Many of the world's largest research facilities unite Big Science with big business in Copenhagen

Representatives from some of the world's largest high-tech research facilities are gathering for the first time for a joint conference. They will offer insights into procurement opportunities and orders worth more than EUR 12 billion for companies.

When the European Space Agency sends astronauts into space, or when ITER tries to recreate the energy source powering the sun and the stars, and thus tap into fusion energy, extensive purchases are required, from the smallest screw to high-tech consultancy. And often with a requirement of extremely high quality and innovation.

This high-tech branch is known as Big Science and for the first time, nine of the world's largest research facilities have gathered together to create Big Science Business Forum to present their offers to European industry. These span advisory engineering work and architectural tasks, to advanced technical equipment, concrete building projects and radiation-resistant materials, and the orders are worth many billions of euros.

The conference takes place in Tivoli Congress Center in Copenhagen during 26-28 February, hosted by the Danish Ministry of Higher Education and Science and BigScience.dk. A 1000 delegates from more than 500 companies and organisations spanning approx. 30 countries have already registered.

> "The most advanced research is constantly expanding the boundaries of our knowledge and imagination. Research can cure illnesses previously thought incurable, it can change the way we communicate with each other, and there is a good chance that it will help solve the world's energy needs. Much of the most advanced research takes place at Big Science facilities, and their need for high-tech solutions provides great innovation and growth opportunities for private companies. I look forward to welcoming some of the world's leading research institutions and innovative companies", says Minister for Higher Education and Science Søren Pind.

Big Science Business Forum 2018 will be the first one-stop-shop for companies from all over Europe, where they can gain insight into Big Science organisations' future investments and purchases in just one location over the course of a few days.

The conference is arranged by the organisations CERN, EMBL, ESA, ESO, ESRF, ESS, European XFEL, F4E and ILL. A further nine Big Science organisations have joined the conference programme – ALBA, DESY, ELI-NP, ENEA, FAIR, MAX IV, SCK•CEN – MYRRHA, PSI and SKA – thereby gathering 18 of the world's most advanced Big Science organisations under one roof.

In the open exhibition space, participants can meet more than 200 companies and organisations and in 19 conference sessions, they can meet leaders and experts from the Big Science organisations. 700 1-to-1 business meetings have already been arranged between delegates and the exclusive guided tours of the European Spallation Source and MAX IV in Lund have been sold out, thus sending 250 people across the border to Sweden.

The key speakers opening the conference are high-level representatives from the nine organising Big Science organisations, together with the EU Commissioner for Research, Science and Innovation Carlos Moedas and the Danish Minister for Higher Education and Science Søren Pind.

Read more about the participating Big Science organisations and the conference on www.bsbf2018.org

Big Science Business Forum 2018

Press material for Big Science Business Forum 2018

In the following documents you will find relevant information about BSBF2018.

Press can contact Morten Mechlenborg Nørulf on +45 72 31 80 94 / momn@ufm.dk

Content of the press material:

1. The story behind BSBF2018
2. BSBF2018 in numbers
3. Programme for exclusive press tour to ESS
4. 'Why we are here' – testimonials from Big Science organisations
5. More information about Big Science and research infrastructures
6. Organisational profile of participating Big Science organisations
7. CVs of high-level speakers

Big Science Business Forum 2018
Time: 26 February – 1 March 2018
Place: Tivoli Congress Center, Copenhagen
Contact: bsbf2018@ufm.dk
Website: www.bsbf2018.org

Twitter: @bsbf2018
Facebook: facebook.com/BSBF2018
Facebook event: www.facebook.com/events/279530395876685/
LinkedIn group: www.linkedin.com/groups/13546096

Please use **#BSBF2018** and **#bigscience** if you are posting and tweeting on social media

Organisers: CERN, EMBL, ESA, ESO, ESRF, ESS, European XFEL, F4E and ILL
Host organisations: Danish Ministry of Higher Education and Science and BigScience.dk

Gold sponsors: Okazaki Manufacturing Company and Deutsche Telekom
Bronze sponsors: Edwards Ltd. and LAB Motion Systems
Supported by: The Capital Region of Denmark and Innovation Fund Denmark

Big Science Business Forum 2018

The story behind…

Big Science Business Forum 2018: Europe's new one-stop-shop on the Big Science market

Nine of Europe's largest Big Science organisations – CERN, EMBL, ESA, ESO, ESRF, ESS, European XFEL, F4E, and ILL – have come together to create Big Science Business Forum 2018 (BSBF2018). They want to contribute to a stronger, more transparent and consolidated Big Science market in Europe for the benefit of both Big Science and businesses. BSBF2018 will be Europe's new one-stop-shop on the Big Science market as businesses will be presented with business opportunities worth more than 12 billion euros from the Big Science organisations.

Building a Big Science market

Big Science organisations constitute an imperative role for the advancement of knowledge and for cutting edge research and scientific excellence in fields such as energy, biology, physics, and material science. As governments all over the world are investing significantly in Big Science organisations, more businesses are also becoming aware that Big Science organisations present significant new market opportunities.

Big Science organisations rely on industrial suppliers for the construction, maintenance, operation and upgrading of their facilities. This is typically exercised via public procurements and purchasing, and involves scientific and high-tech technologies and products but also more conventional deliverables. It is within this framework that Big Science turns into big business and the so-called Big Science market emerges.

However, the Big Science market is currently not perceived as a stable market. It is fragmented by the Big Science organisations' different and often time consuming procurement procedures and quality standards, which create market entry challenges for businesses and suppliers. The consequence is that many companies, especially small- and medium-sized enterprises (SMEs), who would otherwise be good business partners for the Big Science organisations, often find the market too difficult to penetrate. This reduces competition and increases prices.

