Ars Electronica Festival 2020:

In "Kepler's Garden"

Press tour of September 10, 2020 with

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Doris Lang-Mayerhofer, City Councilor for Culture and Chairman of the Advisory Board of Ars Electronica

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It is a time of upheaval, violence and uncertainty. A time when religious conflict leads to a war that lasts 30 years and kills a greater percentage of the European population than the Second World War hundreds of years later. This is the time in which Johannes Kepler lives and researches and, because of his revolutionary views, repeatedly gets caught between the two fronts. He attracts the wrath of conservative scholars from both the Catholic and Protestant camps, loses one job after another, and is paid poorly and irregularly. His mother is accused of witchcraft in Württemberg; his children here in Linz are forced to attend Catholic mass. However, it is not only reactionary forces that shape the life of this mastermind: At the age of four, Johannes Kepler falls ill with smallpox, a droplet infection whose spread could only be contained by quarantine measures. Although he survives the disease, he suffers from a severe loss of vision for the rest of his life.

Today, Johannes Kepler is considered a beacon of scientific thought. His insight that the planets move at different speeds and their orbits around the sun are elliptical rather than circular, made a significant contribution to modern cosmology. However, the brilliance of his work often makes us forget how rocky the path was for this pioneer. And we are even more likely to forget how rocky the path has been for Kepler's successors, for artists, scientists, environmentalists and social activists who fight for new advances in the here and now and are therefore excluded, criminalized, suppressed and persecuted.

People like Johannes Kepler have an impact far beyond their discipline. Their findings not only change how the scientific community thinks, they also revolutionize our image of the world and ourselves. This year's Ars Electronica has a lot to do with Johannes Kepler: his curiosity, enthusiasm and imagination, but also the courage with which he stood up for his convictions.

Art, technology, science, society:

Ars Electronica and JKU invite you to "Kepler's Garden"

This is Ars Electronica's first guest performance at Johannes Kepler University – and it comes at just the right time. Five years in the POSTCITY have made Ars Electronica the largest platform for art, technology and society in Europe. In 2020, the festival opens a new chapter, turning the Johannes Kepler University campus into the epicenter of its artistic and scientific examination of our future. But even more important than the beautiful location is the strategic partnership with the JKU, which gives Ars Electronica's development new momentum.

The situation is similar with the Johannes Kepler University. The university's new self-image is expressed not least of all in a modern campus that is aware of its social dimension for the first time. Modern, striking architecture with lots of green in between, beach volleyball courts, a soccer field, sun terraces, a pond and a bar floating in it, a 12th-floor observation deck with a magnificent view over Linz. Studying at JKU will no longer be limited to studying in lecture halls. Young scientists will spend their time here on the campus, exchanging ideas, relaxing and doing sports.

Art and science in "Kepler's Garden"

Friday, 11 September 2020, 1 p.m. "Kepler's Garden" opens its doors for the first time and invites you to stroll around. No matter where you turn, the paths are lined with artistic works and scientific research projects. The "STARTS Exhibition" can be seen in the recently completed Kepler Hall, the "Garden Exhibition" will be presented around the pond, and projects from the Linz Institute of Technology (LIT) will be shown in the Open Innovation Center, the Learning Center, the Uni Center and the Science Park. Meanwhile, "create your world" cultivates an entire "Garden of Talents" under the expansive crowns of old oak, birch and beech trees, where everything revolves around young visions for our future.

In addition to these permanent presentations, "Kepler's Garden" will become the venue for the Soiré on Friday evening, which will be entirely devoted to art. The evening begins with a spotlight on VALIE EXPORT as well as Lisa Rass, Franziska Gallé, Jona Lingitz and Anna Fachbach — a pioneer appearing alongside the next generation of media artists. They will receive their Golden Nicas of the Prix Ars Electronica. The second part of the program will be the Big Concert Night with Markus Poschner and the Bruckner Orchestra Linz. On Sunday "Kepler's Garden" becomes the setting for the "AI x Music Festival" as well as the now traditional organic farmers' market. On Sunday Maki Namekawa, Dennis Russell Davies and Cori O'Lan invite you to "Pianographique" once again in "Kepler's Garden."

