News

Valero, Honorary Award at the Telecommunications Night

Mateo Valero was distinguished with the Honorary Award at the 19th Night of Telecommunications and Information Technology.

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BSC, CRG and IRB join efforts in computational biology

BSC, the CRG, and the IRB Barcelona launch a Joint Programme in Computational Biology for a period of five years and renewable every three years.
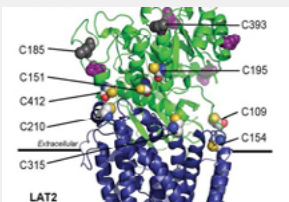
More information on page 3

Interdisciplinary collaboration, key of the SO Retreat

Over 60 participants attended the second Severo Ochoa Retreat, whose aim was to highlight collaboration among the BSC's different research groups.
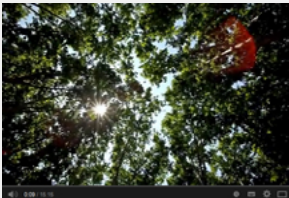
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First observation of a human HAT, key proteins in numerous pathologies

Researchers at BSC, IRB Barcelona and the University of Bern observe the first structure of a human HAT at low resolution.

More information on page 4

Consolider Video: Supercomputing and eScience

This documentary talks about the impact of supercomputers both in science and our daily lives. The results shown were obtained in the project Consolider.

More information on page 4

Spotlight on...

A BSC team participates in Trailwalker

A group from BSC will participate on April 26th in the Intermón Oxfam Trailwalker, with the team name "Marewalker". The challenge consists of four member teams walking 100km in less than 32 hours. The team members have to start, stay and finish together. The aim is to fight against poverty and injustice in the world.

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Directors' View

BSC was inaugurated on April 1, 2005 and next year we will celebrate our tenth anniversary. However, March 10 2004 is also an important date for us. That was when an agreement was signed in el Palacio de la Moncloa.

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Events and Training

Mar 13 — **PATC Course: Simulation Environments for Life Sciences**
13 March, Barcelona

Apr 10 — **PATC Systems Workshop: Programming MareNostrum III**
10 April, Barcelona

May 12 — **PATC Course: Performance Analysis and Tools**
12 May, Barcelona

More events on page 2

Inside BSC

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- BSC Newcomers
- Did you know...
- BSC-"La Caixa" International Doctoral Grants Programme
- Annual Meeting Photos
- Vacancies & Fellowships

GOBIERNO DE ESPAÑA — MINISTERIO DE ECONOMÍA Y COMPETITIVIDAD

Generalitat de Catalunya — Departament d'Economia i Coneixement

UNIVERSITAT POLITÈCNICA DE CATALUNYA — BARCELONATECH

Directors' View

BSC was inaugurated on April 1, 2005 and next year we will celebrate our tenth anniversary. However, March 10 2004 is also an important date for us. That was when an agreement was signed in el Palacio de la Moncloa between the Spanish government, represented by President Jose Maria Aznar, and IBM, represented by Adalio Sanchez, the company's vice-president. It was an historic day for BSC because with that signature the countdown to our creation began. Incidentally, only hours after the event, the terrible terrorist attack on the trains in Madrid took place.

Under the agreement, BSC guaranteed that MareNostrum, the name to be given to the supercomputer, would pass the Linpack benchmark in November 2004. If this condition had not been met, the Spanish government would have been penalized. We quickly began the search for a place to install the computer. The rector of the UPC, Professor Josep Ferrer, and the other lecturers from the UPC who would collaborate with BSC, wanted the computer to be installed in the Campus Nord in order to be close to their students. We looked for a suitable space in conventional buildings but we couldn't find one.

On June 20, 2004, when we were in the ISCA in Munich, we received a call from the rector who suggested that the MareNostrum be installed in the Torre Girona Chapel. At first we thought it was a joke. Obviously it wasn't and it was actually a great idea. This unique setting has meant that MareNostrum has been on the front cover of some of the best publications in the world. One example is Fortune Magazine, which in September of 2006 stated "MareNostrum is not the most powerful supercomputer in the world, but it is the most beautiful."

