

FALLING WALLS FOUNDATION

Falling Walls Engage and Falling Walls Venture shortlist candidates for Science Breakthrough of the Year

Berlin, 21 September 2021. The Falling Walls Foundation announced its shortlist in categories Science Engagement (Falling Walls Engage) and Science Start-Ups (Falling Walls Venture). Shortlisted participants will pitch their ideas live during the Falling Walls Science Summit 2021. One winner from each category will return to the stage on 9 November, the anniversary of the Fall of the Berlin Wall, for the prestigious “Science Breakthrough of the Year”.

STEAM (Science, Technology, Engineering, Arts, and Mathematics) skill-building among underrepresented and marginalized communities and inclusive education were central to the winning projects in the Falling Walls Engage category. The shortlisted Falling Walls Venture start-ups presented solutions in digital health and disease diagnostics, novel sustainability practices, industrial-scale quantum computing, innovative analytics software and telecommunication and 3D printing technologies.

Shortlisted candidates will pitch their ideas live during the Falling Walls Science Summit 2021. All pitches will be broadcast via free livestream on the homepage of the Falling Walls Foundation. The jury chaired by Stefan von Holtzbrinck (Holtzbrinck Publishing Group) and Melanie Smallman (University College London) will select one winner from each category, who will claim the “Science Breakthrough of the Year” title.

In the category Falling Walls Engage, the jury reviewed a total of 189 applications from 80 countries. The selected 20 winners were chosen on the criteria of impact, approach, and transferability of their science engagement initiatives. The list of winning ideas included a citizen science project for ground water monitoring, an educational radio show to promote infant vaccination, art workshops for mental health awareness, a novel concept integrating science and languages, mobile STEM stations travelling between communities, a state-of art application merging videogames and science trivia and others.

The Falling Walls Venture jury received 102 submissions from 29 countries and chose 25 start-up ideas. Among the winning projects were point-of-need medical testing, microbial set that recycles fossil-based plastics, analytics software for infrastructure investment in developing countries, sustainable production solutions using algae, ink made of captured carbon dioxide, all-round quantum computing service and a software detecting early-stage deep vein thrombosis, number one cause of preventable hospitals deaths.

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 Nov), Falling Walls Circle (8 Nov) and Falling Walls Science Breakthroughs of the Year (9 Nov), 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 organized by the charitable Falling Walls Foundation. More: www.falling-walls.com

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STANLEY ANIGBOGU - STEM4HER, NIGERIA

Stem4Her trains young schoolgirls STEM (Science, Technology, Engineering, and Mathematics) skills and provides them tutoring sessions on how to use the skills they have learned to tackle issues in society.

YISALEMUSH ASEFA - 10+10+30 RADIO PROJECT FOR THE PROMOTION OF CHILDHOOD VACCINATION, ETHIOPIA

The project works with a format of a 10-minute-long radio show moderated by professional healthcare workers, who first present a medical topic and then take 30 minutes to answer the audience's questions. The topics of the episodes are developed in workshops with key audiences including mothers. The programme targets women with infants.

KYEREWAA BOATENG - DOCU-DRAMA TO ENGAGE THE HEARING IMPAIRED, THEIR FAMILIES AND COMMUNITIES, GHANA

The initiative includes two 25-minute docu-dramas and aims at engaging the hearing-impaired students and their families as well as researchers to strengthen genetics research of hearing impairment. One film including only sign language is used by researchers to engage deaf students in Ghanaian schools, the other film with sound is used to engage their families and communities.

JUDY BAARIU, DIFU SIMO – A MENTAL HEALTH CAMPAIGN IN KILIFI COUNTY, KENYA

Difu Simo is an engagement project in Kilifi, Kenya, which aims to promote dialogue and awareness about mental health among local communities. The project has implemented mental health engagement campaigns combining expertise of collaborators in health research, film, local culture, and community members.

FATEMEH BONYADI - SOHA, IRAN

Soha is a network of volunteer astronomers, volunteers and enthusiasts interested in communicating science to excluded communities and working with underprivileged groups, refugees and children with disability. The project facilitates interdisciplinary events mixing astronomy with arts, sports, and entertainment.

OSCAR CONTRERAS-VILLARROEL - CONCIENCIA MOBILE LABS, CHILE

ConCiencia Mobile Labs uses three fully equipped STEAM (Science, Technology, Engineering, the Arts and Mathematics) mobile vehicles that travel to all the regions of Chile to promote STEAM education in underserved communities, particularly in rural schools. By creating active and collaborative learning experiences, the project contributes to positive attitudes and perceptions towards science among students.