The STARTS Exhibition

"S+T+ARTS = STARTS Initiative - Innovation at the Nexus of Science, Technology, and the ARTS" is an initiative of the European Commission, which sees the digital transformation of industry, culture and society as the main driver for innovation across disciplines and genres. The aim is to make the link between technology and artistic practice a win-win situation for both European innovation policy and the art world. Part of the initiative is the prestigious STARTS Prize, endowed with a total of 40,000 euros in prize money, which honors innovative projects at the intersection of art, technology and science. A specially curated selection of eleven submitted projects will be presented in the recently completed "Kepler Hall".

The Garden Exhibition

Modern architecture, newly planted perennials, old trees, the duck pond - and scattered among them, 16 artistic projects—some of them tongue-in-cheek, some asking serious questions about where we stand. It's about our interaction with nature and the role we play, or would like to play, in the global ecosystem. It's about how we use technology and for what purpose, and how this affects us as individuals and as a society. And it's about our democratic society, which is coming under increasing pressure.

JKU LIT @ Ars Electronica

It's clear that we will only master the challenges of our time if we work together across the boundaries of disciplines, countries and cultures. Nonetheless, this cooperation is still often seen as a necessity — and a rather a tiresome one, because it requires effort — rather than as the huge opportunity it actually represents. Therefore, the Johannes Kepler University Linz and the University of Applied Arts Vienna have written a manifesto, "Innovation through Universitas," to launch a call for a new, transdisciplinary university culture. They have formed an alliance for creative innovation that links art and culture with science and technology design. The first steps have already been taken: The establishment of "Transformation Labs" and a call for best-practice projects at the interface of art and science, the results of which will be on view at Ars Electronica 2020. From the Open Innovation Center on the west side of the campus to Science Park 2 at its eastern end, the Linz Institute of Technology — LIT for short — is presenting a total of 14 projects that Johannes Kepler himself would definitely have enjoyed.

create your world

This year's "Future Festival of the Next Generation" is all about exchange and discussion. Young talents and tinkerers are invited to present their ideas and projects, exchange ideas and learn from each other. Themes include the tension between social proximity and physical distance, networked cooperation, an imagined city of the future, environmental pollution, creative applications of new technologies, differences and tolerance, friendship and, of course, first love.

Man & Machine: The AI x Music Festival

This year's "AI x Music-Festival" is about the ethical and creative dimensions of artificial intelligence. Current research and artistic practices that use AI systems to promote networked collaboration between musicians around the world will be presented and discussed. This takes into account the latest developments that have made digital information and communication tools indispensable for artists as well. This year's "AI x Music-Festival" will feature performances in Linz and elsewhere, which will be streamed or presented online. Artists, musicians, composers and researchers are invited to join in this discussion on the interaction between man and machine.

Our eternal struggle for freedom and self-determination: The Big Concert Night 2020

Inspired by the millions of people taking to the streets from Hong Kong to Minneapolis to express their indignation at racism, discrimination and oppression, this year's Ars Electronica is dedicated to the importance of democracy, self-determination and freedom of action. This idea will find eloquent expression in the "Big Concert Night," with the theme "Fidelio Freedom Project." Conducted by Markus Poschner, the Bruckner Orchestra Linz will play Beethoven's liberation opera *Fidelio* supported by the jazz group of Bastian Jütte, Harald Scharf, Hugo Friedrich Siegmeth and Nguyên Lê and the musicians Rupert Huber, Roberto Paci Dalo and AGF. Karl Markovics and Maria Hofstätter will appear as well, reading from letters by Franz Jägerstätter and his wife, as well as texts by Martin Luther King and John Milton. Starting from antiquity, motifs of the struggle for justice, resistance and solidarity are taken up again and again in the course of this unique concert. In the second part of the "Big Concert Night" Christina Kubisch and Katharina Ernst will perform their project "Interference." In a virtuoso interplay between man and machine, instrumental sounds are mixed with the sounds of electromagnetic fields and digital elements. "The Big AI-Jam — AI meets musical diversity" forms the third and final part of the concert evening. Using advanced AI composition software, Ars

Electronica Futurelab composer and AI researcher Ali Nikrang created a series of musical pieces and invited musicians from all over the world to shape their interpretation. Within the framework of the "Big Concert Night," nine of these musicians will perform their individual musical responses live.

