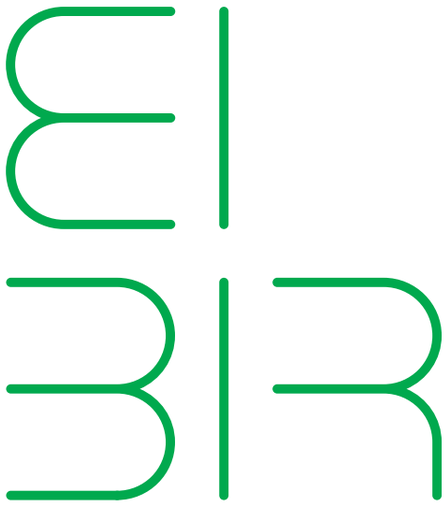

EUROPEAN INSTITUTE
FOR BIOMEDICAL
IMAGING RESEARCH

ANNUAL REPORT 2013

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IMPRINT

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Editorial

Dear Network Members, Colleagues and Friends,

We are pleased to present the 2013 Annual Report for the European Institute for Biomedical Imaging Research (EIBIR). We sincerely hope that you enjoy reading the report and are inspired to become involved in EIBIR's activities in the field of biomedical imaging research in the coming year.

Deadlines for the last Health Call under FP7 made for a busy beginning to 2013. EIBIR guided three projects through the second proposal stage to submission. For each of the proposals, the evaluations reached or exceeded the threshold scores. After a highly competitive selection process, the MITIGATE project was selected to receive funding and we look forward to following its progress over the next 4 years.

Two additional projects under the "Virtual Physiological Human" theme also began in 2013. VPH-PRISM and VPH-DARE@IT, focusing on breast cancer and dementia respectively, show great promise for advancement in the treatment of these two diseases.

With heightened interest, the Scientific Advisory Board (SAB) monitored the final stages of development in the European Union surrounding the preparations for Horizon 2020. EIBIR's efforts to encourage the community to speak up against intended cuts in Europe's future research budget have paid off. While overall funding for Horizon 2020 is less than originally requested by the European Parliament, €7.4 billion of the €70 billion budget has been committed to fund "Health, demographic change and well-being", underlining the importance of investing in health-related research.

In addition, EIBIR's contribution to the strategic direction of the research programme, and participation in a consultation on the envisaged inclusion of public-private partnerships in Horizon 2020, were well-received. Imaging has taken a prominent role in the work programme, and we are confident that innovative proposals utilising biomedical imaging technologies will be key to addressing the challenges laid out in the calls.

Furthermore, enhanced public-private partnerships, realised through joint programme with industry continues through the Innovative Medicines Initiative 2 (IMI2). The IMI2 strategic research agenda describes the opportunities for collaboration between public and private entities, and with an increased budget to further remove silos in European drug development. EIBIR emphasised the role of image-guided drug delivery in the consultation paper for the IMI2 strategic research agenda.

We are pleased to report that EIBIR's collaboration with industry continues to deepen. An industry-initiated investigational study on MRI (MIPA) as an initiative of EuroAIM is entering its second year.

A workshop with Industry Panel members outlined areas of potential collaboration and defined a roadmap for future interaction between EIBIR and its industry members. Additionally, EIBIR's Industry Packages have been updated to better reflect the needs of SMEs, offering an increased level of service for a lower annual fee. Considering the emphasis being placed on SME participation in the upcoming Horizon 2020 work programme, EIBIR is ideally suited to provide additional support to SMEs to help them take advantage of the new opportunities as they become available.

The upcoming year will be both challenging and exciting with the opportunities resulting from the start of the new funding programme, EIBIR continues to actively monitor developments and plan on a strategy that will allow the network to thrive, and the activities of its multi-disciplinary thematic working groups to continue. As EU funding is never assured, we would like to gratefully acknowledge the support provided by our Industry Panel and its members, which allowed EIBIR to invest in some new initiatives and to support the application phase for new projects.

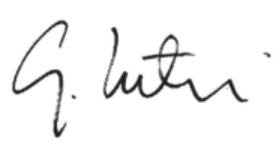
We are also thankful, of course, to the European Society of Radiology, which once again provided significant funds to EIBIR over the past year. EIBIR's shareholder organisations evolved with the addition of a new member in 2013. A restructured commitment agreement was also instituted and we are happy to acknowledge the support our shareholders have demonstrated.

In the following pages you will find a series of interviews and reports illustrating the activities of the EIBIR community; activities which rely heavily on individual input. Before concluding, we would like to thank EIBIR's Network Members who continue to support EIBIR with bottom-up initiatives and involvement in our activities. This also warrants a reminder to EIBIR's eleven shareholder organisations and our industry partners about their commitment to empowering the network by bringing forth their own ideas and proactively engaging in EIBIR's activities.

We look forward to working with you over the course of a productive 2014!

Yours sincerely,

Jürgen Hennig
EIBIR Scientific Director



Gabriel Krestin
Chair of EIBIR General Meeting
ESR Past-President

Jürgen Hennig
EIBIR Scientific Director

Gabriel Krestin
Chair of EIBIR
General Meeting,
ESR Past-President

Highlights

Oliver Speck

"The results of the first open call demonstrated high interest of potential future users with over 2200 submitted project proposals. This indicates that the European imaging community would definitely make use of the service provided by Euro-BioImaging." (p. 9)

Eva Wardelmann

"The earlier secondary progress is detected and treated, the longer the survival of GIST patients will be. The more precise the treatment modulation using orally administered drugs, combined with novel ablative approaches, the higher the probability that this goal will be achieved." (p. 11)

Markus Harz

"A crucial step we need to take now is to define very clear-cut scenarios of the clinical support that is most needed. We are in the process of interviewing physicians, radiologists, pathologists, as well as patients to learn more about this. Much of how we will design our support will depend on this feedback." (p. 12)

EIBIR Summer School on Neuroimaging

Audrey Verde

"The summer school was such a wonderful opportunity to interact with researchers involved in all aspects of image analysis and provided a diverse network that I hope will lead to future collaborations." (p. 7)

Joint Initiative in Paediatric Radiology

Karen Rosendahl

"The Initiative's goal will be to initiate, facilitate and enhance multi-institutional, multinational research in paediatric imaging, image-guided intervention and radiation protection, in particular prospective multi-institutional clinical trials with their origins in paediatric radiology." (p. 20)

Joint Initiative in Image Guided Radiotherapy

Vincenzo Valentini

"Because treatment modalities in radiotherapy are becoming so sophisticated, there is great need to jointly enhance research activities with specialists in the field of imaging, as well as engineering, to increase our understanding and improve the benefits for our patients." (p. 20)

COST Action – Theranostics Imaging and Therapy: An Action to Develop Novel Nanosized Systems for Imaging-Guided Drug Delivery

Silvio Aime

"Most of the work presented at the Annual Meeting was the result of collaborations that have been established among different teams and a large percentage of the collaborations were realised from the 13 Short-Term Scientific Missions which took place during 2013." (p. 15)

EIBIR Events in 2013

EIBIR @ ECR 2013

Four EIBIR public sessions and the IMAGINE exhibition and workshops were held this past year at the European Congress of Radiology.

The Euro-BioImaging session **"Towards implementation of a pan-European imaging research infrastructure"** included presentations about the goals of the Euro-BioImaging project, as well as examples of potential node applications.

"A radiologist with a ruler in his hand is a dangerous person: Seeking standardisation in multicentrer imaging trials" was put on as a joint effort between EIBIR and the EORTC. The workshop focused on the use of imaging biomarkers. Although they hold great promise, qualifying these imaging biomarkers requires robust methodology. Emphasis was placed on the need for proper study design following standardised procedures, correlation with pathology/outcome, reproducibility testing and optimal timing of observation, and sufficient statistical power.

Providing insights into the early development of the next European Commission research programme **"Horizon 2020"** took a specific look at the impact of public private partnerships, the role of imaging in health research in an era of personalised medicine and the support services EIBIR can provide.

Presented by the EuroAIM Joint Initiative **"Evidence-based radiology"** examined a number of different projects being run by the initiative; from the results of the analysis of the authorship of secondary studies on imaging tests to the status of the MIPA study.

"Novel technology that shapes Radiology: EIBIR presents IMAGINE @ ECR 2013" was held over three days of the Congress. The core of IMAGINE was interactive sessions in which presenters demonstrated their work and visitors got hands-on experience with developed techniques and tools. The topics covered included: Oncological image and analysis; Quantitative image analysis and Image guided interventions and computer aided diagnosis.

SUMMER SCHOOL on Neuroimaging

Audrey R. Verde
Organisation: *University of North Carolina-Chapel Hill*
Country: *USA*

The EIBIR Summer School took place in August this year in Dubrovnik, Croatia. This multidisciplinary summer school was a great success, bringing together 42 young researchers from a variety of backgrounds, including MDs, biomedical engineers and mathematicians. The faculty members and the students were very engaged and enthusiastic, and post-session discussions continued long into the evening over dinner and drinks!

Session topics included image acquisition and analysis and translation to clinical practice. Some highlights of the week included the poster sessions, where the students had the opportunity to showcase their research and receive feedback, and the intercultural evening, where everyone had the opportunity to share various delicacies from their home country.

Audrey Rose Verde graduated as valedictorian from North Carolina State University in 2006. In 2008 she began her studies at the University of North Carolina-Chapel Hill MD-PhD Programme with her PhD research being carried out in the labs of Martin Styner, Ph.D. & Charlotte Boettiger Ph.D. Audrey participated in this year's Summer School and shared her impressions from a student's perspective.

Why were you interested in participating in the Summer School?

In my thesis project I am investigating the structural integrity of the episodic memory circuitry in cigarette smokers and nonsmokers using DTI tractography and anatomic MR images. For this analysis I created a study specific atlas to perform tractography, and this made me want to better understand the concepts behind image acquisition and registration. The Summer School thus provided an attractive opportunity to learn more about MRI in general, the math behind different types of registration methods, and what to consider when quality controlling an atlas. Also, as an MD-PhD student, I was interested in how to translate research image analysis tools to the clinic.