In order to address these challenges, nine of Europe's largest Big Science organisations created BSBF2018. BSBF2018 will address the challenges of the market, allow existing and potential new suppliers to meet. And more importantly, the Big Science organisations will present their investments in the years to come.

BSBF2018 will be a first step towards establishing a more transparent and efficient Big Science market in Europe and will also be an important contribution to the sustainability of Big Science.

Big Science Business Forum 2018

Unique opportunities for the industry: More than 12 billion euros in investments for the next five years

An additional nine Big Science organisations have been selected as Affiliated Big Science organisations (ALBA, DESY, ELI-NP, ENEA, FAIR, MAX IV, SCK•CEN–MYRRHA, PSI and SKA), which will increase the investment number presented at BSBF2018 significantly. In total, the 18 Big Science organisations present at BSBF2018 will invest just over 12 billion euros in the next five years. This will require new suppliers and is an invitation for new businesses to become part of the Big Science market.

It is the first time that 18 the world's largest Big Science organisations unites under one roof to meet the industry and to present their future investment and procurement plans. The Big Science organisations' investments in the next five years are spread across a number of business areas such as remote handling systems, cryogenic technology or diagnostics, detectors and instruments – just to mention a few.

At BSBF2018, these business areas are addressed in the conference's parallel sessions and in each session the Big Science organisations will present planned investments in the years to come. This is a unique opportunity for businesses to examine if and how they can supply products or services to a Big Science organisation within their preferred business area.

Experience from the market shows that an existing relationship with one Big Science organisation makes a strong reference point for other Big Science organisations as well as other high-tech industries: while the entry barriers of the Big Science market might be high, once a business has landed an order, it serves as a high-quality stamp of approval, thus making it easier for the business to pursue new orders.

The programme at BSBF2018

The nine Big Science organisations behind BSBF2018 have tailored an extensive programme that covers a wide range of topics and areas on the Big Science market. Besides the conference's parallel sessions equalling identified business areas on the Big Science market, as well as overall themes such as procurement rules, IPR and technology transfer, the conference's 1-1 meetings are designed to strengthen the ties between Big Science and business representatives (B2C) and between businesses – including prime contractors and sub-suppliers (B2B). In the time leading up to the conference, delegates have requested 1-1 business meetings with each other with more than 550 confirmed in the week leading up to the conference. The 1-1 meetings are designed to help establish long-lasting partnerships on the Big Science market.

The conference's keynotes are given by prominent high-level representatives from each of the nine Big Science organisations, followed by keynotes by Carlos Moedas, EU's Commissioner of Research, Science and Innovation and Søren Pind, Danish Minister of Higher Education and Science. The conference also include a plenary session, in which delegates will get to know the best practices on the

Big Science market when prime contractors, SMEs and Industry Liaison Officers all give their views on the market in a roundtable discussion.

Lastly, BSBF2018 will resemble the Big Science marketplace by its exhibition area where businesses from many industries will showcase their products and services. 71 exhibition spaces are filled by businesses, Industry Liaison Officers as well as the nine organising Big Science organisations. Just over 200 businesses and organisations are represented in the open exhibition area.

Big Science Business Forum 2018

BSBF2018 IN NUMBERS

1000 PARTICIPANTS

700 BUSINESS MEETINGS

500 BUSINESSES AND ORGANISATIONS

250 PEOPLE FOR SITE VISITS TO ESS AND MAX IV

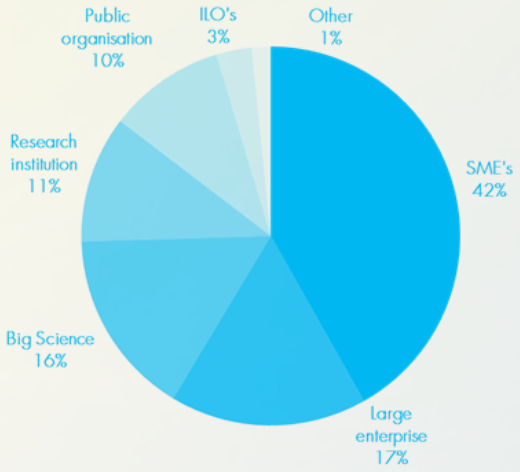
200 EXHIBITORS

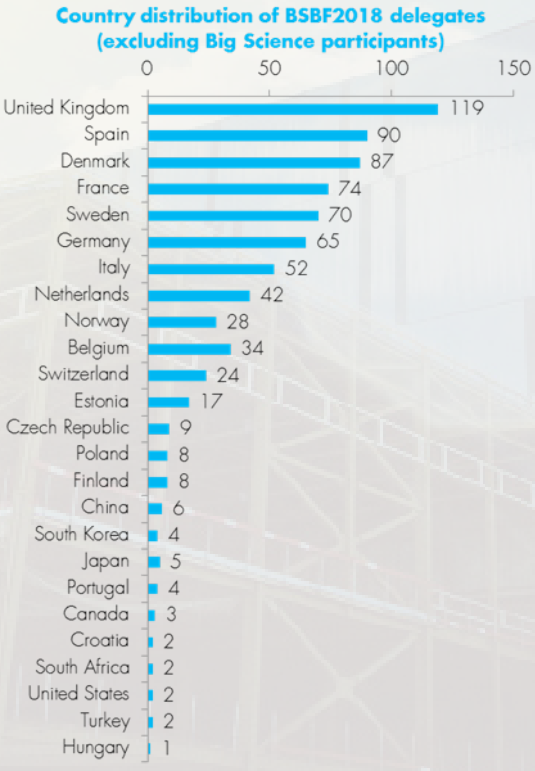
120+ SPEAKERS AND PRESENTATIONS

29 COUNTRIES

12 BILLION EUR IN INVESTEMENT

#BSBF2018





9 BIG SCIENCE ORGANISATIONS

CERN, EMBL, esa, ESO, ESRF, ESS European Spallation Source, European XFEL, Fusion for Energy, Neutrons for Society

