisco, USA
www.efmc.info

EFMC SPONSORED EVENTS

Camerino-Cyprus-Noordwijkerhout Symposium

May 19-23, 2013
Camerino, Italy
<http://www.unicam.it/farmacia/symposium/Welcome.htm>

6th Anglo-Swedish Medicinal Chemistry Symposium

June 16-19, 2013
Stockholm, Sweden <http://www.lakemedelsakademien.se/templates/kurs/kurstillfalle.aspx?kld=5061&id=5062>

GPCR Medicinal Chemistry & Structural Biology: Roots, Fruits and Fertilizers

June 24-25, 2013
Amsterdam, The Netherlands
<http://www.medchemsymposium.org>

Third SEQT Summer School: "Medicinal Chemistry in Drug Discovery: The Pharma Perspective"

June 25-27, 2013
Madrid, Spain
<http://www.seqt.org/englinf/summer.asp>

24th International Symposium on Pharmaceutical and Biomedical Analysis (PBA 2013)

30 June - 3 July, 2013
Bologna, Italy
<http://www.PBA2013.org>

VIIIth Joint Meeting on Medicinal Chemistry (JMMC)

June 30 - July 4, 2013
Lublin, Poland
<http://www.jmmc2013.eu>

49th RICT – Drug Discovery and Selection: When Chemical Biology Meets Drug Design

July 3-5, 2013
Nice, France
<http://www.rict2013.org>

XXIInd National Meeting on Medicinal Chemistry NMMC 2013

September 10-13, 2013
Rome, Italy
<http://w3.uniroma1.it/nmmc2013/#>

EFMC SPONSORED SCHOOLS

33rd European School of Medicinal Chemistry - ESMEC (EFMC Accredited School)

July 7-12, 2013
Urbino, Italy
<http://www.esmec.eu/>

Medicinal Chemistry Residential School

June 17-21, 2013
Loughborough University, UK
http://www.rsc.org/conferencesandevents/rsconferences/medchem-training/index.asp?utm_content=EFMC&utm_source=non-rsc-website&utm_medium=link&utm_campaign=mkt-jrp-2013medsch

Summer School on Pharmaceutical Analysis (SSPA)

June 27-29, 2013
Rimini, Italy
<http://www.scpaweb.org/>

Vienna Summer School on Drug Design

September 15-20, 2013
Vienna, Austria
http://www.univie.ac.at/europin/index.php?option=com_content&view=article&id=10&Itemid=11

Frontiers in Medicinal Chemistry joint ACS – EFMC Meeting

San Francisco, June 23-26th 2013



On behalf of the organizing and scientific committees, we would like to invite you to participate in the Frontiers in Medicinal Chemistry Symposium, to be held in San Francisco, CA, USA from Sunday, June 23 to Wednesday, 26, 2013.

This symposium is the fourth in the series initiated in Siena, Italy in 2007 and continued in Barcelona, Spain in 2009 and Stockholm, Sweden in 2011.

The theme of this year's meeting is Emerging Targets, Novel Candidates and Innovative Strategies.

The meeting is co-organized by the European Federation of Medicinal Chemistry and the American Chemical Society Division of Medicinal Chemistry. It is intended to bring scientists working in the medicinal chemistry field together in order to share new and exciting results and we encourage attendees to bring poster presentations. San Francisco provides a picturesque backdrop for this exciting conference, and we know you will have a scientifically rewarding and enjoyable stay.

Hot Topics, Case Studies, Emerging Areas:

- Hep C Update
- Inflammation
- Oncology: Kinase inhibitors - PI3K, Antibody drug conjugates, Epigenetics, Cancer Cell Metabolism
- Molecular Imaging / Biomarkers
- Protein Folding
- Emerging Topics

Website for registration:

<http://wizard.music.edu/frontiers2013.html>

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