What did you enjoy most about the Summer School?

I enjoyed really everything about the school. I loved meeting students from different countries, with various education and research backgrounds. I enjoyed meeting the faculty and hearing about their work during lectures. I loved the location and that we stayed at the university in Dubrovnik. It was fun for me to see what a university looked like outside of the US. I also enjoyed that all of the students were staying in the same place, so that we could all interact outside of class. From the actual schedule of events, I particularly enjoyed the poster sessions and the intercultural evening.

Are there any changes you would like to see made?

Many of the faculty gave their presentation right up to the limit of their session, and there was no time left for further questioning or discussion. The chance to speak with them more at dinner or in the evening would have been an excellent opportunity to ask for advice on my project, ask questions about their lecture, and to network for future collaborations.

How will the Summer School contribute to your future education and career?

I honestly use the knowledge I acquired on a daily basis in my PhD work, and I imagine that I will continue to draw on this information. The summer school also highlighted how physicians and researchers can work together to develop cutting edge image analysis tools that are easy for physicians to use and that will provide useful information for clinical decisions. This was perfect for me, as this is the interface at which I see my future career as an MD-PhD. For the big picture though, the course opened my eyes to how many different fields come together to advance the overarching field of medical image analysis. The summer school was such a wonderful opportunity to interact with researchers involved in all aspects of image analysis and provided a diverse network that I hope will lead to future collaborations.

Industry Panel Workshop

As a follow up to discussions begun at the EIBIR Industry Panel meeting during ECR 2013, an Industry Panel Workshop was held on 28 October to discuss how the interaction between industry and EIBIR could be strengthened. Of particular interest was the identification of common R&D topics where collaborative opportunities for research project could be pursued.

In addition to the EIBIR representatives in attendance, individuals from Bracco Imaging, Siemens, GE Healthcare and Barco, also participated.

This collaborative engagement is a critical step for strengthening the links between EIBIR and Industry, and EIBIR would like to thank its representatives and the Industry Panel members for their participation and continued commitment.

EIBIR Projects

As part of its long-term scientific strategy, EIBIR facilitates international state-of-the-art research in biomedical imaging across disciplines. To this end, three new European Union funded projects began this past year. The kick-off for **VPH-PRISM** was held in March, followed by **VPH-DARE@IT** in April. Under one of the last calls of the FP7 funding programme, **MITIGATE** was positively evaluated and began in October. **Euro-BioImaging** successfully realised the end of the Preparatory Phase in 2013 and enters a transition phase, bridging the Preparatory and Construction Phases. Work also continued on two **COST Actions**, and the industry initiated **MIPA** study.

EURO-BIOIMAGING

EIBIR and the European Molecular Biology Laboratory (EMBL) share scientific coordination of Euro-BioImaging, the aim of which is to establish a harmonised, pan-European Biomedical Imaging Research Infrastructure.

Spring 2013 saw the first call for node applications, with applications reviewed by an esteemed panel of evaluators. The end of 2013 also saw the conclusion of the Preparatory Phase, with the Construction Phase scheduled for 2014 – 2017.

Oliver Speck from the Otto-von-Guericke-Universität Magdeburg, DE, represents EIBIR as Scientific Coordinator of Euro-BioImaging. Prof. Speck, who assumed the role in March 2013 from Stefan Schönberg, shares his thoughts about the future of Euro-BioImaging as the project enters a transition period in 2014.

SEVENTH FRAMEWORK PROGRAMME

What were the main activities carried out by Euro-BioImaging in 2013?

In January the future decision making body of Euro-BioImaging, the Intergovernmental Working Group, was constituted. This group of ministry and funding agency delegates will, from now on, steer and further develop the Euro-BioImaging concept. Members of the group already expressed their interest in relying on the experience of the Euro-BioImaging Preparatory Phase Project Management Team for bringing Euro-BioImaging into operation.

In spring 2013 Euro-BioImaging published the 1st Open Call for Nodes, taking concrete steps towards the construction of a coordinated open access imaging infrastructure. Euro-BioImaging invited imaging facilities to submit their Expressions of Interest to become a Euro-BioImaging Node. In total 71 proposals for Euro-BioImaging Nodes were submitted by 221 institutions from 19 European countries. Fourteen proposals came from the medical imaging domain and presented sound concepts for Nodes on Ultra Highfield MRI, MR-PET, Population Imaging and Phase Contrast Imaging. Ten proposals for molecular imaging were submitted. All Expressions of Interest were reviewed by an independent international evaluation board, comprising some of the world's best imaging scientists. Euro-BioImaging's first Open Call was a great success and we are pleased to see that so many European imaging facilities are ready to provide open access to external users.

One important step towards Euro-BioImaging's international outreach was the initiation of a collaboration agreement between Euro-BioImaging and the Australian National Imaging Facility.

EIBIR

EURO-BIOIMAGING

Oliver Speck
Organisation: *Otto-von-Guericke-Universität Magdeburg*
Country: *Germany*

Title:
Euro-BioImaging: European Research Infrastructure for Imaging Technologies in Biological and Biomedical Sciences

Funding Source:
European Union FP7

Current Status:
Preparatory Phase (2010-2013)

Website:
www.eurobioimaging.eu

Participating Organisations:
- *European Molecular Biology Laboratory, DE*
- *Abo Akademi, FI*
- *Aarhus Universitetshospital, Skejby, DK*
- *Biotechnology and Biological Sciences Research Council, UK*
- *Agència d'Informació, Avaluació i Qualitat en Salut, ES*
- *Commissariat a l'Energie Atomique, FR*
- *Consiglio nazionale delle Ricerche, IT*
- *Centre National de la Recherche Scientifique, FR*
- *Fundacio Privada Centre de Regulacio Genomica, ES*
- *Deutsche Forschungsgemeinschaft, DE*
- *Erasmus Universitair Medisch Centrum Rotterdam, NL*
- *European Organisation for Reserach and Treatment of Cancer, BE*
- *Ecole Polytechnique Federale de Lausanne, CH*
- *Eidgenössische Technische Hochschule Zürich, CH*
- *Funadcio Privada Clinic per a la Recerca Biomedica, ES*
- *Novartis Forschungsstiftung, Zweigniederlassung Friedrich Miescher Institute for Biomedical Research, CH*
- *Fraunhofer-Gesellschaft zur Foederung der Angewandten Forschung, DE*
- *Hermann von Helmholtz-Gemeinschaft Deutscher Forschungszentren, DE*
- *Instituto Europeo di Oncologia, IT*
- *Institute of Molecular Genetics- Academy of Sciences of the Czech Republic, CZ*
- *Imperial College of Science, Technology and Medicine, UK*
- *Institut National de Recherche en Informatique at en Automatique, FR*
- *Institut National de la Sante et de la Recherche Medicale, FR*
- *Ludwig Maximilians-Universitaet Muenchen, DE*
- *Max Planck Gesellschaft zur Foerderung der Wissenschaften, DE*
- *Instytut Biologii Doswiadczelnej im. M. Necnckiego Polskiej Akademii Nauk, PL*
- *Nederlandse Organisatie voor Wetenschappelijk Onderzoek, NL*
- *Otto-Von-Guericke-Universitaet Magdeburg, DE*
- *Ruprecht-Karls Universitaet Heidelberg, DE*
- *Universitaetsklinikum Freiburg, DE*
- *Universitair Medisch Centrum Utrecht, NL*
- *Universita degli Studi di Torino, IT*
- *University of Dundee, UK*
- *Universitat Pompeu Fabra, ES*
- *Uppsala Universitet, SE*
- *Weizmann Institute of Science, IL*
- *Westfälische Wilhelms-Universitaet Muenster, DE*
- *The Netherlands Organisation of Health Research and Development, NL*

The preparatory phase came to an end in 2013 – what are the next steps for starting the Construction Phase?

Euro-BioImaging will now enter into a transition phase, a phase bridging preparation and construction. It is envisaged that by the end of this year, 11 interested Member States will sign a Memorandum of Understanding (MoU), thereby stating their intent to take the necessary steps towards the construction and operation of Euro-BioImaging and facilitating continued discussions during the transition phase.

In 2014 MoU signatories will work together towards the realisation of the legal model for Euro-BioImaging, the determination and integration of future Nodes, and the revision and adoption of the financial plan.

The most exciting task ahead will be the identification of the country that will host the Hub of Euro-BioImaging. Criteria and procedures are currently elaborated by members of the Intergovernmental Working Group.

What aspects of Euro-BioImaging are most encouraging as the project moves forward?

We are pleased to see that a large number of countries have put Euro-BioImaging high on the national research infrastructure roadmap and show interest by signing the MoU.

Furthermore, the investments for medical and biological imaging research infrastructure already made within the EU member states are a guarantee of their commitment to the field of imaging.

The results of the first Open Call demonstrated high interest of potential future users with over 2200 submitted project proposals. This indicates that the European imaging community would definitely make use of the services provided by Euro-BioImaging.

How will EIBIR contribute to this?

EIBIR will continue to represent the interests of the medical and molecular imaging community in the implementation process. Stakeholders will continuously be informed about the progress. EIBIR, together with EMBL, will continue to support the Intergovernmental Working Group by providing expertise gained during the Preparatory Phase, by assisting in the drafting of relevant documents, as well as by coordinating the activities and meetings of the country representatives.

MITIGATE

Successfully evaluated in one of the last Health Calls under the European Union's 7th Framework Programme, MITIGATE will develop a closed-loop personalised treatment concept for gastrointestinal stromal tumors (GIST), a rare type of cancer. Scientifically led by Prof. Stefan Schönberg from Ruprecht-Karls-Universität Heidelberg, with coordination support provided by EIBIR, the developed treatment will focus on patients resistant to the currently available class of medication, the tyronise kinase inhibitors (TKI). This envisaged personalised treatment concept combines innovative strategies for biopsy, inline tissue analysis, molecular tumour characterisation, theranostics by imaging technologies (PET and MRI) and companion radiopharmaceuticals followed by the assessment of biodistribution, dose calculation and measurement of therapeutic effectiveness. In addition, synergistic concepts of minimally-invasive treatment will be applied.