9 AFFILIATED BIG SCIENCE ORGANISATIONS

ALBA, DESY, eli nuclear physics, ENEA, FAIR, MAX IV, Paul Scherrer Institut PSI, MYRRHA, SKA

Big Science Business Forum 2018

Exclusive press tour to European Spallation Source (ESS) in Lund, Sweden

Programme

BSBF2018 invites interested journalists on an exclusive press tour to ESS in Lund, Sweden, on 26 February 2018 from 13.30-17.30/17:45. The seats are limited and are allocated on a first come, first served basis. Registration: Morten Mechlenborg Nørulf, momn@ufm.dk.

ESS is a partnership of European nations committed to collectively building and operating a multi-disciplinary research facility based on the world's most powerful neutron source. The facility is under construction in Lund, while the ESS Data Management and Software Centre (DMSC) is located in Copenhagen. ESS is one of the nine Big Science organisations behind BSBF2018.

Programme for the press tour to ESS

13:30 Bus departure from the BSBF2018 conference venue, Tivoli Congress Center, Copenhagen
14:25 Arrival ESS construction site, Lund, Sweden
14:30 Welcome to ESS
14:35 ESS General Overview + Q&A, John Womersley, ESS Director General
15:00 ESS Science + Q&A, Marie-Louise Ainalem, ESS Host State Relations
15:25 Safety induction + safety gear on
15:45 2 x guided site tours
16:15 Safety gear off
16:30 Bus back to Copenhagen

Att.:

- Only long trousers allowed on ESS construction site
- Organisers cannot be made responsible for delays
- Remember passport or EU ID card for the Danish/Swedish border
- A sandwich and water will be provided on the bus

All journalists are invited to attend the BSBF2018 welcome reception after returning from Sweden. The programme for the night is:

19:00 Welcome Drinks at conference venue, Tivoli Congress Center
19:15 Welcome address by Danish Minister for Higher Education and Science, Søren Pind
19:20 BSBF2018 Exhibition is open – food and drinks served
21.00 Good night and see you tomorrow

Big Science Business Forum 2018

'Why we are here' – testimonials from Big Science organisations

"BSBF2018 presents a unique opportunity to reach out to new as well as established suppliers. We have high expectations and hope to meet many new companies interested in delivering services and material to CERN."

Anders Unnervik, Head of Procurement and Industrial Services Group, CERN

"At BSBF2018, we look forward to joining other international research organisations to exchange best practices in industry relations and engage with suppliers."

Christian Scherf, Administrative Director, EMBL

Contributing to a stronger and more transparent market for Big Science organisations is a priority for the European Space Agency. We are very happy that, for the first time, BSBF2018 brings together the main European organisations to present and discuss important topics related to the Big Science market."

Jan Wörner, Director General, ESA

"We have a number of planned procurement in the coming years, which we are very excited to present in details. The chance to engage in dialogue directly with companies about this is a big added value for us."

Arnout Tromp, Head of Contracts and Procurement, ESO

"ESRF will give a number of presentations about the EBS innovative project at BSBF2018. We hope to be able to meet companies and suppliers that specialise in these specific areas."

Ingrid Milanese, Head of Procurement and Contracts Service, ESRF

"We are at a very exciting point of the project. The construction and installation of ESS are well under way and moving quickly. We look forward to engaging with our existing and potential commercial suppliers at the BSBF."

Meredith Shirey, Head of Supply, Procurement & Logistics Division, ESS

"Our specialist will present our opportunities of collaboration, giving the chance to individuate competences among the participating industries to achieve our state-of-art requirements of cutting-edge components".

Antonio Bonucci, Supply Chain Manager IKC, European XFEL

"Fusion for Energy offers the possibility to companies and R&D organisations to be part of ITER – the biggest scientific collaboration in the field of energy. Through their participation, they will make considerable advances in the fields they operate, they will work with suppliers outside Europe and will tap into new business markets."

Leonardo Biagioni, Head of Contracts and Procurement, F4E

"We are very excited to be part of BSBF2018. This is an excellent opportunity to meet potential partners, discuss the intricate challenges of the Big Science market, and develop our network of trusted industrial collaborators."

Philippe Guerin, Head of Purchasing, ILL

Big Science Business Forum 2018

More information about Big Science and research infrastructures

Big Science:

Big Science: What's It Worth?
See publication (PDF). Published by Science|Business Publishing Ltd, 2015

Innovation from Big Science: Enhancing Big Science Impact Agenda
See publication (PDF). Department for Business, Innovation and Skills, UK Government, 2014

Big Science and Innovation
See report (PDF). Published by Technopolis, 2013

The role and added value of large-scale research facilities
See report (PDF). Published by Technopolis, 2011

Best practices for the interactions between Big Science organisations and industrial suppliers
See report (PDF). Published by Bigscience.dk, 2017

Research infrastructures:

Sustainable European Research Infrastructures
See publication (PDF). Published by European Commission, 2017

Long-Term Sustainability of Research Infrastructures
See publication (PDF). Published by European Strategy Forum for Research Infrastructures, 2017

Strenghtening the Effectiveness and Sustainability of International Research Infrastructures
See publication (PDF).Published by OECD, 2017

Large Research Infrastructures
See publication (PDF). Published by OECD, 2008

Innovation-oriented cooperation of Research Infrastructures
See publication (PDF). Published by European Strategy Forum for Research Infrastructures, 2018

THE BSBF2018 BIG SCIENCE ORGANISATIONS

CERN – THE EUROPEAN ORGANIZATION FOR NUCLEAR RESEARCH

CERN is one of the world's leading laboratories for particle physics. At CERN, physicists and engineers are probing the fundamental structure of the universe. They use the world's largest and most complex scientific instruments to study the fundamental particles and laws of nature.