Classical music & fantastic imagery: Pianographique

"Pianographique" stands for classical music and fascinating real-time visualizations. Since 2013, pianists Maki Namekawa and Dennis Russell Davies have been working with media artist Cori O'Lan, striving for the most intimate yet balanced combination of the three levels of experience of their live concerts: the piano music itself, the physical presence and virtuoso performance of the pianists, and the visual accompaniment generated by an analysis of the music played in real time. This time, John Cage, Philip Glass, Ludwig van Beethoven and Kurt Schwertsik are on the program. The visualizations are by Cori O'Lan and newcomer Gregor Woschitz. Designed as a Sunday brunch with classical music and fantastic visuals, "Pianographique" is the crowning finale of the Ars Electronica Festival. The venue and stage is the recently completed Kepler Hall on the JKU campus.

Ars Electronica Festival 2020: ars.electronica.art/keplersgardens

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The STARTS Exhibition / Projects

aqua_forensic - Underwater Interception of Biotweaking in Aquatocene

Robertina Šebjanič (SI) and Gjino Šutić (HR) make invisible pharmaceutical pollutants — antibiotics, antifungals, painkillers, hormone pills, etc. — visible and study their effects on the marine ecosystem. Using the example of the Adriatic Sea and its pollution, "aqua_forensic" combines art, science and Citizen Science and opens the discussion about how we deal with nature.

Design by Decay, Decay by Design

"As an architect and artist, I know that most of what I create ends up in the landfill," says Andrea Ling (CA). It is precisely this thought that became the starting point for a project that sees waste not merely as the product of decay and deconstruction, but rather as an opportunity for renewal and construction. Andrea Ling uses enzymes, fungi, bacteria and other biological substances both to decompose and to connect biological matter. Through selection of specific species, strict control of environmental conditions and specific nutrient specifications, she initiates and shapes the process of decay and stages mutability as a desired property in the physical world. Andrea Ling creates bioplastics with very different mechanical and physical properties, all of which are environmentally friendly and easily degradable.

EDEN – Ethics – Durability – Ecology – Nature

The project is aimed at creating a new Garden of Eden as the ultimate goal of introducing innovative technologies to art and using unorthodox thinking to solve ecological problems. In collaboration with scholars from various countries, Olga Kisseleva (RU) is "resurrecting" plant species around the globe. The study of trees as guardians of biological and historical memory has a special place in this project. The memory captured through its trees perceived as time capsules is a message about the future, despite the tragedies of the past. The artist scrutinizes the hypotheses advanced by European scientists, according to which plants can "communicate" among themselves. Humans can follow their communication through the interactive installations created by the artist. The trees included in the project can talk to humans through the Internet and let them know about any danger which can be perceived by vegetation before we know about it. The interactive program Datascape materializes and analyzes the whole communication activity of the organic network based on vegetal medium across the selected geographical area.

Perception iO

With "Perception iO" (Input Output) Karen Palmer (GB) addresses the issues of law enforcement and bias. The participant takes on the role of police officers who watch an interactive training video about an escalating situation. Meanwhile, the "Perception iO" system documents the facial expressions of the participants. Depending on how they react to the scene, the branching narrative chooses which course to take. The immersive experience

of "Perception iO" is based on findings from neuroscience, behavioral psychology, AI systems, film, recognition of facial emotions and gaze tracking.