It is expected that the developed treatment can then be used as a role model for other types of cancer which are no longer responsive to targeted therapy.

Sharing her insights into the MITIGATE project is Prof. Eva Wardelmann, Chair of the Gerhard Domagk Institute of Pathology at the University Hospital Münster, DE and member of the project's Clinical Innovation Advisory Board.

The cancer studied in the project is a rare type of cancer, what are some of the challenges presented when studying this rare disease when compared to other, more common diseases?

In general, rare types of cancer are associated with several handicaps not associated with other, more common diseases. Their clinical recognition is more difficult, often resulting in later correct diagnosis. Their biological behaviour is less well known. The same holds true for the knowledge about how to treat these patients appropriately. Only a limited number of research groups are working on the respective disease.

Acquisition of funding is more difficult as the general interest in rare cancer is often low. The number of patients who can be recruited for clinical trials is lower, so it is more difficult to evaluate novel treatment regimens. Trials have to be performed as multicenter trials with low numbers per single centre, which may hinder standardisation of response evaluation. Finally, the development of novel innovative drugs is less interesting for pharmaceutical companies, hampering new treatment approaches.

What are the innovative aspects of the MITIGATE project?

The MITIGATE consortium is integrating several interesting aspects into their research plan, allowing them to monitor the development of the GIST disease over the course of time. Although many new aspects about the effective treatment of GIST have been detected during the last few years, little is known about secondary progression and how to approach this complication. Secondary resistance is very common the longer the treatment lasts. One of the major challenges in GIST treatment is to detect this secondary progression as early as possible before a general progression occurs. MITIGATE aims to identify patients with localised progression, to validate the mechanism of this event and to treat patients with minimally invasive procedures. This approach is highly innovative and urgently needed. One major hope is that research in this specific tumour group will also be translated to other tumour entities with very similar resistance mechanisms.

How could this improve treatment for GIST patients?

The earlier secondary progress is detected and treated, the longer the survival of GIST patients will be. The more precise the treatment modulation using orally administered drugs, combined with novel ablative approaches, the higher the probability that this goal will be achieved. Consequently, the number of patients being cured of GIST could increase, which would be a fantastic improvement for them.

Eva Warderlmann
Organisation: *University Hospital Münster*
Country: *Germany*

SEVENTH FRAMEWORK PROGRAMME

Title:
Closed-loop Molecular Environment for Minimally Invasive Treatment of Patients with Metastatic Gastrointestinal Stromal Tumours

Funding Source:
European Union FP7
Grant number 602306

Current Status:
Active (October 2013-2017)

Website:
www.mitigate-project.eu

Participating Organisations:
- *Ruprecht-Karls-Universität Heidelberg, DE*
- *Medizinische Universität Innsbruck, AT*
- *Università Degli Studi di Torino, IT*
- *Fraunhofer Gesellschaft zur Förderung der Angewandten Forschung E.V, DE*
- *Cage Chemicals SRL, IT*
- *Advanced Accelerator Applications, FR*
- *Rapid Biomedical GmbH, DE*
- *Stemcell Technologies SARL, FR*
- *Hochschule Mannheim, DE*

Markus Harz
Organisation: *Fraunhofer MEVIS*
Country: *Germany*

SEVENTH FRAMEWORK PROGRAMME

VPH-PRISM

Researchers in the VPH-PRISM project are developing new procedures to improve treatment of breast cancer using multidisciplinary image data. Eight research partners, coordinated by EIBIR, are developing novel software systems that intelligently connect medical data sets to allow innovative assistive functions. The researchers plan to combine image data generated by various diagnostic procedures (X-ray, MRI, tissue histology) for display in a single software application. Additionally, a database to connect images with other relevant information, such as a patient's risk of hereditary disease and environmental factors is anticipated. The goal is improved breast cancer therapy selection and outcome prediction, as well as surgery planning.

Markus Harz, from Fraunhofer MEVIS, is scientific project manager of the VPH-PRISM project and shares his perspective about the first year of the project.

How would you evaluate the first year of the VPH-PRISM project?

With a very productive kick-off meeting in Vienna in March 2013, the project partners very quickly began working as a team. It was certainly fortunate for the initial progress that many of the partners already knew each other from the predecessor project, HAMAM. Propelled by this collaborative spirit, we had a great clinical workshop in Dundee in July. What I liked most was seeing the close cooperation between the image analysis researchers and clinicians from all disciplines. We can also be very proud that the collection of prospective patient data is about to start, and that the technical prerequisites like the central server that will store the data, and the web-based tools for uploading and annotating the data are already conceptually ready.

Altogether, I think all project members leave the first year with the feeling that an excellent mutual understanding has been established, and that we are really working as a team.

What are some of the upcoming scientific challenges for the consortium?

A crucial step we need to take now is to define very clear-cut scenarios of the clinical support that is most needed. We are in the process of interviewing physicians, radiologists, pathologists, as well as patients to learn more about this. Much of how we will design our support will depend on this feedback. Of course there are many other big challenges we still need to address, for example solving the spatial correspondence problem between pathology slides and MRI images. The developments we have in mind need very careful design. Then there is the area of digital pathology image processing, where the tools for quantitative analyses we want to provide are unprecedented. And lastly, a huge technical challenge is still integrating all the components into the web-based patient database system which will be dramatically different from any PACS you might know.

How will patients benefit from the work done during the project?

The project itself has set the goal to improve outcomes of breast cancer treatment. This begins with more accurate diagnoses that takes into account risk factors, but also dedicated imaging to, from the start, get as few false positive imaging findings as possible. Then, if it comes to a biopsy, we hope we can improve the target selection by predicting for the individual woman where the biopsy is supposed to be most helpful and decisive. After biopsy, the automated analysis of the specimen yields quantitative tissue parameters that can be correlated to imaging, again helping to give a more accurate diagnosis, and helping to decide on the most promising therapy approach. Finally, we will help to track therapy success by quantifying tissue parameters over time so that, for example, the expected response to chemotherapy can be determined earlier. Reducing overdiagnosis, reducing overtreatment, and reducing the wrong treatments is a good summary of our goals.

Title:
Virtual Physiological Human: Personalised Predictive Breast Cancer Therapy Through Integrated Tissue Micro-Structure Modeling

Funding Source:
European Union FP7
Grant number 601040

Current Status:
Active (March 2013-2016)

Website:
www.vph-prism.eu

Participating Organisations:
- *Fraunhofer MEVIS, DE*
- *Radboud University Medical Center, NL*
- *University College London, UK*
- *Philips Technologie GmbH, DE*
- *The University of Chicago, US*
- *University of Dundee, UK*
- *Medizinische Universitaet Wien, AT*
- *Boca Raton Regional Hospital, INC., US*

VPH-DARE@IT

VPH-DARE@IT aims to provide a systematic, multifactorial and multi-scale modelling approach to understanding dementia onset and progression. It will explore the lifestyle and environmental factors that predispose its development, and will deliver more objective and accurate differential diagnosis than what is available thus far in Europe, by shortening the current average 20-month time lapse between the onset of cognitive and memory deficits and its specific clinical diagnosis.

Project manager from the University of Sheffield, Mark Pullinger provides insight into the VPH-DARE@IT project.

What are some of the initial activities that have been carried out by VPH-DARE@IT?

The first few months of the project have been dedicated primarily to building the transnational team that will deliver the project's activities. The kick-off meeting, held in Sheffield in April 2013, was the main means to achieve this, bringing together 52 researchers from the project's 20 partners.

Other early activities have included a comprehensive literature review of lifestyle and environmental factors that can contribute to the onset of dementia. This important document – led by the University of Sheffield, but with contributions from many other partners – has recently been submitted for publication in the Journal of Alzheimer's Disease and has laid essential groundwork for subsequent project studies.

In addition, the project has finalised two important deliverables delineating future planned studies. The deliverables, led by the team at the University of Eastern Finland, have been produced to design clinical studies to test the project's hypotheses on dementia progression; and to develop data access policies to ensure that the project has access to the existing clinical databases it will need to carry out its work successfully.

How do you integrate the many different scientific perspectives that are contributing to the project?

We recognise that we have a very multidisciplinary consortium, which is a particular strength, as it allows many different perspectives to be brought to bear upon the project's scientific challenges. Consequently, we have tried to avoid a bureaucratic style of meeting and have attempted to use open symposium formats. In this way, topics are presented to an audience of experts and non-experts, which allows for a very open discussion and for questions to be raised that might not otherwise be addressed. This style has proven popular with the consortium and there are plans to extend it further to encourage the involvement of young scientists.

On a more formal level, we are holding monthly teleconferences and quarterly meetings with the project's scientific leadership team to ensure that any possible problems are identified as early as possible. Through careful initial selection, we have managed to ensure that the leadership team reflects a broad cross-section of expertise from the project.

For the upcoming year, what are some of the key topics to be addressed?

Now that the launch phase has been completed, the project will move into the delivery phase. A large number of scientific outputs need to be completed by October 2014. The project aims to deliver both a clinical platform for personalised diagnosis of dementia and a research platform to integrate existing tools that focus on dementia research; prototype versions of each of these will be up and running within the next year. Effort will also focus on the development of new modelling and imaging protocols to assist clinicians with earlier diagnosis of dementias; whilst work will also begin on assessing the economic impact of the planned tools, in order to develop a suitable exploitation route to ensure maximum impact.