CERN belongs to a globally coordinated particle physics community, providing a unique range of particle accelerator facilities that enable research at the forefront of human knowledge. But CERN is the only laboratory that has over 60 years' experience in delivering cutting-edge particle accelerators, including the world's highest energy particle collider – the Large Hadron Collider (LHC) – and beam facilities from the lowest to the highest energies available. CERN plan to invest 2,155 million EUR the next five years in various areas.

EMBL – EUROPEAN MOLECULAR BIOLOGY LABORATORY

EMBL is an intergovernmental organisation established in 1974 and performs fundamental research in molecular biology, studying the story of life. It offers services to the scientific community, trains the next generation of scientists and strives to integrate the life sciences across Europe. EMBL is international, innovative and interdisciplinary, with more than 1600 people operating across six sites in Barcelona, Grenoble, Hamburg, Heidelberg, Hinxton and Rome. The scientists work in independent groups, conduct research and offer services in all areas of molecular biology.

The research at EMBL drives the development of new technology and methods in the life sciences, and EMBL works to transfer this knowledge for the benefit of society. One of EMBL's key investments over the next five years will be 65 million EUR on large-scale data storage, compute power and technology devices.

ESA – EUROPEAN SPACE AGENCY

ESA is Europe's gateway to space. Its mission is to shape the development of Europe's space capability and ensure that investment in space continues to deliver benefits to the citizens of Europe and the world. ESA's job is to draw up the European space programme and carry it through. ESA's programmes are designed to find out more about Earth, its immediate space environment, our Solar System and the Universe, as well as to develop satellite-based technologies and services, and to promote European industries. ESA also works closely with space organisations outside Europe.

ESA annual budget amounts to around 5.5 Billion EUR of which more than 700 million EUR is dedicated to R&D and technology development. ESA is a big international organisation with 22 Member States. By coordinating the financial and intellectual resources of its members, it can undertake programmes and activities far beyond the scope of any single European country. ESA expects to invest 3,500 million EUR in technology related programme in the coming five years.

ESO – EUROPEAN SOUTHERN OBSERVATORY

ESO is the pre-eminent intergovernmental science and technology organisation in astronomy. It carries out an ambitious programme focused on the design, construction and operation of powerful ground-based observing facilities for astronomy to enable important scientific discoveries. ESO also plays a leading role in promoting and organising cooperation in astronomical research.

ESO operates three unique world-class observing sites in the Atacama Desert region of Chile: La Silla, Paranal and Chajnantor. Each year, about 2000 proposals are made for the use of ESO telescopes, requesting between four and six times more nights than are available. ESO is the most productive astronomical observatory in the world, which annually results in many peer-reviewed publications: in 2013 alone, over 840 refereed papers based on ESO data were published. ESO works with industry to carry out projects and to build instruments and telescopes, including the E-ELT, the world's biggest telescope, which is planned to become a reality in the next few years. The program is expected to cost 700 million EUR.

ESRF – THE EUROPEAN SYNCHROTRON RADIATION FACILITY

ESRF is the world-leading source of synchrotron X-rays, an international research infrastructure supported by 22 countries. ESRF provides cutting-edge synchrotron X-ray science and techniques for the benefit of a European and worldwide scientific community. Since 2009, the ESRF is undergoing an ambitious 330 million EUR modernisation programme, the Upgrade Programme, encompassing two phases: the UP-I phase and the Extremely Brilliant Source (ESRF-EBS) project. The ESRF-EBS represents an investment of 150 million EUR over the period 2015-2022, centred on the construction of a new storage ring with unique properties. ESRF expect to invest 50 million EUR in the coming five years.

This new generation of synchrotron will offer unprecedented tools for the exploration of matter, for developing new sustainable materials, innovative industrial products and human health treatments in response to the major challenges confronting our society.

ESS – EUROPEAN SPALLATION SOURCE

ESS is a partnership of European nations committed to collectively building and operating a multi-disciplinary research facility based on the world's most powerful neutron source. The facility is under construction in Lund, Sweden. The unique capabilities of ESS will both greatly exceed and complement those of today's leading neutron sources, enabling new opportunities for researchers.

ESS will offer neutron beams of unparalleled brightness for cold neutrons, delivering more neutrons than the world's most powerful reactor-based neutron sources today, and with higher peak intensity than any other spallation source. The long neutron pulses (2.86 ms) of ESS are inherently advantageous to designing flexibility into the instruments. Tailoring the pulse width adjusts resolution and bandwidth, enabling investigations of structures and dynamics over several length- and time-scales. ESS will invest 300 million EUR the next five years.

EUROPEAN XFEL – THE EUROPEAN X-RAY FREE ELECTRON LASER FACILITY

European XFEL is an X-ray research laser facility recently inaugurated in Hamburg, Germany. The European x-ray free-electron laser (European XFEL) generates high-intensity electromagnetic radiation by accelerating electrons to relativistic speeds and directing them through special magnetic structures. The European XFEL is constructed such that the electrons produce x-ray light in synchronisation, resulting in high-intensity x-ray pulses with the properties of laser light and at intensities much brighter than those produced by conventional synchrotron light sources. The next five years will European XFEL invest approximately 100-120 million EUR in IT and detectors and diagnostic.

The 3.4 km long tunnel for the European XFEL housing the superconducting linear accelerator and photon beamlines will run 6 to 38 m underground from the site of the DESY research center in Hamburg to the town of Schenefeld in Schleswig-Holstein.