Sociality

"Sociality" documents more than twenty thousand patents for socially manipulative information technologies. On the website Sociality.Today, the artist and activist Paolo Cirio (IT) shows thousands of inventions that exploit or result in discrimination, polarization, addiction, deception and surveillance. In "Sociality," Paolo Cirio not only exposes social manipulation, but also questions the ethical, legal and economic structures of technological apparatuses and systems.

plasticpreneur

"plasticpreneur" is an Austrian start-up that develops, produces and distributes simple mobile plastic recycling machines. All machines can be shipped around the world and put into operation without extensive training. Plastic or plastic waste should be recognized as a valuable raw material and processed into new products in recycling workshops on site. "plasticpreneur" wants to promote the creation of innovative products. It raises awareness and enables new businesses to be founded.

c o m p u t e r 1. 0

Julian Goldman (US), Victoria Manganiello (US) aka SOFT MONITOR present a display for the future that refers to displays of the past. They weave a large-format textile from hollow natural fiber threads and polymer tubes through which they then pump a colored liquid, along with oil and air. The textile becomes a lo-fi computer display made of traditional natural materials and techniques that contrast with today's digital technologies.

Re-Textiles 3D

With "Re-Textiles 3D" Ganit Goldstein (IL) wants to develop a new production system for the fashion industry that uses depth camera technology to create three-dimensional body scans. The system also uses recycled filament, which is made from 100 percent water bottle waste using the FDM 3D printing process, to produce customized garments.

Topography Digital

"Topography Digital" combines craftsmanship and technology. The focus is on how textiles can develop new properties through in-situ polymerization and the patterns and textures that pleated fabrics offer. The installation stages textiles as sensitive surfaces that react to touch; a digital clone opens up the possibility of interaction.

Hybrid Living Materials

With "Hybrid Living Materials (HLMs)", the "Mediated Matter Group" (INT) wants to draw attention to the great potential of products currently being designed at the interface of biology and technology. The researchers and designers combine a digital design platform

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with engineered bacteria, enabling them to program biological functions into physical objects.

The Garden Exhibition / Projects

Above the Below

"Above the Below" by Mathieu Zurstrassen (BE) is a somewhat unconventional sound installation. In order to be able to listen to what is coming out of a pipe sticking out of the ground, you first have to bend, kneel or position yourself in some other way. Only then will you be able to hear and understand that Elsie Lincoln and Ralph Paine Benedict's book *How to Analyze People on Sight* is being read here, which is all about "poses and postures."

Ethereal Fleeting

Lukas Truniger (CH), Itamar Bergfreund (CH) and Bruce Yoder (US) have built a machine-like sculpture that continuously produces clouds that float in the air and slowly dissolve again. "Ethereal Fleeting" asks how we interact with our environment and addresses our efforts to imitate and control nature.

lovesmenot

"lovesmenot" is dedicated to our relationship with machines and the absurdity of over-automation. A robot plucks one petal after the other to answer a question whose meaning it will never grasp. What remains is a purely mechanical action without any poetry or emotion.

A Various Monoculture

Jip van Leeuwenstein (NL) wonders whether it is possible to use robots to find a new balance within our ecosystem. A first field test will take place in "Kepler's Garden" during Ars Electronica. Dionea Mechanica Muscipula is a creature designed to attract and digest oak processionary moths. The robot attracts moths, catches them in its mouth, and digests them through a chemical reaction that supplies the robot's micro fuel cells with energy.

Air on Air

Yasuaki Kakehi (JP), Daisuke Akatsuka (JP), Juri Fujii (JP), Yoshimori Yoshikawa(JP) and Joung Min Han (KR) play with the idea that soap bubbles enclose the breath of their creators and float away as fragile entities on a journey with an uncertain outcome. Their hybrid installation "Air on Air" connects distant places online; bubble machines on site create the soap bubbles.