Mark Pullinger
Organisation: *University of Sheffield*
Country: *UK*

SEVENTH FRAMEWORK PROGRAMME

Title:
Virtual Physiological Human: DementiA Research Enabled by IT

Funding Source:
European Union FP7
Grant number 601055

Current Status:
Active (April 2013-2017)

Website:
www.vph-dare.eu

Participating Organisations:
- *University of Sheffield, UK*
- *University College London, UK*
- *VTT Technical Research Centre, FI*
- *Universitat Pompeu Fabra, ES*
- *Engineering Systems International S.A., FR*
- *ASD Advanced Simulation & Design GmbH, DE*
- *empirica Gesellschaft für Kommunikations- und Technologieforschung GmbH, DE*
- *University of Oslo, NO*
- *Erasmus MC, NL*
- *Hirslanden Klinik, CH*
- *Philips Medical Systems BV, NL*
- *ETH Zurich, CH*
- *Philips Technologie GmbH Innovative Technologies, DE*
- *Sheffield Teaching Hospital Trust, UK*
- *University College London, UK*
- *University of Eastern Finland, FI*
- *University of Maastricht, NL*
- *Tomorrow Options Microelectronics S.A., PT*
- *Imperial College London, UK*

COST Action - Arterial Spin Labelling Initiative in Dementia (AID)

Matthias Günther
Organisation: *Frauhofer MEVIS*
Country: *Germany*

The COST Action AID project aims to coordinate the development of an alternative and cost-effective tool based on an MRI technique, Arterial Spin Labelling (ASL), to obtain reproducible brain perfusion measurements in dementia patients.

In 2013 the activities of the COST Action AID were dominated by the two large training schools, organised with the help of EIBIR, to teach clinicians and researchers in the field of arterial spin labelling. There were two schools with different focuses: one school in Verona with a focus on clinical aspects and one in Toulouse for technical background. The school in Verona, Italy, took place from 4-6 July, 2013 and was entitled “Arterial Spin Labelling (ASL) Training School”.

Over 50 attendees from all over Europe with both medical and physics backgrounds had the opportunity to learn from interesting lectures given by seven teachers. The school was very well received. The average rating from the participants regarding quality of the lectures and setting was very good to good.

The training school "Technical Background of ASL in Dementia" in Toulouse took place from 30 September – 2 October, 2013, with a very strong focus on the technical background of ASL. This school was attended by 53 individuals from 11 European countries, mainly with backgrounds in engineering and physics, but also with some clinician participants. The average rating of the school was excellent.

Toulouse Training School

ASL network dinner in Salt Lake City

Title:
Arterial Spin Labelling Initiative in Dementia (AID)

Funding Source:
COST Action

Current Status:
Active (2011-2015)

COST Action - Theranostics Imaging and Therapy: An Action to Develop Novel Nanosized Systems for Imaging-Guided Drug Delivery

The Annual Meeting of the COST Action TD1004 Theranostics Imaging and Therapy: An Action to Develop Novel Nanosized Systems for Imaging-Guided Drug Delivery was held in Athens, Greece, from 1 – 3 September, 2013.

In total, 110 participants attended the meeting. The scientific programme spanned two full days and included 2 invited lectures, 40 oral presentations by members of all 5 Working Groups, and 45 poster presentations.

One of the main priorities of this COST Action is the establishment of networks among the different research groups within each Working Group, and among the different Working Groups of the Action. Most of the work presented at the Annual Meeting was the result of collaborations that have been established among different teams and a large percentage of the collaborations were realised from the 13 Short-Term Scientific Missions which took place during 2013.

The results from the research activities carried out in the COST Action TD1004 during this year are very promising, and mostly focused on developing a better understanding of crucial aspects of the whole drug delivery process in vivo, in particular regarding the efficiency of drug targeting and release and the relationship to the therapeutic effect. Imaging (PET/SPECT, MRI, Optical Imaging, etc) has proven to be an outstanding tool in the elucidation of drug delivery and release.

Silvio Aime
Organisation: *Department of Chemistry and Molecular Imaging Center, University of Torino*
Country: *Italy*

Title:
Theranostics Imaging and Therapy: An Action to Develop Novel Nanosized Systems for Imaging-Guided Drug Delivery

Funding Source:
COST Action

Current Status:
Active (2011-2015)

MIPA
Pre-op Breast MRI

Katja C. Siegmann-Luz
Organisation: *University Hospital Tübingen*
Country: *Germany*

EUROPEAN INSTITUTE FOR BIOMEDICAL IMAGING RESEARCH

EUSOBI european society of breast imaging

Bayer HealthCare

In order to address the uncertainty surrounding its use, the MIPA project, sponsored by Bayer, will conduct a systematic evaluation of preoperative breast MRI, examining individual patient data in a multicenter, international setting. EIBIR is delighted that Bayer has agreed to provide essential support for a study that will be crucial in increasing knowledge about the clinical use of contrast-enhanced breast MRI.

From the nearly 100 applicants across the world, 35 centres from Europe, America and Australia were chosen to participate. Following the kick-off meeting in March 2013, these 35 centres have been taking the necessary steps to begin collecting patient data. To date, 30/35 centres have obtained ethical approval; 20/31 have signed the legal agreement with EIBIR, 15/20 have started their patient enrolment, and 350 patients have already been enrolled.

Dr. Katja C. Siegmann-Luz is head of women's imaging at the Department of Radiology, University Hospital Tübingen, with a main focus on breast imaging. As the Hospital's principle investigator for the MIPA study, more than 50% of their patient enrolment has already been achieved.

Why was your centre interested in applying to participate in the MIPA study?

We believe in the advantage of preoperative breast MRI in patients with breast cancer and have published a retrospective study on this issue. Unfortunately, gynaecologists only believe in prospective randomised trials. We hope that prospectively collected data of the MIPA study will demonstrate the positive consequences of preoperative breast MRI for the patients.

How far has your centre progressed with the project?

To date we have collected the data of more than 150 patients. The total number at our study centre will be 220 patients.

Are there specific project results that your is centre interested in?

The influence of preoperative breast MRI on the number of operations, recurrent breast cancer and overall survival. Thereafter, it would be interesting to know which patients benefit most: Those with dense breasts? Those with lobular carcinoma? Those with ductal carcinoma in situ?

What is your impression of having industry involvement in defining the research agenda?

I do not have the impression that the study aims were influenced by industry involvement. Although the reimbursement does not cover all the costs for data collection and electronic documentation, without any support (from industry) we would not have applied to participate.

Title:
Preoperative Breast MRI in Clinical Practice: Multicenter International Prospective Meta-Analysis (MIPA) of Individual Woman Data

Funding Source:
Industry Sponsored (Bayer Healthcare-Medical Care-Radiology and Interventional)

Current Status:
Active (Summer 2012 – 2017)

Joint Initiatives

EIBIR's five joint initiatives represent interdisciplinary groups working towards a common bioimaging-focused research goal. Each initiative undertakes activities best suited to realising their individual objectives. In addition, two new Initiatives focused on paediatric radiology and image guided radiotherapy are in the early phases of development.

EIBIR is delighted to welcome two new directors: Nandita deSouza from Royal Marsden Hospital Institute of Cancer Research, UK will be leading the Cancer Imaging Working Group while Michal Neeman from the Weizmann Institute of Science, IL has taken responsibility for the Cell Imaging Network. We extend our appreciation to Peter Brader and Monique Bernsen for their past leadership of the Cancer Imaging Working Group and the Cell Imaging Network.

Biomedical Image Analysis Platform

Wiro Niessen
Director of the Biomedical Image Analysis Platform

The Biomedical Image Analysis Platform **is aimed at fostering collaboration in the field of biomedical image analysis and image guided interventions in Europe.** In 2013, the Biomedical Image Analysis Platform actively participated in the ESFRI Euro-BioImaging project. Specifically, a team of European research institutes responded to the call for Euro-BioImaging nodes to set-up an IT infrastructure to enable the standardised evaluation of image analysis algorithms ("Challenges Framework"). Through these efforts, the platform seeks to contribute to more standardisation, objective evaluation, and improved accessibility of evaluated and standardised image analysis tools to researchers within Europe.

In 2013, two new European projects, with EIBIR involved in management and dissemination, started. The VPH-PRISM project is aimed at improving breast cancer treatment and therapy by helping translate image data into a comparative framework and creating an interdisciplinary link between the broad range of medical imaging technologies such as mammography, ultrasound, MRI, as well as tissue histology. VPH-DARE@IT aims to develop methods for early and differential diagnosis and management of dementia by a multidisciplinary approach integrating heterogeneous data (e.g. including genetic and imaging data) and using advanced data processing tools and modelling paradigms.

The platform further organised the 11th edition of EIBIR presents IMAGINE at ECR 2013 and its third summer school "Neurology Imaging", which was held in Dubrovnik in August 2013; for more information on these activities, see pages 6 and 7.

Silvio Aime
Director of the Chemistry Platform

Chemistry Platform

At the basis of EIBIR's objectives is the concept that **progress in medical imaging science relies on constant scientific exchange among many disciplinary fields**. Therefore EIBIR decided to support initiatives aimed at developing research projects in the field of chemistry for Imaging. One of these initiatives has led to the COST Action TD1004 on Theranostics. The Action develops very well (see the full report on p. 15), with an increasing number of inter-laboratory collaborations. Moreover, the legacy of the EU-funded ENCITE (European Network for Cell Imaging and Tracking Expertise) project has led to the multi-sited cluster initiative for training in the field of visualisation of cell tracking and cell therapy. The links generated through the EIBIR Chemistry Platform will play a key role in the sessions devoted to Chemistry for Imaging at the next major European Chemistry Conference.

Francesco Sardanelli
Director of EuroAIM

European Network for the Assessment of Imaging in Medicine (EuroAIM)

During 2013, EuroAIM worked on two main initiatives. The evidence-based radiology working group (EBR-WG) completed the evaluation of the inclusion of radiologists and nuclear physicians (imaging specialists) as authors of systematic reviews and meta-analyses on diagnostic and interventional imaging procedures published from 2001 to 2010. Of a total of 875 analysed papers, only 333 (38%) included imaging specialists in the authorship. **A significant reduction in the scientific quality of papers was demonstrated when imaging specialists were not included in the authorship.** This is the first extensive analysis showing the need for including content area experts as authors of systematic reviews and meta-analysis, at least for a medical discipline characterised by high technical expertise, such as radiology. The manuscript has been accepted, pending revision, by a top-level radiological journal. The EBR-WG is now discussing the need for analysis of the quality of guidelines on imaging and on a plan for new systematic reviews on imaging. Besides the EBR-WG activity, **EuroAIM launched a multicenter study on preoperative breast MRI in cooperation with the European Society of Breast Imaging**, thanks to a research grant from Bayer AG. On December 12, 2013, more than 350 patients were enrolled in 15 centres worldwide (see p. 16).