GABRIELA DE LA TORRE - PROGRAMA ADOPTE UN TALENTO (PAUTA), MEXICO

The initiative is designed to help girls, boys, and adolescents to develop scientific skills, critical thinking, and their interest in science. The project has a special focus on helping disadvantaged communities, with the participation of indigenous children, migrants, and children with disabilities.

LALA RUKH FAZAL-UR-RAHMAN - SCIENCE FUSE, PAKISTAN

Science Fuse is a social enterprise working to improve the quality of science education among 3 - 14-year-olds. The initiative curates informal STEM learning programs and interactive science activities to foster interest in science among children from diverse socioeconomic backgrounds, especially girls from underserved communities.

MÓNICA FELIÚ-MÓJER - AQUÍ NOS CUIDAMOS, PUERTO RICO

Aquí Nos Cuidamos (ANC) is a multimedia ready-to-use educational toolkit to promote COVID-19 prevention and wellbeing in vulnerable and marginalized communities in Puerto Rico.

JACQUELINE GOLDIN - DIAMONDS ON THE SOLES OF THEIR FEET, SOUTH AFRICA

An inclusive citizen science project aimed at groundwater monitoring in Hout Cachment, Limpopo, and involving actors at various levels from local tribal chefs and municipalities to scientists and independent organisations.

MICHAEL KASUMOVIC - ARLUDO, AUSTRALIA

Arludo aims to increase science interest and improve data literacy for students of all genders, ages, and socioeconomic backgrounds. By creating mobile apps and digital programmes, the project allows students to collaborate on collecting science data as they discover scientific concepts within the apps.

LINDSAY KEITH - SMASHFESTUK, UNITED KINGDOM

SMASHfestUK is an inclusive science and arts festival for young people and families that was founded to engage underserved/under-represented audiences with STEAM. Through community co-design for engaging audiences, and the participation of artists and scientists, the festival is also a platform for research engagement and impact.

STEPHANE KENMOE - MAKING SCIENCE THE STAR, CAMEROON

Stephane Kenmoe's film series, 'Science in the City' covers various scientific topics and shows the common perception of science in Africa. The director campaigns in African schools, universities, or public events to invite viewers to start scientific discussion.

ANASTASIA KOCH - EH!WOZA, SOUTH AFRICA

The initiative engages adolescents and young adults from areas with high rates of HIV and Tuberculosis (and recently COVID-19) to participate in workshops including high-impact biomedical research and reflect on their experiences through various artistic activities, facilitated by creative workshops.

JOANA MOSCOSO - NATIVE SCIENTIST, UNITED KINGDOM

The project connects migrant children and scientists across Europe using a new concept integrating science and language learning (STEM+LANG). In school workshops using a speed-dating format, 20 children and 4 scientists with a common heritage language meet to talk about science in a fun and meaningful way.

SARA NIKSIC - CANTICUM MEGAPTERAE, SONG OF THE HUMPBACK WHALE, CROATIA

'Canticum Megapterae' is an electronic music album inspired by the beauty and structure of humpback whale songs and aimed at raising awareness of other intelligent species. By combining science and art, the project's purpose is to break the walls between different disciplines and between human and animal cultures.

JAHNAVI PHALKEY - CONTAGION, INDIA

CONTAGION is a science exhibition that explores the phenomenon of transmission of diseases, behaviours and emotions. Through 16 interactive exhibits and more than 40 live programmes, the audience is invited to engage with critical questions on contagious phenomena.

ATTILA SZANTNER - MASSIVELY MULTIPLAYER ONLINE SCIENCE (MMOS), SWITZERLAND

The initiative integrates citizen science microtasks into major AAA videogames to convert the gaming time into an opportunity to engage with science. The project's two flagship projects, Project Discovery and Borderlands Science, engaged over 3 million participants.

ANNMARIE THOMAS - OK GO SANDBOX, UNITED STATES

OK Go Sandbox is a collection of videos and interactive online tools that help kids and families explore STEM and more through the music and education videos of the rock band OK Go. Using the website, thousands of kids and teachers can use the lessons to engage in projects.

MOHAMMED ZAID - LYBOTICS, LIBYA

LYBOTICS is an active force in the field of robotics and STEM education, empowering more than 500 high-school students and 60 mentors, from 10+ cities in Libya.