F4E – FUSION FOR ENERGY

F4E is the European Union's Joint Undertaking for ITER and the Development of Fusion Energy. The organisation was created under the Euratom Treaty by a decision of the Council of the European Union and its mission is to make fusion a reality: abundant, safe and sustainable energy for the future!

F4E is responsible for providing Europe's contribution to ITER, the world's largest scientific partnership that aims to demonstrate fusion as a viable and sustainable source of energy. ITER brings together seven parties that represent half of the world's population and more than 80% of its GNP – the EU, Russia, Japan, China, India, South Korea and the United States. F4E will spend approximately 4 billion EUR on the construction of ITER the next five years. Fusion for Energy works closely with industry and R&D organisations across Europe to fund the design, construction, manufacturing and testing of technical components for fusion devices.

ILL – INSTITUT LAUE-LANGEVIN

ILL is an international research centre at the leading edge of neutron science and technology, it operates one of the most intense neutron sources in the world. The ILL operates the most intense neutron source in the world, a 58.3 MW nuclear reactor designed for high neutron flux. This source supplies neutrons to 40 state-of-the-art scientific instruments capable of probing the microscopic structure and dynamics of materials at molecular, atomic and nuclear level. Some 2 000 scientists from 40 different countries come to the ILL every year to use its instruments and benefit from its long experience as a service Institute.

Since 2007 the ILL has spent 93 million EUR in an ambitious programme to ensure its instruments and nuclear facilities continue to address the challenges of the new millennium. Between 2018 and 2026 a further 77 million EUR are to be invested in the ILL's "Endurance" and "Key Reactor Components" programmes, guaranteeing that the Institute will maintain its world-leading position for another decade at least.

THE AFFILIATED BIG SCIENCE ORGANISATIONS

ALBA SYNCHROTRON - ALBA is a third generation synchrotron light source located near the city of Barcelona in Spain. At the moment it runs a portfolio of eight beamlines, providing cutting-edge analytical tools to the scientific and industrial communities. With the prospect of hosting a total of ca. 20 beamlines, it is presently engaged in a gradual growth process, with three more beamlines in construction and plans to get approval for several more. Integrated in the European collaboration LEAPS, ALBA actively engages with public and industrial partners to generate knowledge and competitiveness with the ultimate goal of improving welfare of society at large.

DESY – DEUTSCHES ELEKTRONEN-SYNCHROTRON - Deutsches Elektronen-Synchrotron – DESY is one of the world's leading particle accelerator centres. Researchers use the large-scale facilities at DESY to explore the microcosm in all its variety – ranging from the interaction of tiny elementary particles to the behaviour of innovative nanomaterials and biomolecules to the fundamental mysteries of the universe.

ELI-NP – EXTREME LIGHT INFRASTRUCTURE NUCLEAR PHYSICS - ELI-NP is one of the largest laser and gamma beam facilities in Europe and it has been funded since 2013 by the European Union. ELI-NP is located in the Magurele Physics Research Campus, in the south of Bucharest, Romania. The main purpose of ELI-NP is to achieve a series of new nuclear physics and applications only possible with these laser and gamma photon beams at unprecedented intensities. The laser beam will attain the peak power of 10 PW with the pulse width 20 fs resulting in the focused laser intensity higher than 1022 W/cm2. The gamma beam will attain 109 photons/s after the slit at the photon energy 19.5 MeV with better than 95% linear polarization. There will be more than 20 experimental setups using the two beams in 8 experimental areas.

ENEA - ENEA is the name for Italian National Agency for New Technologies, Energy and Sustainable Economic Development. It is an Italian research organization, with around 2700 staff employees distributed in its 9 research centers all over the national territory. The Agency's activities are mainly focused on Energy Efficiency, Renewable Energy Sources, Nuclear Energy, Climate and the Environment, Safety and Health, New Technologies, Electric System Research. ENEA's multidisciplinary competences and great expertise in managing complex research projects are put at the disposal of the Country system. Specifically, its activities are devoted to: basic, mission-oriented, and industrial research exploiting wide-ranging expertise as well as experimental facilities, specialized laboratories, advanced equipment.

FAIR - Facility for Antiproton and Ion Research in Europe GmbH - FAIR in Darmstadt, Germany, will provide particle beams with unprecedented intensity and quality. At its heart is a ring facility with a circumference of 1100 meters. A system of cooler-storage rings for effective beam cooling at high energies and various experimental halls will be connected to the facility. The existing GSI accelerators serve as a pre-accelerator. The FAIR facility will offer excellent research possibilities to scientists from all over the world, which reach from analysing the building blocks of matter to studying the processes in the universe.

MAX IV LABORATORY - MAX IV Laboratory is the Swedish synchrotron radiation facility and the largest investment in national research infrastructure ever made in Sweden. So far investments amount to 430 million EUR and will, by the time the facility is fully developed, have reached approx. 600 million EUR. MAX IV will have the highest quality of X-rays available to scientists from academia and industry in the whole world and these X-rays will be used to understand, explain and improve the world around us. They will enable the study of materials that we use today and improve them beyond the performance that we know. In addition, MAX IV will allow scientists to develop new materials and products that we cannot even imagine today, such as medications with better and more precise functions and fewer side-effects, nanoparticles for diverse areas of application, including paints, catalysis or computing, or lighter and stronger packaging materials for the future.