Cancer Imaging Working Group

Nandita deSouza
Director of the Cancer Imaging Working Group

The goal of the Cancer Imaging Working Group, under the new directorship of Prof. deSouza, will be twofold: first to integrate the work of the EIBIR cancer initiative with that of the EORTC Imaging group so that common interests are aligned, thereby reducing the duplication of effort. Secondly, the Initiative will explore opportunities for novel imaging biomarkers by combining modalities and image processing efforts. In collaboration with the EORTC, the initial focus will be the "**development of a 'virtual core lab' for central review"**. This ambitious undertaking is composed of many steps; however, its realisation would be a very significant step forward, and something that neither organisation could achieve independently. Each contributes different strengths – EIBIR software platforms and image processing knowledge while EORTC has access to trials data. Another area with opportunity for progress is through small groups, in conjunction with industry, "**willing to work together and share ideas on development of novel biomarkers, new radiotracers etc. This is a very important imaging question that does not require the infrastructure of a clinical treatment trial, but could be done out of the context of treatment, or in patients receiving standard-of-care treatment".**

Cell Imaging Network

Michal Neeman
Director of the Cell Imaging Network

Critical challenges for imaging that can be addressed through this Network motivated Prof. Neeman to assume the role of Director. **"Cells are the basic units of life, and are increasingly recognised for their potential in therapy, for targeted elimination of pathological processes (using immunotherapy) and for regenerative medicine".** The first of two goals for the Network will be to build the community of European researchers interested in cellular imaging and, if possible, to enhance the links among groups developing cellular based therapies, from basic biology to translation. **"Those two efforts, namely imaging and therapy, must always be combined, and this is particularly the case for cellular based therapy".** The second goal is to seek collaborative funding to help advance this field, following the success of the FP7 funded ENCITE project coordinated by EIBIR. Building off the exciting platform established by ENCITE, dedicated sessions or workshops to foster interaction between the groups, and evaluation of options for funding within the Horizon 2020 program are some of the expected initial activities. As noted in the Events section (p. 36), a dedicated session on cellular imaging will be held during ECR 2014.

Karen Rosendahl
Director of the Paediatric Radiology Platform

Paediatric Radiology

Prof. Rosendahl, Director of the new Joint Initiative for Paediatric Radiology, explains the Initiative's first activities will draw on ongoing projects within the European Society of Paediatric Radiology's (ESPR) 7 working groups. Possible areas of activity could include: establishing a multicentre study on imaging in Juvenile Idiopathic Arthritis (JIA); re-reviewing and summarising the present state of neonatal ultrasound screening for developmental dysplasia of the hip (DDH) in Europe; or developing guidelines of good clinical practice in paediatric CT. The Initiative's overall goal will be to **"initiate, facilitate and enhance multi-institutional, multinational research in paediatric imaging, image-guided intervention and radiation protection, in particular prospective multi-institutional clinical trials with their origins in paediatric radiology."** In particular, smaller paediatric radiology institutions will be given the opportunity to participate in multi-centre research projects, and greater numbers of patients with rare diseases are expected to be generated for improved statistical reliability. It is also hoped that the Initiative will promote **"the sharing of institutional research projects amongst partners of the network, thereby creating synergies, expanding project participation and promoting research excellence in paediatric radiology in Europe".**

Vincenzo Valentini
Director of the Image Guided Radiotherapy Platform

Image Guided Radiotherapy

The Joint Initiative for Image Guided Radiotherapy will focus on the three aspects of theranostic imaging in radiation oncology, specifically: i) utilising imaging in diagnosis ii) optimising treatment according to the patients specific needs and situation and iii) valuation of the response. Prof. Valentini notes that **"because treatment modalities in radiotherapy are becoming so sophisticated, there is great need to jointly enhance research activities with specialists in the field of imaging, as well as engineering, to increase our understanding and improve the benefits for our patients".** The Initiative's impact at the European level will facilitate more focused research proposals when applying for funding opportunities, additionally drawing on the expertise that each discipline within the radiological family can provide to improve the research agenda. While development of the specific activities is in the planning stages, it is envisioned that the initial focus will be on developing prediction models (using imaging to support decision making) and capitalising on the technical opportunities within the field. Prof. Valentini also highlights the need to impact broader communication channels to reach media, decision makers and patients to **"position this radiological discipline so it receives the consideration it deserves".**

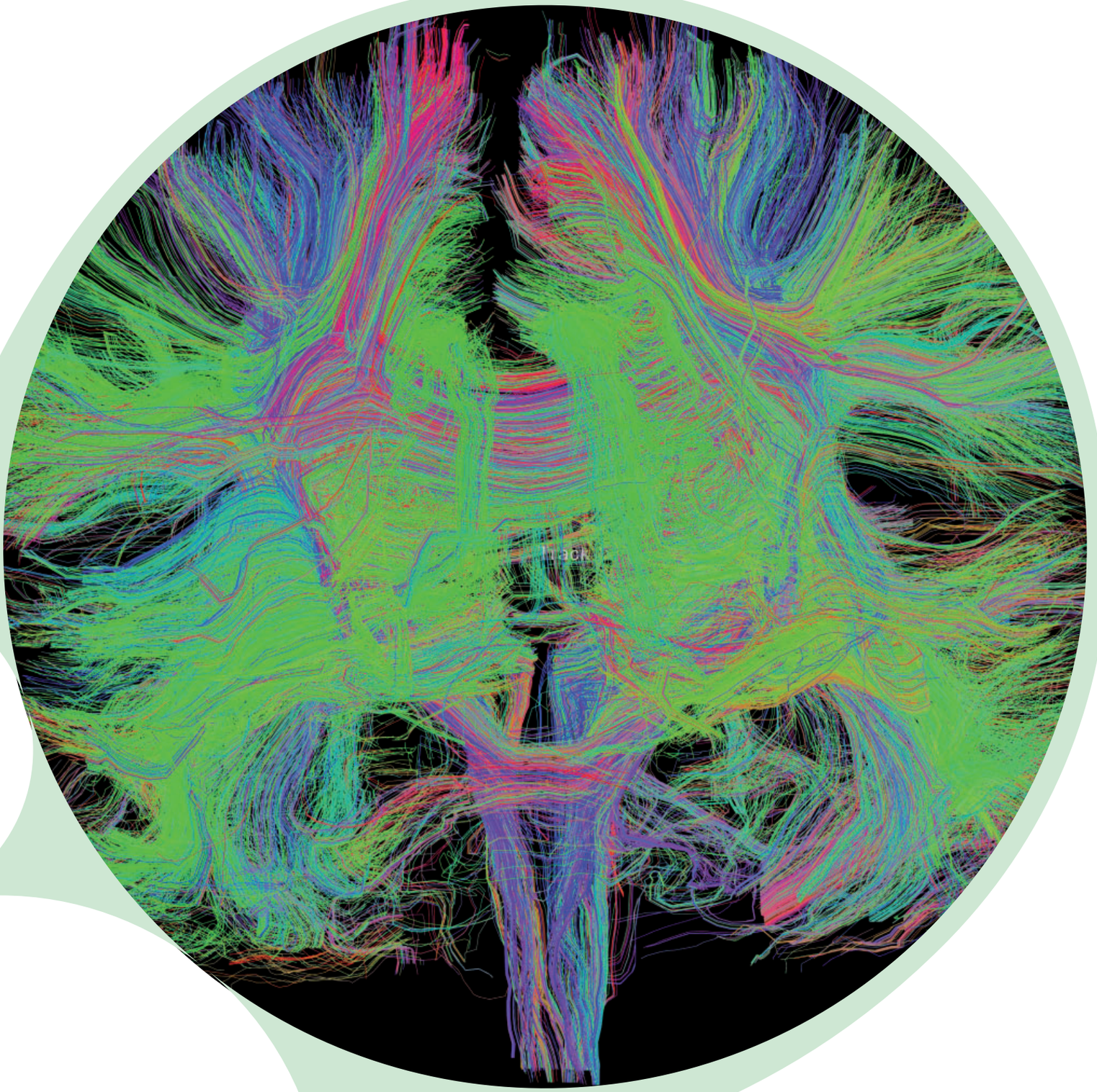


Image courtesy of Mark Bastin, Brain Research Imaging Centre, University of Edinburgh, UK

Horizon 2020

The future of European Union research funding

Horizon 2020 will run from 2014-2020 and integrates the European framework programme, the programme for the competitiveness of enterprises and SMEs (COSME) as well as the European Institute of Innovation and Technology (EIT).

The overall proposed budget will be €70 billion which will be divided between three distinct, yet mutually reinforcing, priorities:

- Excellent Science
- Industrial Leadership
- Societal Challenges

Of the total Horizon 2020 budget, €7.4 billion has been committed to fund "Health, demographic change and wellbeing" research which is one of the six challenges under the Societal Challenges priority.

Budget negotiations

This past June, following a series of failed negotiations that began in February, the 27 EU member states agreed upon on a budget of around €70.2 billion for the research programme. The budget is 13% less than the €80 billion which the European Commission had originally proposed and 30 % less than the €100 billion requested by parliament.

On November 21st the European Parliament adopted the Horizon 2020 legislative package, followed by the adoption of the Member States during the EU Competitive Council meeting held on December 3, 2013.

The European Commission welcomed the final adoption, which sets the framework for EU funding for research and innovation activities.