We quickly went to work in order to reform the chapel, which was then a kind of rubbish dump, and to convert it into an attractive, modern site. However, we didn't have enough time to install the machine and run Linpack before November 2004, so MareNostrum was set up provisionally in an IBM warehouse in Torrejón de Ardoz. Even though only 78% of the final configuration was installed, the machine entered the Top500 at number four, number one in Europe (a position which it maintained for one and a half years). Finally, MareNostrum was installed in its totality and at full performance for its users at the beginning of 2005. A new era had begun for supercomputing in Spain. Until then, although various Spanish institutions had bought parallel machines, none of them had been powerful enough to be ranked among the first 100 of the Top500 list. That had been the case with our centres, CEPBA (1991-2004) and CIRI (2000-2004).

In 2006, BSC installed MareNostrum II which was more than twice as fast as its predecessor. In order to optimize cost and usage by Spanish researchers, at the initiative of the Spanish ministry, MareNostrum I was broken up and distributed to centres in six Spanish cities, thus creating the Red Española de Supercomputación.

In 2010 the Spanish government signed an agreement under which BSC, representing Spain, became a hosting partner of the PRACE infrastructure. As a result, in 2013 MareNostrum III was installed, and at over 1 Petaflops it is 25 times faster than MareNostrum I.

All of this has meant that since 2004, Spain through the different MareNostrum and BSC, has been competing in the Champions League of global supercomputing.

Video and photos of MareNostrum's installation and construction
Video: Updating MareNostrum

Mateo Valero, BSC director

Calendar of Events and Training

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10 April, Barcelona

May 12 PATC Course: Performance Analysis and Tools
12 May, Barcelona

May 14 PATC Course: Heterogeneous Programming on GPUs with MPI + OmpSs
14 May, Barcelona

May 16 PATC Course: Programming ARM based prototypes
16 May, Barcelona

May 19 Industry Focused PATC Course: HPC-based simulations for the Industrial Realm
19 May, Barcelona

May 20 PRACE days 2014
20 May, Barcelona

Jun 2 PATC Course: Introduction to CUDA Programming
2 June, Barcelona

Jun 9 Second European Earth System and Climate Modeling School: 2nd E2SCMS
9 June, Barcelona

Jun 10 ICCS 2014
10 June, Barcelona

Valero, Honorary Award at the Telecommunications Night

Mateo Valero, BSC's director, was distinguished with the Honorary Award at the 19th Night of Telecommunications and Information Technology, hosted by the Associació Catalana d'Enginyers de Telecomunicació and the Col•legi Oficial d'Enginyeria en Informàtica de Catalunya. Valero received the award from the president of the Generalitat de Catalunya, Artur Mas, in front of nearly 900 professionals and representatives of companies, governmental institutions related to the world of telecommunications and computing. This award is in recognition to his extended technical and academic career in the field of the Information Technologies.

Mateo Valero says he feels happy to receive this prize from his IT colleagues, because "it recognizes the effort and work of a full team's dedication done during these years in research and technology transfer".

More information here (In Spanish) | **Video**

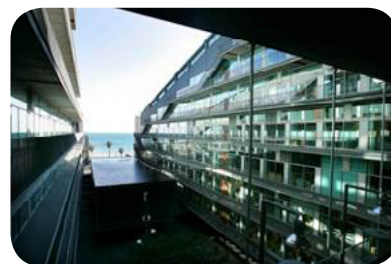## BSC, CRG and IRB join efforts in computational biology

BSC, the Centre for Genomic Regulation (CRG), and the Institute for Research in Biomedicine (IRB Barcelona) launch a Joint BSC-CRG-IRB Programme in Computational Biology for a period of five years and renewable every three years. These three institutes are Severo Ochoa Centres of Excellence and nodes of the Spanish Bioinformatics Network. Their long-term expertise and research quality will turn Barcelona into one of the most outstanding clusters worldwide.

The programme is headed by Modesto Orozco (IRB), with Roderic Guigó (CRG) and David Torrents (BSC) as associate directors, and comprises 10 research groups from these three centres.

