

FALLING WALLS FOUNDATION

Science Breakthrough of the Year 2022: Falling Walls Shortlists Best Science Start-Ups and Science Engagement Projects

Berlin, 16 August 2022: Which are the next walls to fall in science and society? The non-profit Falling Walls Foundation announces the shortlist for the Falling Walls Science Breakthrough of the Year 2022 in the categories Science Start-Ups (Falling Walls Venture) and Science Engagement (Falling Walls Engage). The shortlisted participants will pitch their projects at the Falling Walls Science Summit during the Pitch Day on 7 November. The pitch winner from each category will receive the title of the Science Breakthrough of the Year 2022 and return to the stage for the grand finale of the Falling Walls Science Summit on 9 November.

The top 25 science start-ups in the **Falling Walls Venture** category were selected out of 131 submissions from 34 countries. Among the winning sciencepreneurship ideas were bio-inks for 3D human tissue printing, enzyme-based plastic degradation technology, first quantum modem and groundbreaking methods of cancer diagnostics and mental disorder therapy. As Carsten Mahrenholz, co-founder of Coldplasmatech AG and member of the Venture Advisory Board shares, *"In addition to the usual high quality of international applicants, the number of applications hit a new record this year. I am happy that, alongside health topics, environmental sustainability and even potential gamechangers made it into the next round. From pioneering start-ups to companies financed with 70 million, the Pitch Day in Berlin will be exciting!"*

In the category **Science Engagement (Falling Walls Engage)**, the Engage Advisory Board selected 20 winners out of 193 applications submitted from 66 countries. The winners presented innovative ideas with focus on sustainability and nature preservation, promotion of science accessibility, STEM popularization among girls and underrepresented communities as well as creative formats that connect science and art with the public. *"Being part of the Falling Walls Engage Selection Committee was a truly enriching experience, although selecting 20 winners out of so many good projects was not easy. I was inspired to see how innovative and advanced Science Engagement work addressing a wide range of topics from climate and health to education and urban environment has become."*, says Tasha Koch, founder of the science communication initiative Eh!woza and Falling Walls Engage Winner 2021.

Find the complete overview of all shortlisted projects below.

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About the Falling Walls Science Summit

Falling Walls Science Summit is a leading international, interdisciplinary and intersectoral forum for scientific breakthroughs and science dialogue between global science leaders and society. The event takes place every year from 7–9 November in Berlin, commemorating the fall of the Berlin Wall. With formats Falling Walls Pitches (7 November), Falling Walls Circle (8 November) and Falling Walls Science Breakthroughs of the Year (9 November), the Falling Walls Science Summit is the leading forum for global science leaders from academia, business, politics, the media, and civil society to debate the potential of scientific breakthroughs to solve grand challenges and shape a sustainable future. The Falling Walls Science Summit is organised by the charitable Falling Walls Foundation. More: www.falling-walls.com

SCIENCE START-UPS (FALLING WALLS VENTURE)

AIR COMPANY - USA

Air Company developed a technology that uses captured carbon dioxide to sustainably produce consumer and commodity goods at higher quality and lower cost than those made from fossil fuels.

ARGENTAG – ARGENTINA

ArgenTAG develops long-read sequencing applications to access critical health information stored in human cells, which allows for earlier diagnostics and better medical treatment of preventable diseases.

AXOLOTL BIOSCIENCES – CANADA

Axotl Biosciences makes novel bio-inks for 3D printing of human tissue models that can be used as a tool for drug discovery.

BEFC – FRANCE

To provide biodegradable energy, BeFC produces low-cost, low-environmental-impact, digital sensing tags powered by paper biofuel cells.

BIOTX.AI GMBH - GERMANY

biotx.ai aims at revolutionizing drug development by using WIDE DATA algorithms to effectively examine genomic data.

BYGEN - AUSTRALIA

Bygen invented a new way of making activated carbon sustainable, cheaper, and carbon negative.

C1 GREEN CHEMICALS AG – GERMANY

C1 Green Chemicals AG patented a new production process of green methanol from non-fossil feedstocks by employing quantum-chemical simulation and computer simulation.