Emphasising the importance of Biomedical Imaging Research

EIBIR, in collaboration with the ESR have been very committed to raise awareness for the importance of adequate funding levels for scientific health research.

In October 2012, the ESR responded to an European Commission (EC) consultation on 'plans for a public-private partnership in life sciences research and innovation under Horizon 2020', outlining the importance of imaging in this regard, a position which has been recognised by the EC.

Two months later, in December 2012 the ESR issued a statement on Horizon 2020, outlining the ESR's view on the future of EU scientific research, which is in line with Horizon 2020's three main objectives: maintaining and promoting excellence in research, developing competitive industries and, most importantly, building a better society.

At the ECR 2013, EIBIR organised a session on Horizon 2020 inviting numerous stakeholders and high-level policy officers from the European Commission in order to discuss the challenges and needs of the Horizon 2020 framework programme.

EIBIR and the ESR are closely monitoring the next steps under Horizon 2020 in order to keep its members updated on the latest developments.

Changes from FP7

A number of structural, funding and control strategy updates will be included in the new research programme. The proposed updates are intended to reduce administrative burden and costs, speed up all processes and reduce the financial error rate. An example of some of the updates:

- for R&D projects the EU contribution can be up to 100% of the eligible costs, in cases of projects closer to the market up to 70% of the costs can be covered
- indirect costs will be covered by a flat rate of 25% of the direct costs
- grants and amendments will be accepted with electronic signatures
- a reduction in the number of certificates on the financial statements required
- a single set of participation rules applying across the entire scope of Horizon 2020
- reducing the time between submission of a proposal and signature of the grant agreement to 8 months.

In addition, a number of dedicated instruments will be implemented to ensure that SMEs make up 20% participation in the programme.

First call

Information on the draft Work Programme was made available to EIBIR members as early as September, including the date of the first call which was opened on 11 December 2013. A number of calls were of interest to the Biomedical Imaging community, and the first deadline for submission is early March 2014 for stage one of two stage calls.

EIBIR Support

EIBIR's expert team is able to support preparation of your Horizon 2020 project proposal from start to finish: helping you to find the right partners, facilitating proposal writing and budget completion, submission to the European Commission and project negotiation upon successful evaluation.

Proposal preparation services are provided as part of our service package to all EIBIR active network members. Organisations not part of the EIBIR network are also able to take advantage of our proposal preparation services. For details please visit the EIBIR website (www.eibir.org).

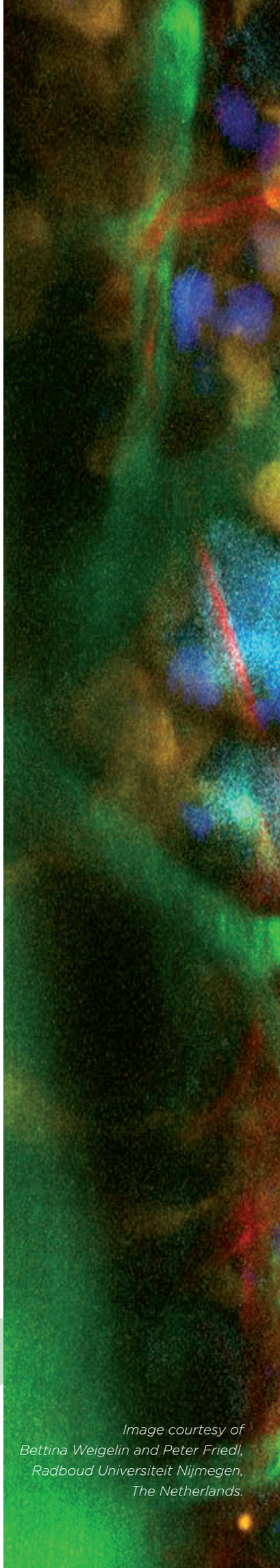


Image courtesy of Bettina Weigelin and Peter Friedl, Radboud Universiteit Nijmegen, The Netherlands.

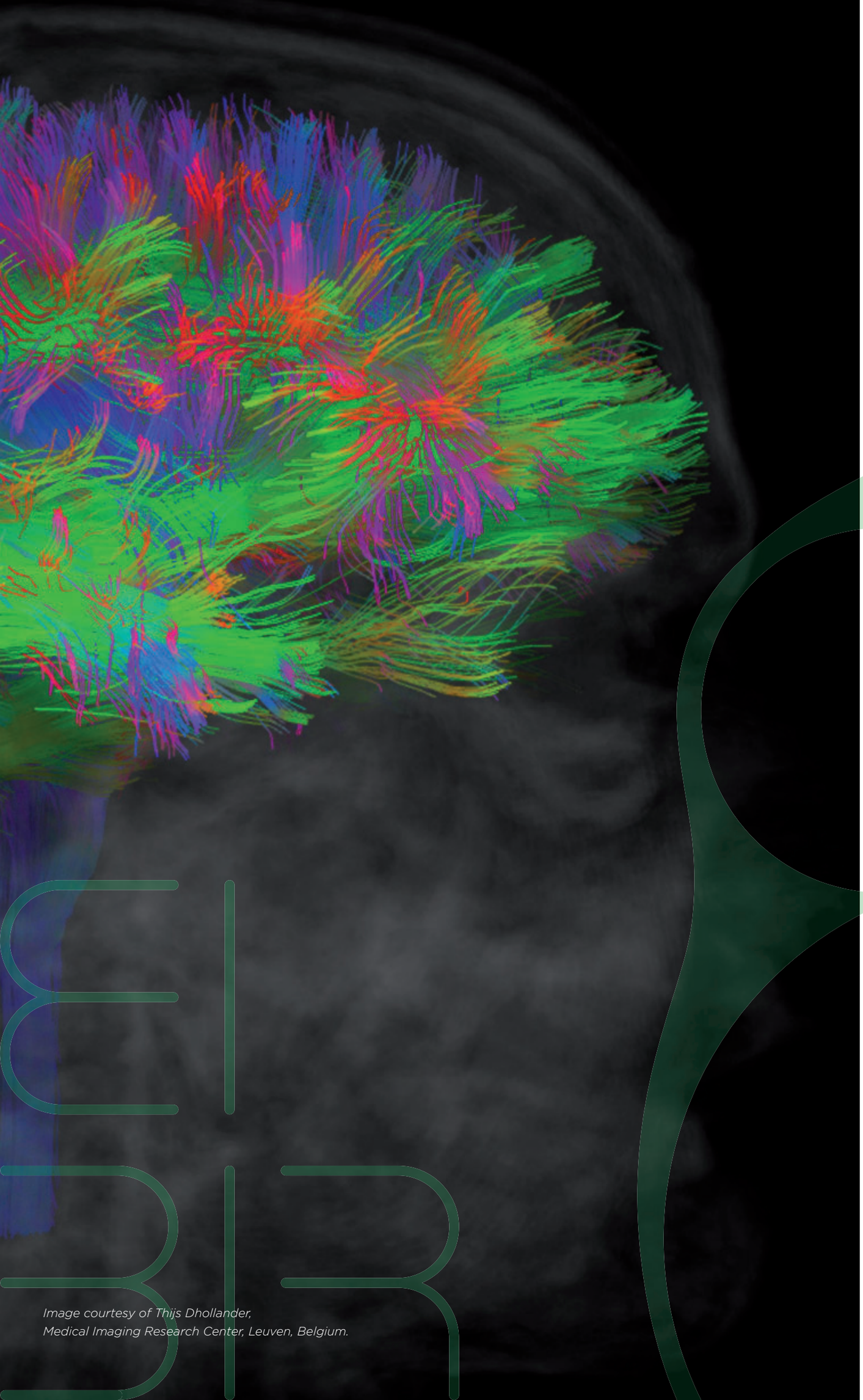


Image courtesy of Thijs Dhollander,
Medical Imaging Research Center, Leuven, Belgium.

EIBIR Member Services

EIBIR: A service organisation for scientists run by scientists.

EIBIR's aim is to coordinate and support the development of biomedical imaging technologies and the dissemination of knowledge with the ultimate goal of improving the diagnosis, treatment and prevention of disease.

The platform supports research networking activities and plays a key role in spreading good practice, promoting common initiatives and interoperability in the field of biomedical imaging research.

EIBIR has aligned its core research-related services to help its members achieve successful results. EIBIR's expert team is able to offer their professional guidance and support in a wide variety of areas, from first stage proposal preparation to project and financial management.

EIBIR offers its members a wide variety of services:

Project Related Services:

- Proposal Preparation
- Contract Negotiation
- EC Reporting
- Financial Management
- Communication and Dissemination