God is Dog spelled Backwards

Mathieu Zurstrassen points out that if you spell "GOD" backwards you get "DOG." His kinetic sculpture is intended as a homage to Guy Debord's "La société du Spectacle" of 1967, which is a radical critique of capitalism, the bureaucracy of real-world socialism, the industrial societies of East and West, and modern methods of governing.

Derotation

Domas Schwarz shows the video of a windmill whose wings turn in the wind. The trick is that the video is played on a display that rotates at exactly the same speed in the opposite direction of the mill wings. The result: everything rotates and yet the mill seems to stand still. An endless use of technology, but for what?

Machine in Flux - Wood

"Machine in Flux - Wood" is a documentation and cartography of time and environmental influences and is inspired by the annual rings of trees. Sunjoo Lee (KR) and Ko de Beer (NL) have built a machine that reacts very sensitively to changes in light, wind, temperature, humidity and sound and records these influences with ink on paper. Over time, this creates a unique, unforeseen pattern that refers to the complex interplay in natural ecosystems.

Political Atmosphere

"Political Atmosphere" is inspired by the British meteorologist and peace researcher Lewis Fry Richardson and his thesis that the same methods he used to predict atmospheric turbulence can also be applied to political turbulence. Felix Lenz' (AT) installation consists of a data-controlled mechanical siren and an ADS-B antenna that receives and processes the surrounding air traffic. Airplane after airplane adds to the latent build-up of potential until a threshold is crossed and a mechanism triggers the siren. The roar of the siren, both literally and figuratively, is part of everyday reality in conflict areas - slowly it is beginning to find an echo in our western society.

Kōrero Paki (Our stories of the legends)

"Kōrero Paki" transforms key moments of Maori mythology into holographic 3D sculptures. By means of motion capture, drawings become animated narratives. Viewed through simple red/cyan cardboard glasses, these sculptures begin to hover and dance above the surface of a smartphone. Yinan Liu (NZ), Jermaine Leef (NZ), Uwe Rieger (DE/ NZ) and Holly White (NZ) thus tell the story of Maori, of creation, the journey from Polynesian Hawaiki, the meaning of the whale, the ceremonial welcome in a marae, traditional weapons and performing arts.

Marinero - Tailored by weather

With "Marinero," Jef Montes (NL) wants to create an architectural blueprint that changes organically over time. He is working on a novel production system that produces adaptable garments that grow with their wearers. Jef Montes uses woven fabrics of monofilament and integrated variable threads. The combination of these threads causes friction, which in turn leads to dynamic forms in different meteorological conditions such as rain, strong wind or drought - "tailored by weather."

Still There

"Still There" is a video installation that deals with the state of irritation. Manipulated by frame blending, the computer transforms the images fed into it to create new (intermediate) images. Marlene Reischl (AT) deals with situations in which we are not sure how to categorize

what we perceive and we therefore feel uneasy, uncertain or even fascinated. When trying to insert contradictory things into "our" logic, sometimes strange intermediate images are created that seem uncanny to us.

Elsa on the Moon

Elsa on the Moon is a kinetic sculpture in honor of Elsa von Freytag Loringhoven, the eccentric baroness and contemporary of Marcel Duchamp. The kinetic sculpture consists of a robot leg fitted with a ceramic urinal, balanced by an extended aluminum arm with counterweights. In an effort to somehow give shape to time, Elsa on the moon seems like a pendulum clock that jumps every 30 minutes. Like a small jump in a known and controlled landscape, it initiates a joyful reflection on creative authenticity by focusing entirely on creation and not on its authors. A perfectly balanced Elsa jumps as slowly as if she were freed from earthly gravity.

Lochtopia feat. SISI

Cities represent memories organized and made manifest, which accumulate over a long period of time and constantly return to life through physical interaction. The Internet functions as their digital counterpart and offers new spaces of possibilities. Making these accumulated memories, our memories, visible and tangible here is only possible within communities with all their stories and images. With "Lochtopia feat. SISI" Simone Barlian (AT), Jan Phillip Ley (DE), Theresa Muhl (DE), Kerstin Reyer (DE), Sophie Netzer (DE), Lena Bammer (AT) and Tobias Saatze (DE) ask themselves how real and digital urban space can be connected.