Computational biology is a fundamental pillar of science and a key research field. In order to compete with the most innovative research, it is crucial to join critical mass and to disseminate research results.

This programme will provide researchers with unique computational and experimental resources to tackle complex biological problems, to fight diseases, and to attract the best researchers worldwide to Barcelona. The research lines range from computational biochemistry to computational biology and biomedicine.

More information here

News

Interdisciplinary collaboration, key of the SO Retreat

The second BSC **Severo Ochoa** Retreat was held on January 23. Over 60 participants attended the meeting, whose aim was to highlight collaboration among BSC's different research groups. For this reason, most of sessions focused on the interdisciplinary collaboration happening within BSC. Invited speaker Professor Mel Slater, an ICREA Research Professor at the University of Barcelona, ERC AdG, also gave a very thought provoking talk on virtual reality. Two international projects, in which BSC participates, were also presented, the **Human Brain Project** and the Pan-Cancer project.
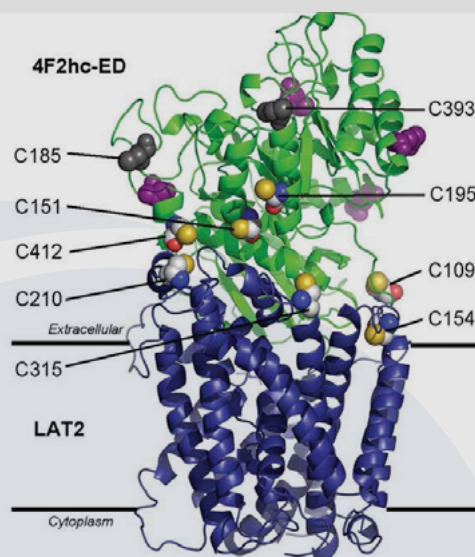
Read news on the website

First observation of a human HAT, key proteins in numerous pathologies

Researchers at BSC. IRB Barcelona, and the University of Bern observe the first structure of a human HAT at low resolution.

HAT amino acid transporters are involved in pathologies such as aminoacidurias, cancer, viral infections and cocaine addiction. The breakthrough published in the *Proceedings of the National Academy of Science* (PNAS) allows researchers to delve into the functions of HATs and to address the rational drug design of inhibitors.
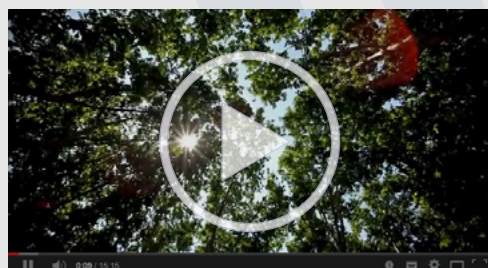
Reference article: *Structural bases for the interaction and stabilization of the human amino acid transporter LAT2 with its ancillary protein 4F2hc*

More information here (In Spanish)

Consolider Video: Supercomputing and eScience

This documentary talks about the impact of supercomputers both in science and our daily lives. The results shown were obtained in the project **Consolider: Supercomputing and e-Science** which is part of the Consolider - Ingenio 2010 programme. Its main goal is to advance in the field of applied supercomputing through several areas of science. Coordinated by the BSC, this project intends to boost cooperation

between 21 Spanish research groups, broaden the culture of supercomputing in Spain and also have a say in the design and efficient use of present and future supercomputers.

• **English video**
• **Spanish video**
• **Catalan video**

More information **here** (In Spanish)

Spotlight on...

A BSC team participates in Trailwalker

A group from BSC will participate on April 26th in the **Intermón Oxfam Trailwalker**, with the team name "Marewalker". The challenge consists of four member teams walking 100km in less than 32 hours. The team members have to start, stay and finish together. The aim is to fight against poverty and injustice in the world.

The teams commit themselves to obtain donations for Intermón Oxfam (IO). IO will invest donations in more than 400 cooperation projects, humanitarian actions, fair trade and social awareness.