PSI – PAUL SCHERRER INSTITUT - PSI is the largest research center for natural and engineering sciences within Switzerland and is recognized as the leading national laboratory hosting Switzerland's unique world-class analytical large-scale research facilities. PSI develops, builds, and operates large-scale research facilities such as the Swiss Light Source (SLS), the SINQ neutron source, the SμS muon source, and the X-ray free electron laser SwissFEL. It performs cutting-edge research in three main areas: matter and materials; energy and environment; and human health. PSI is part of the ETH domain and employs 2100 people, with an annual budget of approx. 380 million CHF.

SCK•CEN – MYRRHA - The Belgian Nuclear Research Centre (SCK•CEN) has been working since several years on the design of a new multipurpose irradiation facility: Multipurpose hYbrid Research Reactor for High-tech Applications, better known as MYRRHA. This research facility will be the first demonstrator in the world of an accelerator driven system, abbreviated to ADS. The project consists in the creation in Mol (Belgium) of a large international research infrastructure in the field of nuclear sciences which will be used at least for the next 40 years. The project requires a total investment budget of 1,600 million EUR 2016 in 3 phases.

SKA ORGANISATION - SKA Organisation is the private UK company responsible for the design phase of the Square Kilometre Array (SKA), an ambitious project to build a transformative radio telescope. During 2018, the partners of SKA will establish an intergovernmental organisation to assume responsibility for the construction and operation of the global observatory. Initial preparation for procurement activities will begin during 2018, and construction of the SKA1 facility expected to start in late 2019.

Photo credit: Thomas Høyrup Christensen - Wonderful Copenhagen

Big Science Business Forum 2018

CVs of high-level speakers

Big Science Business Forum 2018

Carlos Moedas

EU Commissioner for Research, Science and Innovation

Carlos Moedas has been Commissioner for Research, Innovation and Science since 2014. Prior to that, Mr. Moedas has worked as Secretary of State to the Prime Minister of Portugal from 2011 until 2014 and Member of the Portuguese Parliament in 2011. From 2010 until 2011 he worked as Senior Economic Advisor of the Portuguese Social Democratic Party (PSD).

In 2008 he founded the Crimson Investment Management and worked as Managing Director and Member of the Executive Committee Board of Aguirre Newman from 2004 until 2008.

From 2002 until 2004 he worked as Consultant on mergers and acquisitions, Deutsche Bank and Eurohypo Investment Bank and he was Investment Banking Associate at Goldman Sachs from 2000 until 2002.

From 1993 until 1998 he worked as Engineer and Project Manager at Suez Group. Mr. Moedas is of Portuguese Nationality. He earned a Degree in civil engineering at the Instituto Superior Técnico de Lisboa, Portugal, and an MBA at the Harvard Business School, US

Academic background

MBA, Harvard Business School / 1998-2000
Degree in civil engineering, Instituto Superior Técnico de Lisboa / 1988-1993

Source:
http://www.era-can.net/wp-content/uploads/2015/04/Final-Speakers-Bios.pdf

Big Science Business Forum 2018

Fréderick Bordry

Director of Accelerators and Technology, CERN – The European Organization for Nuclear Research

In 1978, Frédérick Bordry graduated with a PhD in electrical engineering from the Institut National Polytechnique in Toulouse, and went on to gain his higher doctorate in Science, from the same institute in 1985.

Bordry's early career was spent teaching and conducting energy conversion research. Then he moved to Brazil, where he spent two years as a professor at the Federal University of Santa Catarina (Florianópolis). In 1981 he was appointed senior lecturer at the Institut National Polytechnique in Toulouse.

Bordry came to CERN in 1986, joining the group working on power converters for the Large Electron-Positron Collider (LEP) before moving in 1988 to the Operations Group as an engineer in charge of the Super Proton Synchrotron and LEP.

In 1994, the year that the LHC was approved, he joined the Power Converter Group as the Head of Power Converters Design and Construction for the LHC. He was appointed leader of the Power Converter Group in 2002, a position he held until December 2008.

In 2009, Bordry was promoted to Head of the CERN Technology Department - responsible for technologies specific to existing particle accelerators, facilities and future projects – where he has remained until 2013.

From 2014 he acted as the Director for Accelerators and Technology, where he is responsible for the operation and exploitation of the whole CERN accelerator complex, with particular emphasis on the LHC and for the development of new projects and technologies. He was re-appointed CERN's Director for Accelerators and Technology.

Source:
https://press.cern/biographies/frederick-bordry-born-1954-french

Big Science Business Forum 2018

Silke Schumacher

Director International Relations, EMBL – European Molecular Biology Laboratory

Professional career

Director International Relations at EMBL / Since 2010
Head of International Relations and Communications at EMBL / 2005–2009
Cooperations Manager at EMBL / 2003–2005
Managing Director, Anadys Pharmaceuticals Europe GmbH, Heidelberg / Germany, 2001–2003
Sr. Manager Pharma Business Development, Merck KGaA, Darmstadt, Germany /1999–2000

Academic background

Executive Master of Public Administration, Hertie School of Governance, Berlin, Germany / 2008–2010
Postdoctoral work at the National Institute of Health, Bethesda, USA /1997–1998
Docteur en Science, Université Paris XI / France1997
Diplom (Master) Biology, University Hamburg, Germany /1989–1993

Source:
https://www.embl.de/aboutus/international-relations/director/

Big Science Business Forum 2018

Johann-Dietrich Wörner

Director General, ESA – European Space Agency

Johann-Dietrich 'Jan' Wörner became the ESA Director General on 1 July 2015.

Previously, from March 2007 to June 2015, he served as Chairman of the Executive Board of the German Aerospace Center (DLR).

Jan Wörner was born in Kassel, Germany, in 1954. He studied civil engineering at the Technical University (TU) Berlin and TU Darmstadt, from where he graduated in 1985. In 1982, as part of his studies, he spent one year in Japan, investigating earthquake safety of nuclear power plants. Until 1990, Mr Wörner worked for consulting civil engineers König und Heunisch.

