

Long Night of Research in the Ars Electronica Center

(Linz, 6.11.2009) The 2009 Long Night of Research is set for Saturday, November 7th. The Ars Electronica Center is one of 570 participating institutions nationwide. The moment the sun set—4:35 PM—the Museum of the Future kicks off a series of special events. Eight exhibits staffed by experts in their respective fields invites visitors to partake of fascinating experiments and virtual expeditions.

From Body to Soul

Some scientists call the human brain one of the most complicated systems in the universe: a network of 100 billion nerve cells in which each individual cell is, in turn, connected to approximately 10,000 synapses. Dr. Daniel Flöry and Dr. Albert Stückler of Linz General Hospital will be using functional magnetic resonance imaging (fMRI) to demonstrate how modern neuroscience works. They'll also elaborate on recent findings as well as the puzzles yet to be solved. The site of the presentation is the AEC's BrainLab.

Microworlds - The Key to New Life?

Hardly any field of science triggers such heated debates as genetic engineering. The very fact that it is technically feasible to intervene in the genetic makeup of life, to modify it and even to clone a human being calls into question our worldview and our moral values. For the Long Night of Research in the Ars Electronica Center's BioLab, Dr. Manuel Selg, professor of biotechnology at the Upper Austria University of Applied Sciences' Wels Campus, has put together a program that includes a "Copy Plant Show" and a "DNA Take Away" in which visitors can isolate DNA from their own saliva and take it home with them.

An In-Home Mini-Factory - Production Mode of the Future?

Imagine: you don't buy your sneakers in a sporting goods store any more; instead, you download them from the internet and simply print them out! A rather bizarre futuristic vision, but one that could soon become reality—with earth-shaking consequences for manufacturers and the whole economy. All the installations in FabLab focus on a single idea: being able to order digital objects from the Web and turn them out at home. And not (just) printing them out on paper; producing real, three-dimensional things ...

City, Region, World - Where are Developments Taking the Place in Which We Live?

Planet Earth will have 10 billion inhabitants in 2050, more than two-thirds of them living in cities. All over the world, metropolitan areas are exploding into megacities. Homo sapiens is evolving into homo urbanicus, a being whose hopes—and, all too often, disappointments—are connected more closely than ever before to the course of "life in the big city." GEOCITY is the domain of the Ars Electronica Center that deals with the global trend towards urbanization, scrutinizing our power and our impotence in a world in which the maxim "think globally, act locally" has long since established itself in business but is only slowly taking hold in politics and society. Developed by the Ars Electronica Futurelab, GEOCITY brings together multi-layered data about our world and provides a playful way of encountering global processes. At

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the same time, it opens up a totally new way of looking at the City of Linz as a localized setting for everyday life.

Virtual Expeditions – The Mode of Travel of the Future?

High-speed flights through outer space, reconnoitering historic places, aesthetic insights into the masterpieces of Leonardo da Vinci, or adventures in a three-dimensional world of paper–Deep Space opens up a new dimension of travel through time and space, one that includes journeying into domains inaccessible to the human eye, traveling into the past, and venturing into fantastic realms. Eight 1080p HD- and Active Stereo-capable Barco Galaxy NH12 projectors deliver incomparably detailed picture quality in 16x9 meter format. The imagery includes 3D-stereo universes, high-definition videos and breathtaking graphics made up of billions of pixels! And for the best view in the house, check out the Gallery along the back and side walls five meters above the main floor. “Uniview” is an impressive work of 3D animation of the entire known universe. Data provided by the world’s leading astronomical facilities has been brought together to form the informational foundation of the virtual flights in Ars Electronica Center’s Deep Space. Under the expert guidance of Dietmar Hager, Fellow of the Royal Astronomical Society, space travelers can zoom in on Earth from the most distant recesses of the universe. The platform for this virtual adventure is Deep Space.

SEE-KID – Measurement and Analysis of Eye Movements

SEE-KID presented by engineers Michael Buchberger and Thomas Kaltofen of RISC Software in Hagenberg is an interactive installation, but that’s not all. This software designed to simulate surgical interventions in the eye muscles was created right here in Upper Austria and is in demand worldwide.

Brain-Computer Interface – Controlling a Computer with Your Thoughts

A single thought ignites a veritable fireworks of electrical signals in our brain. This is how nerve cells (neurons) communicate with each other. There’s an especially large number of neurons in the cerebral cortex, the brain’s outermost layer featuring numerous grooves and folds. An EEG (electroencephalograph) makes it possible to “eavesdrop on” the neurons’ conversations. With the expert accompaniment of Markus Bruckner from g.tec Medical Engineering, visitors can use the Brain-Computer Interface to control a computer with their thoughts.

What Drives Us to Build Robots?

Some evince our striving for efficiency; others manifest a longing to create machines in our own image. It’s the development of humanoid robots in particular that teaches us a lot about ourselves. What motion is. And what’s intelligence. Or perception. In going about this, we recognize how highly developed we truly are, but also where we run up against our limitations. RoboLab delivers insights into the history of robotics and showcases the technical excellence of robots being created today. During the Long Night of Research, Thomas Müller-Wipperfurth, Michael Bogner, Markus Pfaff and Florian Eibensteiner, faculty

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members at the Upper Austria University of Applied Sciences' Hagenberg Campus, will be on hand to moderate hands-on encounters with robots.

What Makes the Ars Electronica Futurelab the Laboratory of the Future?

The Ars Electronica Futurelab is a new type of media art laboratory in which artistic and technological innovations are sources of mutual inspiration. The staff includes experts in a wide variety of fields; the approach to an assignment is characterized by transdisciplinarity and international networking. The Futurelab conceives and implements exhibition projects, designs artistic installations, collaborates with universities and pursues joint ventures with partners in the private sector. In conjunction with the Long Night of Research, Ars Electronica Futurelab Director Horst Hörtner, Co-Director Christopher Lindinger and Roland Haring, head of program research, offer a look at the lab's broad spectrum of activities.

Walt Disney Creativity Techniques or How To Find an Idea

Experts from Johannes Kepler University of Linz's Institute for Entrepreneurship and Organizational Development offer advice about creativity and coming up with good ideas.

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