Member Servcies

- Meeting Organisation
- Members' Database
- Events Calendar
- Career Forum

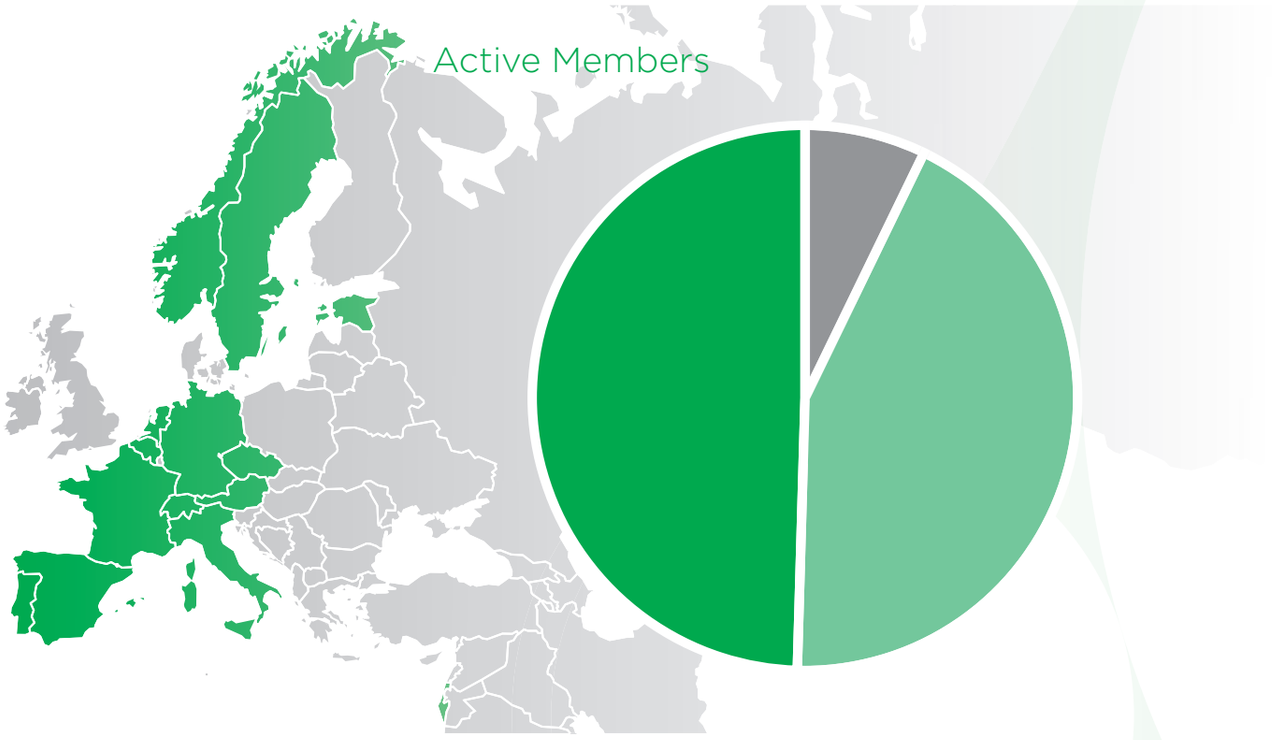
Organisations with an interest in biomedical imaging can become a part of the EIBIR network through one of three categories of EIBIR membership. Active, regular and associate memberships each offer a range of services according to the varying financial commitment.

EIBIR Network Members

Open to all disciplines with an interest in biomedical imaging, the EIBIR Network has established itself as a vital link for the participating organisations.

The 114 Network Members represent a variety of different imaging focuses and more than 20 countries within Europe. Members are classified as active, regular and associate, depending on the level of EIBIR service required and the type of membership package enrolled in.

The Network is built upon the strength of its members and EIBIR would like to thank all those organisations and individuals who have recognised the importance of becoming involved.



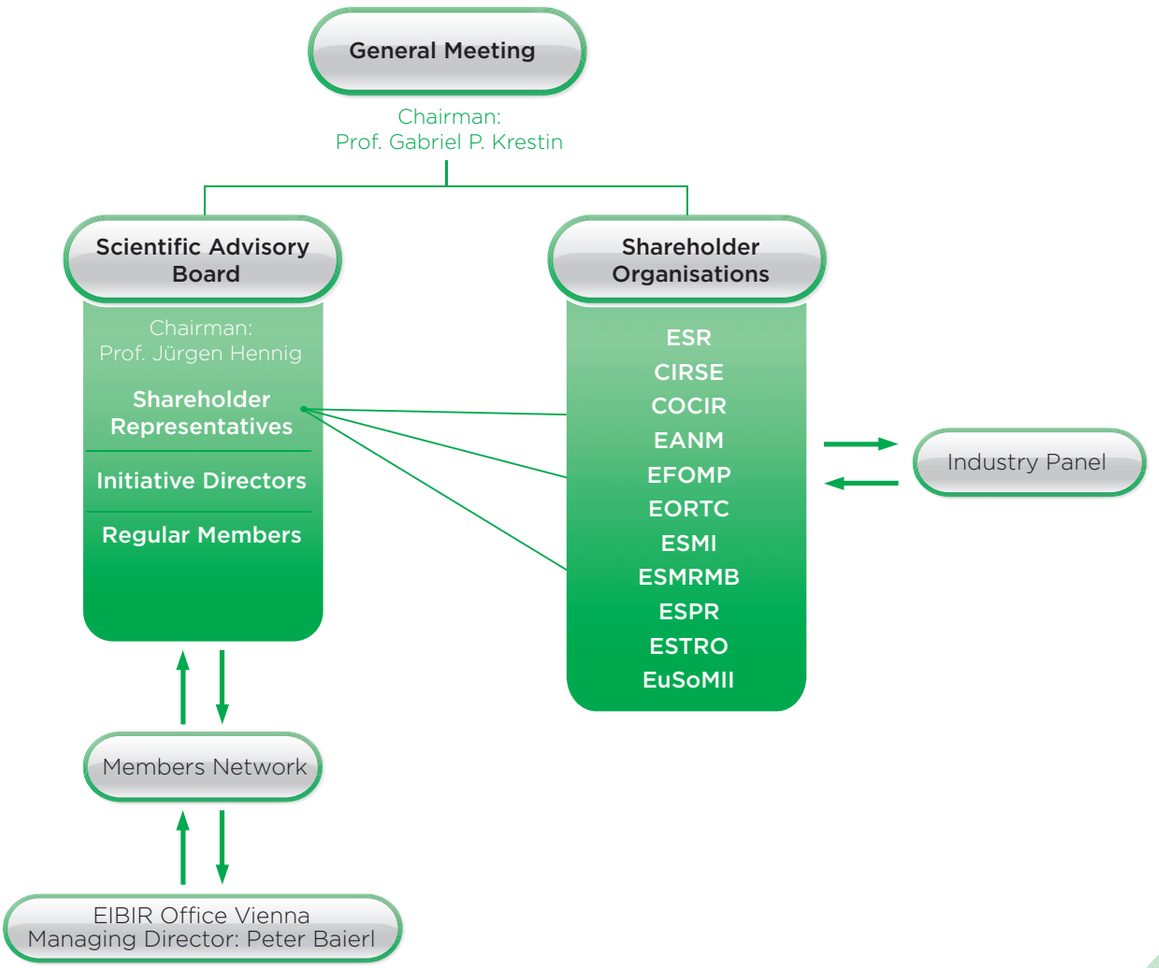
EIBIR Network Members as per December 21, 2013

Category of service package	including related departments
Active Service Package	58
Regular Service Package	48
Associate Service Package	8
TOTAL	**114**

EIBIR Decision Making and Guidance

Combining the expertise of the Scientific Advisory Board, advice from the multi-disciplinary shareholder groups, input from the European Society of Radiology Research Committee and recommendations from the Industry Panel, EIBIR benefits from the guidance and support of a multi-faceted organisational structure that ensures EIBIR and biomedical imaging are at the forefront of research activities in Europe.

Organisational chart 2013



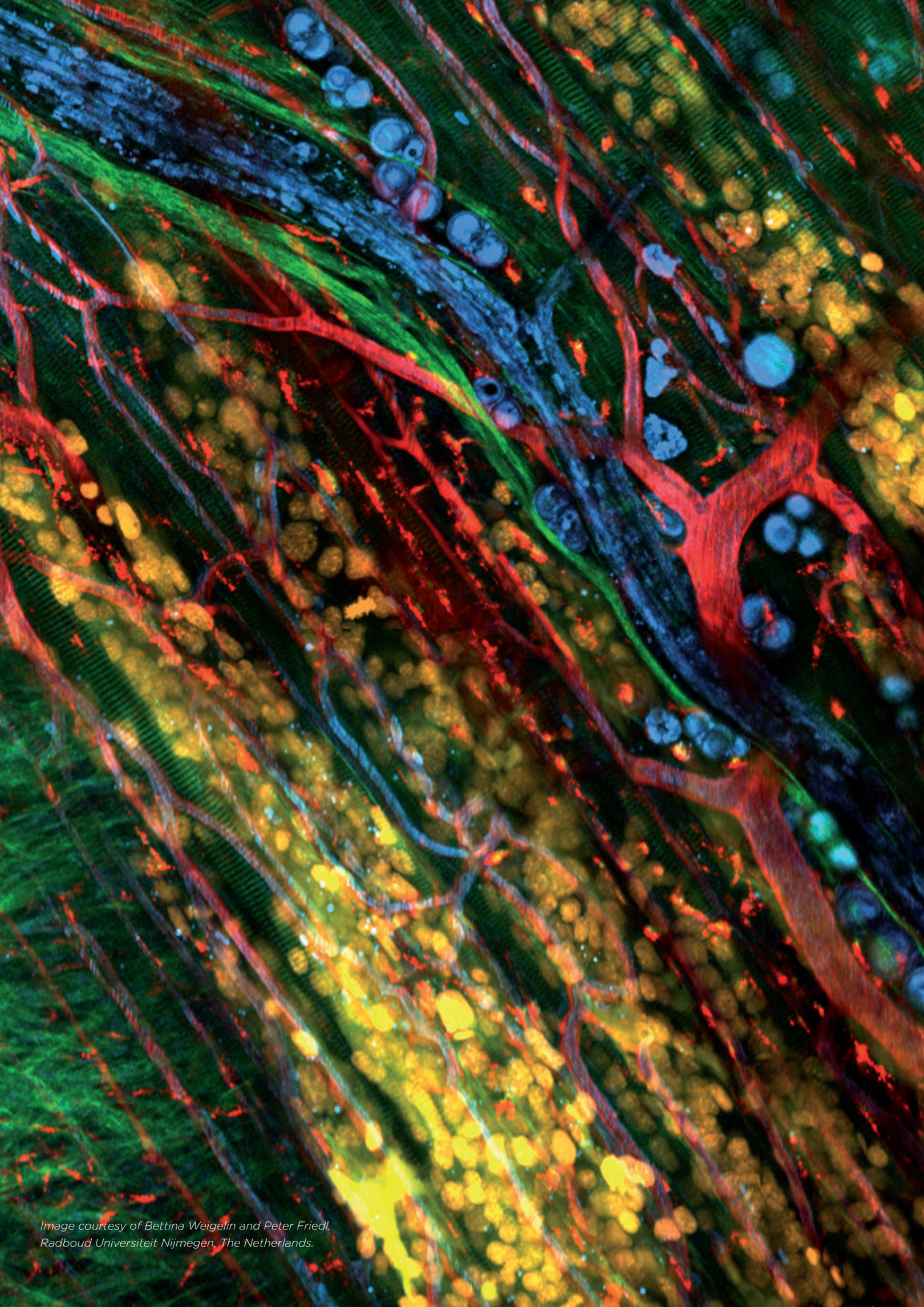


Image courtesy of Bettina Weigelin and Peter Friedl, Radboud Universiteit Nijmegen, The Netherlands.