In 1990 he returned to TU Darmstadt, where he was appointed as a professor of Civil Engineering and took over as Head of the Test and Research Institute. Before being elected as President of TU Darmstadt in 1995, he held the position of Dean of the newly established Civil Engineering Faculty. Jan Wörner headed the university from 1995 to 2007 and succeeded in making it the first autonomous university of the Federal Republic of Germany.

Jan Wörner was Vice President of the Helmholtz Association and also a member of various national and international supervisory bodies, advisory councils and committees. He was a member of the administrative boards of École Centrale Paris, École Centrale de Lyon, TU Berlin, the Instituto Superior Técnico, University of Lisbon, the Arts and Music University in Frankfurt and has been a member of a number of supervisory boards including Carl Schenck AG, Röhm GmbH, TÜV Rheinland AG and Bilfinger SE.

Before joining ESA as Director General, Jan Wörner was head of the German delegation to ESA from 2007 to 2015 and served as Chairman of the ESA Council from 2012 to 2014.

Source:
http://www.esa.int/About_Us/Welcome_to_ESA/Johann-Dietrich_Woerner_ESA_Director_General

Big Science Business Forum 2018

Xavier Barcons

Director General, ESO – European Southern Observatory

Xavier Barcons, ESO Director General since 1 September 2017, was born in Catalonia, Spain in 1959.

He received Bachelor's and Master's degrees in physical sciences from the University of Barcelona in 1981. He was awarded a PhD in statistical physics in 1985 from the University of Cantabria, Spain.

Barcons began his academic career at the University of Cantabria first as a teaching assistant and then as a lecturer until he took up a role of Senior Research Scientist at the Spanish Council for Scientific Research (CSIC) in 1993. In parallel (1986–87), he moved to Cambridge University in the UK as a postdoctoral fellow, and then returned there as a sabbatical visitor in 1997. He was promoted to CSIC Research Professor in 2002.

Barcons's research has been focused on astronomy in X-ray wavelengths and, until the late 1990s, Quasi-Stellar Object absorption lines and the intergalactic medium. He has both participated in and led a number of research projects, some of which have provided the backbone for XMM-Newton surveys. His interests have unveiled obscured Active Galactic Nuclei (AGN) in the distant Universe, the evolution of the AGN population and the apparent mismatch between the X-ray and optical views of AGN.

In the late 1980s, he started the first X-ray astronomy group in Spain, which has partnered in many international collaborations and consortia. His group is now leading or engaged in various programmes that have obtained large amounts of observing time with a number of observing facilities (ESO, Gran Telescopio Canarias, XMM-Newton, Spitzer, WISE, ALMA) to better understand the nature of AGN and their relationship to galaxy formation.

Much of Barcons' efforts have been directed towards pursuing large projects, beginning as a co-investigator with the XMM-Newton Survey Science Centre in 1996. He has actively pushed for large X-ray observatory missions including XEUS, IXO when it merged with NASA's CON-X, and most recently, ESA's Athena mission.

Before becoming ESO Director General, Barcons served with ESO in many different roles, including ESO Council President from 2012–2014. He has dedicated significant effort to help progress major ESO projects including the Atacama Large Millimeter/submillimeter Array (ALMA) and the Extremely Large Telescope (ELT), which was approved during his mandate as ESO Council President.

Source:
https://www.eso.org/public/denmark/about-eso/dg-office/

Big Science Business Forum 2018

Francesco Sette

Director General, ESRF – The European Synchrotron Radiation Facility

A pioneer in research with synchrotron radiation, Francesco Sette spent eight years at AT&T Bell Laboratories in Murray Hill, New Jersey (USA). Whilst in the United States, Sette co-invented the world's first high-energy-resolution, high-intensity soft X-ray source, which quickly found its way into many synchrotron light facilities around the globe.
Sette became a staff member of the ESRF in 1991, where, as a group leader, he developed a new generation of inelastic X-ray scattering beamlines which made it possible to study atomic motions and electronic properties of condensed matter in unexplored momentum-energy phase space regions.

In 2001, Sette became Director of Research at the ESRF, playing a pivotal role in the conception and launch of the ESRF Upgrade Programme 2009-2018. On 1 January 2009, he took up the post of Director General, on a five-year term. Sette is the fourth Director General of the ESRF.
Sette has served as a member of the Advisory Committees of major light sources, including The European X-FEL in Hamburg (Germany), the LCLS at Stanford National Accelerator Laboratory (USA) and the Scientific Council at DESY.

Source:
http://www.esrf.eu/home/about/organisation/directors/bio-fsette.html

Big Science Business Forum 2018

John Womersley

Director General, ESS – European Spallation Source

Professor John Womersley began work as Director General of the European Spallation Source ERIC on November 1, 2016.

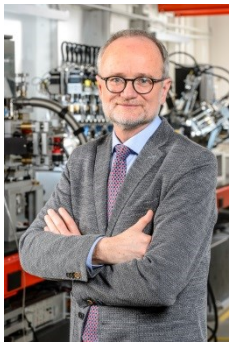
He previously held the position of Chief Executive of the Science and Technology Facilities Council (STFC), the United Kingdom's funding agency for large-scale science facilities and national laboratories, particle physics, nuclear physics and astronomy. He led the UK's membership of the European XFEL, ESS, and the SKA telescope project, and established the Hartree Centre as a £300m joint project with IBM.

As a graduate of Cambridge and Oxford (D. Phil. Experimental Physics), Prof. Womersley has played a leading role in particle physics both in Europe and the United States. John worked at Fermilab before becoming a scientific advisor to the Department of Energy in the US. He returned to the UK in 2005 to become Director of the Particle Physics Department at the STFC Rutherford Appleton Laboratory at a time when it was building and delivering vital components to CERN's Large Hadron Collider. In time John took on a broader role as Director of the Science Programmes Office and was then appointed Chief Executive in 2011.