Zugzwang - The Compulsion to Find a Common Baseline in Sound

Although sound is omnipresent, we have trouble understanding it. Misunderstandings and distortions are commonplace. How can we listen to our environment to learn more about what is going on? How can we use technology such as machine learning to hear and correctly interpret the "sounds of our planet"? Christina Gruber (AT) and Samuel Hertz (US) ask: How can we abandon our human-centered perspective and start thinking of ourselves as part of a coherent network?

JKU LIT @ Ars Electronica / Projects

In the Open Innovation Lab

The Elephant in the Room

With "The Elephant in the Room", Melanie Baumgartner (AT), Florian Hartmann (AT) and David Preninger (AT) explore the question of what role design can play in the development of sustainable technology. Their imitation of an elephant's trunk stands for nature-inspired robotics that are cooperative, adaptable and ecological. Because only sustainable innovation can have a lasting impact.

K - JKU's Interactive Robocar

"K - JKU's Interactive Robocar" is a research project from the Institute for Machine Learning at the LIT AI Lab and the LIT Robopsychology Lab, both located at JKU and Inseq Design (AT). "K" stands for Kepler and is a smart Robocar, which can travel independently on changing terrain, predict the movement patterns of pedestrians, and interact playfully with its environment. What the little robot perceives in the world around it (and how) can be followed by its audience on a screen. "K" is an example of how research in the fields of AI, autonomous driving and human-robot interaction can be made tangible for a broad public.

Robots Talking to Me

Focus on human-robot interaction: how should robots actually communicate with humans? Which voice makes AI assistants sound trustworthy to us? Do we have to listen to robots at all, or wouldn't it be better if we were in command ourselves? In "Robots Talking to Me," LIT's robo-psychology lab presents four interactive installations that focus precisely on these questions. One example: In the virtual reality game "Serum 13," human players find themselves in a biotech lab. To be able to produce a serum that can save them, they have to solve some tricky puzzles. Although an AI assistant is on hand to help, the question of when to trust the AI and when to decide for yourself remains open.

Transparency of Randomness

Our trust in "smart" technology depends on its reliability. Nevertheless, chance plays an important role in probability theory and statistics. The interactive installation "Transparency of Randomness" demonstrates exactly this and invites you to roll the dice. However, the dice are thrown on different surfaces over and over, further increasing the complexity of the process of randomness generation. The numbers generated in this way form the basis for a real-time calculation that demonstrates the impressive role of chance in scientific research.

In the Fulldome

The Fulldome/VR & AR Lab at the Department of Digital Art at the University of Applied Arts Vienna is a platform for new creative processes with a focus on digital applications for Fulldome, VR and AR environments. Students, teachers and researchers can carry out experimental research projects, develop new artistic grammars, question the influence of immersive devices and exchange ideas in an interdisciplinary way. Selected experiments will be shown in the context of Ars Electronica.

At the Learning Center

Digital Government in a Box / AI Truth Machine

Social scoring, AI-supported truth-finding in the courtroom, machine-generated messages from the sovereign administration: The digitization of administration and jurisdiction has many facets and consequences. From a purely technical point of view, many things are possible, but from a legal policy point of view, much less is desirable. The LIT Law Lab is therefore dedicated to the legal framework, with a focus on fundamental rights and data protection, and works on proposals for digitized law enforcement. The interactive installation "Digital Government in a Box / AI Truth Machine" will be presented at Ars Electronica. The

point of departure is a fictional courtroom. The question is, who is better able to distinguish truth from lies: An artificial intelligence or human judges? Before the visitors are questioned by the "AI Truth Machine," they are first asked to lie, then the actual interrogation begins. The machine provided by Converus® analyzes the eye movements and pupil dilation of the respondents and decides whether it is being lied to — or not.