CELLVIE AG - SWITZERLAND

cellvie is pioneering Therapeutic Mitochondria Transplantation, a novel treatment approach aimed at the cellular energy metabolism.

CHEMIFY – UK

Chemify aims to digitize chemistry using platforms capable of chemputation – these are modular, universal, scalable, and teachable systems for better chemical & drug discovery, chemical synthesis, and materials discovery.

COMPULAR – SWEDEN

Compular helps material developers create better products faster with a groundbreaking software which simulates and predicts material properties of new complex materials.

ELYPTA - SWEDEN

Elypta created a low-cost and scalable blood and urine screening test for early detection of cancer that detects approximately twice as many stage I tumors as competing technologies measuring DNA.

GRAYMATTERS HEALTH - ISRAEL

GrayMatters Health's technology Prism aims to revolutionize treating of mental disorders by creating digital markers of brain areas and teaching patients to control them volitionally.

INCIRT GMBH - GERMANY

InCirT develops semiconductor-IP solutions using ground-breaking transceiver technology that enables ultrafast wireless communication.

JUPITER IONICS – AUSTRALIA

Jupiter Ionics is developing a breakthrough electrochemical process to make carbon-neutral ammonia using water, air, and renewable energy to speed the global transition to net zero emissions.

MOTORSKINS - GERMANY

MotorSkins creates smart textiles and wearables morphing textile surfaces with embedded fluidics for well-being, medtech, aerospace, automobile, fashion, and VR industries.

NEURONOSTICS - UK

Neuronostics uses mathematical modelling to develop biomarkers that enable faster, objective and more accurate diagnosis of epilepsy.

ONEGO BIO LTD – FINLAND

Onego Bio is a cell ag company producing bioalbumen, animal-free egg white protein with precision fermentation.

PROSION GMBH - GERMANY

With a disruptive platform of ProMs chemical building blocks, PROSION offers a new therapeutic method of unlocking protein targets linked with cancer and other hard-to-treat diseases.

PUNA BIO - ARGENTINA

Puna Bio uses microorganisms called extremophiles to develop biological inputs for agriculture that increase yields, reduce carbon emissions, and restore degraded soil.

Q.ANT - GERMANY

Q.ANT provides novel sensors and photonic computing chips based on their Quantum Photonic Framework technology that utilizes quantum effects at room temperature.

QPHOX - NETHERLANDS

QphoX is building the first quantum modem, which will help scale quantum computers and connect them into a future quantum internet network.

RANDOM POWER S.R.L. (RAP!) - ITALY

RaP! developed a True Random Bit Generator for key generation with the aim to provide a secure, cost-effective, robust, and tiny device for the IoT, automotive and mobile markets.

RIBBON BIOLABS - AUSTRIA

Ribbon Biolabs produces long DNA molecules to replace classic recombinant technologies to accelerate biopharma innovation.

SAMSARA ECO - AUSTRALIA

Samsara Eco created plastic-eating enzymes that break down plastics into their molecular components, which can be used as virgin equivalent inputs in new plastics or upcycled to more valuable commodities.

TUBULIS GMBH - GERMANY

Tubulis uses the potential of antibody drug conjugates (ADCs) to develop differentiated treatment options and leverage meaningful therapeutic benefits for cancer patients.

SCIENCE ENGAGEMENT (FALLING WALLS ENGAGE)**AGNES FÖRSTER - REVIERA, GERMANY**

"REVIERa" is an interdisciplinary platform that addresses the complex challenge of coal phase-out and combines local transformation activities with global sustainability goals to shape the Rhenish mining area as a model region.

AMBER ABRAMS - MUSEUM OF WATERY RELATIONS/WATER MAP, SOUTH AFRICA

The project draws on multidisciplinary water research to map and co-produce knowledge around various relations with water and develop an online interactive map of water users, sources, and uses.

LAURA CAROLINA JARAMILLO - EAFIT CHILDREN'S UNIVERSITY, COLOMBIA

"EAFIT Children's University" is an education and Science Engagement programme designed to bring academia closer by creating active learning experiences and fostering critical thinking.