He has served on the councils of CERN and ESO, the Fermilab (FRA) Board and the board of AURA. John has chaired the European Strategy Forum on Research Infrastructures (ESFRI) and the European Commission's Expert Group on Cost Control and Management in Large Research Infrastructures. John has also served on numerous review panels and boards as an expert including the Helmholtz Association and the Human Brain Project

Source:
https://europeanspallationsource.se/john-womersley

Big Science Business Forum 2018



Robert Feidenhans'l

Managing Director and Chairman of the Management Board, European XFEL – The European X-Ray Free Electron Laser Facility

Prof. Robert Feidenhans'l is the Chairman of the Management Board of the European XFEL GmbH. The 58-year old physicist comes from the Niels Bohr Institute at the University of Copenhagen in Denmark. The European XFEL Council, the highest organ of the non-profit corporation, appointed Feidenhans'l as successor to Prof. Massimo Altarelli in September 2016.

Robert Feidenhans'l studied at Aarhus University and earned his doctorate in the area of surface physics, from which nanophysics developed. He worked at Risø National Laboratory in various scientific and leading positions from 1983 until 2005, when he moved to the Niels Bohr Institute in Copenhagen. Feidenhans'l says that he is both honoured and very excited to have the opportunity to lead the European XFEL into successful operation, which is scheduled to start in the second half of 2017.

Professional career

Managing Director, Chairman of the Management Board at European XFEL GmbH / Jan 2017
Interim institut leader at the Niels Bohr Institute / Jun 2012
Vice institute leader for research at the Niels Bohr Institute / Mar 2007
Professor in X-ray Physics at the Niels Bohr Institute, Copenhagen University / Jan 2005
Head of Department of the Materials Research Department at Risø (~ 150 employers) / Jun 2001
Program leader for the program 'Surfaces and Interfaces' at Risø / Mar1993
Sientist at
the Department of Solid State Physics, Risø / Jul1986

Academic background

Master degree in Physics and Mathematics /Jan 1983
Awarded the A. Angelo prize / Jan 1986
Received the Ph.D. degree in Physics at the Institute of Physics, University of Aarhus / Jun1986

Source:
https://www.xfel.eu/news_and_events/news/index_eng.html?openDirectAnchor=1125
http://www.nbi.ku.dk/ansatte/?pure=da%2Fpersons%2Frobert-krarup-feidenhansl(0a3fb80e-6206-4f37-8e19-12d109fdab12)%2Fcv.html

Big Science Business Forum 2018

Richard Cobben

Head of ITER Delivery Department, F4E – Fusion for Energy

Professional career

- Head of ITER Delivery Department, Fusion for Energy, Jan 2018 – Present
- Vice President Engineering, Technology & Quality, Fokker Technologies Holding B.V., Jun 2016 – Present
- Vice President Technology, Fokker Aerostructures, Jul 2007 – May 2016
- Program Director Joint Strike Fighter, Stork Fokker AESP, Jul 2003 – Jul 2007
- Program Manager A300 / A310, Stork Fokker AESP BV, Jul 2001 – Jul 2003
- Project Manager Industrial Projects, Stork (Thailand) & Jacobs Engineering (Malaysia), Jul 1997 – Jul 2001

Academic background

- London Business School, Field Of Study, Mergers & Aquisitions, 2012
- IMD (International Institute for Management Development) - Business Programs, PED, 2005 – 2006
- Montfort University (UK), MSc,Logistics & Information Systems, 1996 – 1998
- Technische Universiteit Delft, Master's degree, Mechanical Engineering, 1983 – 1989

Source:
https://www.linkedin.com/in/richard-cobben-a557622/

Big Science Business Forum 2018

Helmut Schober

Director General, Institut Laue-Langevin (ILL)

Prof. Helmut Schober was appointed, with effect from 1st October 2016, as the new Director of the Institut Laue-Langevin (ILL) in Grenoble, the world's flagship centre for neutron science.

Professor Schober joined the ILL in 1994. From 2001 to 2011, he led the Institute's Time-of Flight – High Resolution group, before becoming Science Director and German Associate Director of the ILL.

Prof. Schober was born and grew up in Bavaria, Germany. He studied physics at the University of Regensburg and the University of Colorado in Boulder (USA), specialising in the spectroscopy of molecular systems. He then worked as a researcher at the University of Mainz and at the Forschungszentrum Karlsruhe, before joining the ILL. His research focused on fullerenes, the dynamics of liquids and glasses and on neutron instrumentation.

Professor Schober is also Associate Professor at the University Grenoble Alpes, after being visiting professor at the Technical University of Munich. He is a former chair of the German Committee for Research with Neutrons (KFN) and was the coordinator of the European Neutron and Muon Integrated Infrastructure Initiative (NMI-II).

Professional career

Director of the ILL / since Oct. 2016
Deputy and Scientific Director at the ILL / since 2011
Professor at the University of Grenoble Alpes (Chaire Grands Instruments) / since 2010
Head of the "Time of Flight and High Resolution" group at the Institut Laue Langevin / since 2001
Visiting Professor and Head of Department E13 at the Technical University of Munich / 2000-2001
Habilitation at the University of Regensburg with the topic "Dynamics of Fullerenes"/ 2000
Scientist at the Institut Laue Langevin in Grenoble France / since 1994

Source:

http://sine2020.eu/news-and-media/helmut-schober-to-be-next-ill-director.html
https://www.sni-portal.de/kfn/kfn/Schober.php