Route

< **These are the members of Marewalker:** Claudia Rosas, Josep Subirats, Lluis Vendrell, Rogeli Grima, Sergio Mendoza, Thomas Grass, Victor Valverde, Álex Rico, Núria Sirvent

If you want to know them, see this **short video**

And do not miss **the bloopers**

This activity is part of BSC's Social Activities Plan. If you want to collaborate, click on the **team's web page**

You can also cooperate participating in the activities organized to obtain funds:

Collaborative Breakfast: get your piece of cake every Monday for only 1€.

Where?
• Nexus II: 3rd Floor
• K2M: 1st Floor
• C6: Office E201

Beer-tasting: 20th March, 6pm at Bar of the FIB (snacks included) 15€

Registration:
• Nexus I: rogeli.grima@bsc.es
• Nexus II: victor.valverde@bsc.es
• K2M: alejandro.rico@bsc.es
• C6: josep.subirats@bsc.es

For further information, please send an email to trailwalker@bsc.es

BSC Barcelona Supercomputing Center
Centro Nacional de Supercomputación

Inside BSC

BSC Newcomers

We remind you that BSC has a Welcome Manual for the newcomers. You can find the online version on the intranet:
https://intranet.bsc.es/en/node/2212

FRIMAN SANCHEZ
Senior Research Engineer
Life Science Dpt

LUIS BELTRAN SUCAR
Research Support Engineer
CASE Dpt.

MOHAMMAD KOUHI
Postdoctoral Researcher
CASE Dpt.

JAVIER ARIAS
Research Support Engineer
Computer Sciences Dpt.

MARTA GUINDOS
PhD Student
Life Sciences Dpt.

GEROGIOS CHRYSOKENTIS
Research Support Engineer
CASE Dpt.

JULIO GOMEZ
Human Resources Officer
Management Dpt.

SICONG ZHUANG
PhD Student
Computer Sciences Dpt.

DARKO ZIVANOVIC
PhD Student
Computer Sciences Dpt.

MILAN RADULOVIC
PhD Student
Computer Sciences Dpt.

JOSEP ORIOL VILARRUBI
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PhD Student
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PEDRO HERMOSILLA
PhD Student
Life Sciences Dpt.

SUZANA MILUTINOVIC
PhD Student
Computer Sciences Dpt.

DAVID PRAT
PhD Student
Computer Sciences Dpt.

FREDY JUAREZ
Postdoctoral Researcher CONACYT
Computer Sciences Dpt.

SERGIO MARES
Postdoctoral Researcher CONACYT
Life Sciences Dpt.

LUZ CALVO
User experience and interaction designer CASE Dpt.

Luz is an interaction designer and user experience expert, who will be in charge of designing and prototyping the new PELE interface. For this, Luz will interview and observe PELE users to characterize their workflow and identify areas and actions that can be streamlined and helped with good design. Luz, who will work in the Scientific Visualization team at CASE, is an example of how the new challenges that face BSC can only be tackled by joining forces between people with different fields of expertise.

Did you know...
Values and Competencies

BSC has defined the follow values that exemplify its corporate competencies:

• Ethics and honesty
• Responsibility and commitment
• Excellence and quality
• Enthusiasm and anticipation
• Innovation
• Collective identity and teamwork

You can see more details about our values and competencies on page 9 in our **Welcome Manual**.

Annual Meeting 2014 Photos • Annual Meeting photos are available on the *BSCCNS share* » *Communications folder* » *Photos* » *2014* » *Annual meeting*. Enjoy them!

BSC-"La Caixa" International Doctoral Grants Programme • Last February, the 2nd BSC-"La Caixa" edition of grants to include doctoral students was published and disseminated in several media. We have received a total of 120 applicants interested in participating for this edition. As of next term, the selection process will begin, concluding during the month of September, when the 4 best candidates will be chosen. These candidates will join the research teams with high-level researchers in the different areas of knowledge in the centre.

Vacancies & Fellowships • If you know someone who wants to join the BSC team, he/she can submit a CV to one of our current vacancies or fellowships' calls:
www.bsc.es/vacancies-fellowships
For further information contact **rrhh@bsc.es**.

Your participation is welcome!
If you have any suggestions for a new section or topic, please contact us on **newsletter@bsc.es**.