Scientific Advisory Board

At the heart of EIBIR, the Scientific Advisory Board, led by Jürgen Hennig, guides the long-term scientific strategies of the organisation, decides on the implementation of specific activities and provides advice to members about their research ideas.

Prof. Jürgen Hennig
Scientific Director of EIBIR

Shareholder representatives

» Gabriel Krestin (ESR)
» Philippe Pereira (CIRSE)
» Casper Garos (COCIR)
» Fred Verzijlbergen (EANM)
» Hilde Bosmans (EFOMP)
» Yan Liu (EORTC)
» Fabian Kiessling (ESMI)
» Elna-Marie Larsson (ESMRMB)
» Karen Rosendahl (ESPR)
» Vincenzo Valentini (ESTRO)
» Wiro Niessen (EuSoMII)

Initiative Directors

» Michal Neeman (Cell Imaging Network)
» Nandita deSouza (Cancer Imaging Group)
» Wiro Niessen (Biomedical Image Analysis Platform)
» Francesco Sardanelli (EuroAIM)
» Silvio Aime (Chemistry Platform)
» Oliver Speck (Euro-BioImaging)

Regular members

» Milan Hajek, CZ
» Konstantin Nikolaou, DE
» Andrea Soricelli, IT
» Siegfried Trattnig, AT
» Bernhard van Beers, FR

Shareholders

EIBIR's shareholder organisations exemplify the importance of a multi-disciplinary approach in biomedical imaging research. EIBIR is pleased to introduce the European Society for Molecular Imaging (ESMI) as its newest shareholder, contributing to the diversity and expertise of EIBIR's decision making bodies.

ESMI – European Society for Molecular Imaging

ESMI (European Society for Molecular Imaging) advances the development and practical application of Molecular Imaging throughout, but not limited to, Europe.

ESMI provides an interdisciplinary platform for knowledge exchange in the field of Molecular Imaging and for the development of innovative imaging technologies.

www.e-smi.eu

MISSION

To develop and validate
imaging technologies
and multimodality imaging
biomarkers in the life sciences and
the use of innovative imaging methods
to support basic and clinical research.

We look forward to the expertise this organisation will bring to EIBIR, complementing our current Shareholder organisations.

ESR
European Society of Radiology
www.myesr.org

CIRSE
Cardiovascular and Interventional Radiological Society of Europe
www.cirse.org

COCIR
European Coordination Committee of the Radiological, Electromedical and Healthcare IT Industry
www.cocir.org

EANM
European Association of Nuclear Medicine
www.eanm.org

EFOMP
European Federation of Organisations in Medical Physics
www.efomp.org

EORTC
European Organisation for Research and Treatment of Cancer
www.eortc.be

ESMRMB
European Society for Magnetic Resonance in Medicine and Biology
www.esmrmb.org

ESPR
European Society of Paediatric Radiology
www.espr.org

ESTRO
European Society for Radiotherapy and Oncology
www.estro.org

EuSoMII
European Society of Medical Imaging Informatics
www.eusomii.org

Industry Panel

The Industry Panel is an important opportunity for EIBIR and its member industry organisations to identify shared interests and opportunities for collaboration. Exemplified by the MIPA project (p. 16), the roadmap created during the Industry Workshop (p. 8) will pave the way for continued interaction.

An important update was made to the EIBIR Industry Packages this year, as SMEs can now take advantage of a package specifically designed to meet their needs. EIBIR is pleased to provide SMEs, among other services, with the opportunity to be represented on the Industry Panel, as well as eligibility to participate in research projects coordinated by EIBIR, while recognising the often limited financial resources. The cost for membership packages range from €10 000 for Gold, €5 000 for Silver and €1 000 for SMEs.

EIBIR thanks the Industry Partners for their commitment and looks forward to enhanced cooperation in the coming years.

GOLD partners

Bayer HealthCare

BRACCO
LIFE FROM INSIDE

GE Healthcare

SIEMENS

PHILIPS

SILVER partners

BARCO

HITACHI
Inspire the Next

GE Healthcare

GE Healthcare, one of the largest companies in the healthcare industry, unifies a comprehensive set of solutions, combining expertise in imaging, diagnostics, information technologies with in-house capabilities in engineering, chemistry and molecular biology, to help manage the entire continuum of diseases from genomics to advanced diagnostics and information management.

Such a dynamic and wide innovative sector as healthcare requires collaborations for industry with external research resources to complement internal expertise. Research collaborations between academic researchers and industry are essential in helping to understand unmet clinical needs and in developing appropriate technology to address those needs, ultimately resulting in better patient care.

By collaborating with academic researchers, GE Healthcare strives to develop solutions that improve quality, reduce cost, and increase access to patient care. GE Healthcare recognises that these collaborations provide value to patients and society; and it appreciates that many investigators take immense pride in inventing and exploring new technology and applications.

There are several different types of research where academic and industry can collaborate, including Bench Research, Pre-Clinical Research and Clinical Studies. GE Healthcare sees opportunities of academic-industry collaboration in all these types of research and works with more than 500 research collaborators globally.

SIEMENS

Modern medicine is inconceivable without the innovative imaging technologies that help provide early and detailed diagnoses and confirm or refute the presence of suspected disease. Used increasingly in therapy, advanced imaging systems can also help cut healthcare costs. At the same time, they're opening up new forms of treatment – making it possible, for example, to replace open surgical procedures with minimally invasive interventions, to directly control surgical outcomes while operations are still in progress and to provide new forms of therapy that can contribute to gentler and more effective treatment for cancer patients. In all these areas, medical imaging and advanced visualisation software solutions are supporting medical professionals in both diagnosis and therapy.

The Siemens Healthcare Sector is one of the world's largest suppliers to the healthcare industry and a trendsetter in medical imaging and advanced visualisation software. Siemens offers its customers products and solutions for the entire range of patient care from a single source, from prevention and early detection to diagnosis, and on to treatment and aftercare. By optimising clinical workflows for the most common diseases, Siemens also makes healthcare faster, better and more cost-effective. Siemens Healthcare believes in collaborative research, a dedication proven by over 1,100 successful clinical collaborations within this field, operating around the world.

For further information please visit: http://www.siemens.com/healthcare

Images courtesy of Lotfi Senhadji, University of Rennes, France.

EIBIR Financial Report

EIBIR's activities are financed by a number of sources, including Network Member service fees, Industry Panel service package fees, support from the European Society of Radiology (ESR) and EC funding for European research projects coordinated by EIBIR.

The ESR also continues to provide significant financial support to EIBIR, ensuring the maintenance of office infrastructure, allowing for the set-up of new initiatives and supporting the application and grant-writing processes for new projects. The amount of support provided by the ESR is determined every year according to need and, in recent years, has been around €150 000.

A detailed annual financial report is presented to and approved by the shareholder organisations at the annual General Meeting, usually held on the occasion of the European Congress of Radiology in Vienna.

At the most recent General Meeting at the ECR 2013 in Vienna, the attending shareholders endorsed a proposal to demonstrate their commitment to EIBIR through an annual financial contribution. The amount of the contribution is to be scaled according to the size of the organisation. EIBIR would like to thank its shareholders for their support and their role in ensuring a sustainable future for the organisation.

Events in 2014

EUROPEAN INSTITUTE
FOR BIOMEDICAL
IMAGING RESEARCH

Biomedical Image Analysis Session at ECR 2014

Novel tools in neurodegenerative disease and breast cancer

Date: March 6, 2014, 16:00 – 17:30
Venue: ECR 2014, Austria Center Vienna/AT, Room P

The session, moderated by Prof. Wiro Niessen, will give insight into two new projects: VPH-PRISM, dealing with personalised predictive breast cancer therapy through integrated tissue micro-structure modelling; and VPH-Dare@It, which will utilise a systematic, multifactorial and multi-scale modelling approach to understanding dementia onset and progression. Additionally, participants in this session will be provided with an overview about biomedical imaging related research oppportunties available in the Horizon 2020 funding programme.

www.eibir.org

www.vph-prism.eu

www.vph-dare.eu

MITIGATE Session

Molecular imaging and targeted-image guided therapy in gastrointestinal stromal tumors

Date: March 8, 2014, 14:00 – 15:30
Venue: ECR 2014, Austria Center Vienna/AT, Room P

The session, moderated by Prof. Silvio Aime and Prof. Stefan Schönberg, will provide a general introduction to the MITIGATE concept, and will take a specific look at functional and molecular imaging and targeted endoradiotherapy, stereotactic radiofrequency ablation of liver tumors and tumor therapy response assessment. The overall objective of the MITIGATE project is to develop and validate an integrated closed-loop process to effectively treat metastatic GIST patients resistant to the currently available class of medication, the tyrosine kinase inhibitor.

www.eibir.org

www.mitigate-project.eu

ENCITE Session

ENCITE based insights for molecular imaging in guidance of therapy

Date: March 9, 2014, 16:00 – 17:30
Venue: ECR 2014, Austria Center Vienna/AT, Room P

ENCITE – European Network for Cell Imaging and Tracking Expertise.

Recently, extensive development has been taking place in the field of optical imaging, and non-invasive imaging of therapeutic cells has become a popular field of research. This session, moderated by Prof. Michal Neeman, will expand on the results achieved in the FP7 funded ENCITE project. Among other topics, the speakers will give insight into MR imaging for pancreatic cells transplantation and provide insight into optical imaging in the clinic.

www.eibir.org

www.encite.org

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