ANNA BERTI SUMAN - SENSING FOR JUSTICE (SENSJUS), ITALY

The project researches the potential of grassroots-driven environmental monitoring as a source of evidence in environmental justice litigation, and as a tool for environmental mediation.

CARRIE BOYCE - SCIENCE IS A DRAG, CANADA

"Science is a Drag" is the first fully science-themed drag show created to challenge cis- heteronormative stereotypes of scientists and provide a safe platform for queer scientists and science communicators.

CHARLES PHILIPP - MICRO MUSEUMS, USA

MICRO is a network of tiny science museums designed to remove barriers to museum access and transform the role museums play in the public conversation about science.

DARSHANA JOSHI - RURAL STEM CHAMPIONS FELLOWSHIP, INDIA

"Rural STEM Champions" is a STEM fellowship program focused on students from rural backgrounds and marginalized communities.

JAIME ANTONIO MENDOZA GONZALES - TECNONAUTAS - HÉROES DEL PLANETA, BOLIVIA

"Héroes del Planeta" (Heroes of the planet) uses storytelling to teach children about climate change through animated videos with a main character and nature elements as secondary characters.

JÉRÔME CÔTÉ- NEURO-SHOW, CANADA

"Neuro-Show" is a theatre performance with integrated scientific content that engages its audience to discuss scientific topics with invited researchers.

JOSHUA SALAZAR MEJÍA – OFFLINEPEDIA, AUSTRIA

"OfflinePedia" is a multimedia system aimed at combating digital divide through downloadable academic content created using e-waste such as outdated computers and TV sets as well as open-source software.

LAILA BERCHANE – EMPOWERING GIRLS IN RURAL AREAS THROUGH STEM, MOROCCO

Laila Berchane's project uses STEM and robotics to boost girls' confidence and give them a new perspective on education and their professional life.

LAURA HENDERSON – FRONTIERS FOR YOUNG MINDS, SWITZERLAND

"Frontiers for Young Minds (FYM)" is a free-of-charge, open-access kids' science journal, engaging kids in the research process by peer reviewing journal articles written by top scientists.

MICHAEL MUMBO - ADVENTURE IN THE PLANTS KINGDOM, KENYA

Through outdoor activities and better understanding of plants the project promotes the knowledge about the importance of plants and their role in the preservation and conservation of ecosystems.

MIKI IGARASHI - DANCING SCIENCE SHOW, JAPAN

Through her TV science shows that mix science with hip-hop dance Miki Igarashi strives to put more people in touch with science regardless of their environment or gender.

OTUO-AKYAMPONG BOAKYE - CLIMATE SMART TREE PLANTING, GHANA

The project uses the science behind tree planting to innovatively cleanse air, sequester carbon, create habitat for arboreal animals and initiate pockets of urban forest around sanitation related areas in Ghanaian urban areas.

SANDOR KRUK - ROMANIAN SCIENCE FESTIVAL, GERMANY

The festival aims to popularize STEM subjects among schoolchildren in Romania and uses mentor programmes to connect with children from underrepresented communities promoting accessibility and inclusion.

THABISO MASHABA - INTERNATIONAL DEVELOPMENT INNOVATION NETWORK, BOTSWANA

"International development innovation network (IDIN-SADC)" enables a global community of changemakers to design, develop and disseminate innovations that improve the lives of people living in poverty.

THEO ANAGNOSTOPOULOS – ECOSYSTEM, GREECE

"EcosySTEM" is a pilot project that aims to connect students from the local Pomak minority students with neighboring school communities through STEM environmental education and out-of-school workshops.

TIM RADEMACHER – THE WITNESS TREE PROJECT, CANADA

"The Witness Tree Project" aims to reconnect people and in particular students with trees and forests using real-time environmental data published as readable messages via automated social media accounts.

VAISHALI SHARMA - YOUNG TINKER ACADEMY, INDIA

"Young Tinker Academy" is a tinker space where school students collaborate and learn hands-on skills working with indigenous Indian communities.