The Pangolin Scales

A brain-computer interface (BCI) connects the human brain with a computer. How this works and the possibilities it opens up will be demonstrated at Ars Electronica by researchers from the Institute for Integrated Circuits at JKU, experts from g.tec medical engineering GmbH and high-tech fashion designer Anouk Wipprecht. They present a pangolin dress that can be controlled interactively and in real time by means of a 1,024-channel BCI.

Enacting Innovation

Innovation processes are always characterized by specific social structures. "Enacting Innovation" simulates those very structures. The participants find themselves in different roles and situations, play through conflicts and are sensitized to so-called innovation scripts, which help them to learn how to deal with the omnipresent pressure to prove their innovative ability. The aesthetic dramatization of these innovation scripts is intended to make innovation dynamics "tangible" and to encourage reflection on our power and powerlessness to control and intervene in social processes of change and renewal.

How to Become a High-Tech Anti-Discrimination Activist Collective

New technologies always promise neutrality and increased efficiency. However, the algorithms on which they are based are not neutral, nor do they treat everyone the same. In two lecture performances, Safiya Umoja Noble and Lisa Nakamura explore how digital media shape our perception of ethnicity in particular and identity in general. They expose systemic racism and sexism and suggest how we can achieve alternative and equal technological developments. "How to Become a High-Tech Anti-Discrimination Activist Collective" is aimed at activists, software developers, computer scientists, young entrepreneurs, students, users of software, databases, programs and various IT tools.

At the Uni-Center

Treeversity

Lush, green branches here and withered leaves or rotten twigs there — "Treeversity" visualizes the alternating success and failure of JKU students. Fed by a database containing around 268,000 enrollment records on 153,000 students, faculties, courses, rooms, exams and timetables, the installation transforms courses, grades and exams into buds, leaves, twigs, branches and new trees. In "Treeversity," Johann Höller (AT), Thomas Lorenz (AT), Florian Gruber (AT), Ursula Niederländer (AT), Tanja Illetits-Motta (AT), Raphael Blasi (AT), Andreas Rösch (IT) and Stefan Küll (AT) explore the inner workings of the university as a forest, while offering a tool for analyzing its mechanisms.

Dancing Water

Leon Kainz' (AT) "Dancing Water" is pure physics. The installation makes use of electrostatic induction, which says that the same charge carriers repel each other and different charge carriers attract each other. The energy of falling water droplets can therefore be converted into electrostatic charges, which causes the water droplets to swirl in dynamic paths around copper rods and react to nearby bodies. The result: water that dances.

At Science Park 1

Magic Darts or, when every throw is a perfect hit

Darts is a popular game but not an easy one. Most of the time, anyway. Andreas Stelzer (AT) and Rudolf Scheidl (AT) have developed a dart board that gives players a little help. A new type of microwave sensor network recognizes the approaching dart, algorithms calculate its trajectory and estimate the time and place of impact, ultra-fast hydraulic actuators move the dartboard into position within a few hundredths of a second, and the players can look forward to a perfect throw! Again.

Robots in Action - fast and sensitive!

In "Robots in Action," the Institute of Robotics at JKU brings the omnipresent but little-known field of industrial robotics to the fore. Two of these robots serve drinks; one fills the cup, the other brings it on a tray. Spectacular; the first robot flings the filled cup through the air, while the second robot balances a tray with four completely filled cups.

At Science Park 2

Exposed Building

Behind the smooth surfaces of distinguished buildings lie their basic logistics and infrastructure — a tangle of pipes and cables. Together, they form a kind of organism that is kept alive by us and must be protected against attacks and interventions from outside. Michael Roland (AT), Michael Mayr (AT), Robert Holzinger (AT) and Markus Vogl (AT) gained access to the infrastructure of Science Park 2 and hacked the electronic locking system. Thanks to the buzzers built into the door locks, they have transformed the entire building into a huge walk-in instrument. With their "Exposed Building," they want to draw attention to the vulnerability of modern technology and the attendant risks for our society.