FALLING WALLS VENTURE

AIRCISION B.V. – NETHERLANDS

Aircision is a startup developing next generation, free space optics (FSO) systems for use in backhaul within new telecom networks.

ALGAL BIO CO. LTD. – JAPAN

Algal Bio Co. Ltd uses algae potential, which can be applied in most of the industries from food to energy by optimizing technical package of strains and cultivation conditions, to create a sustainable future.

ALICE&BOB – FRANCE

Alice & Bob builds universal fault tolerant quantum computers and sells its exponential computing power as a service. Its unique technology of self-correcting quantum bit allows to build ideal quantum computers a decade earlier than previously envisioned.

AZUL ENERGY INC. – JAPAN

AZUL Energy Inc. produces "air batteries" that use air as the reactor for the positive electrode and metal for the negative electrode. Metal-air batteries can store up to 10 times more electricity compared to common-use lithium-ion batteries.

BIOMENSIO LTD – FINLAND

Biomensio created a bioscreening technology to produce test results at point-of-need with high level of multiplexing, accuracy, and ease of digital connectivity. The initial application areas include the detection of SARS-CoV-2 and drugs of abuse in saliva, as well as food and milk safety.

CASTOR – ISRAEL

CASTOR is a decision support software for utilizing industrial 3D printing. It is a cloud-based on-premise software that analyzes each part within existing product design of discrete manufacturing, and automatically identifies parts that are a good fit for 3D printing, both technically and economically.

CARMINE THERAPEUTICS – SINGAPORE

Carmine Therapeutics is the first company in the world to harness red blood cell extracellular vesicles (RBCEVs) as vehicles for next-generation non-viral gene therapies that can overcome the current limitations of viral-based gene therapies.

CELLBRICKS GMBH – GERMANY

Cellbricks combines rapid high precision proprietary 3D-bioprinting technology with synthetic biology for tailor made bioinks and uses its expertise in tissue engineering to provide patients with personalised biological soft tissue implants.

CORE SENSING GMBH – GERMANY

Core Sensing specializes in the acquisition, analysis, and interpretation of measurement data from the powertrain of machines and commercial vehicles. The part of its measurement chain, the sensor assembly coreIN, can be installed inside various machine elements and transforms the components into smart sensors that transmit reliable measurement data wirelessly.

GRAVIKY LABS - USA

Gravix Labs recycles captured carbon emissions into inks and other industrial materials helping business to become carbon negative.

GLYPHIC BIOTECHNOLOGIES - USA

Glyphic Biotechnologies helps to decode the human proteome that may enable the development of novel therapeutics and diagnostics and, ultimately, a deeper understanding of human biology.

HUME AI – USA

Hume AI collects unbiased emotion data to train highly accurate facial and vocal expression models. The project aims to set the stage for fundamental advances in affective science and empathic technology and pave the way for AI that verifiably serves human emotion.

HYPNETIC GMBH – GERMANY

Hypnetic creates high efficiency electricity storage units using a novel hydraulic technology and AI management software for control, monitoring and optimization.

LIDROTEC GMBH – GERMANY

Lidrotec, short for Laser Hydro Technologies, develops, builds, and sells laser machines that use ultrashort laser pulses in liquid environment to cut, structure or induce surface modifications into a desired material. The project operates on the microchip market with the perspective to work in the medtech as well as aerospace industry.

THE LIVE GREEN CO – CHILE

The Live Green created Charaka, the AI software that blends holistic plant nutrition with Biotech & AI-ML to replace animal, synthetic and highly processed ingredients in our food products with 100% natural, functional & sustainable plant alternatives.

N-INK – SWEDEN

n-Ink produces printing inks to boost solar cell, battery, and display performances by creating a high conductivity n-type ink that is ecofriendly, sustainable, and scalable.

POLILoop – HUNGARY

Poliloop created a microbial cocktail that degrades, metabolizes, and mineralizes fossil-based plastics. The end-product is a non-toxic sludge that can be used as a soil improver. The process is comparable to how natural polymers are recycled infinitely in nature.

PORO TECHNOLOGIES LTD – UK

Poro Technologies uses porous GaN (gallium nitride) semiconductor materials to offer entirely new platform for semiconductor devices to be built upon, such as micro-LEDs, lasers, power electronics, quantum computing and communication.

QUANTUM BRILLIANCE – AUSTRALIA

Quantum Brilliance (QB) is a computing start-up offering quantum computing as an everyday technology, as ubiquitous as classical computers are today. QB covers the entire area in the quantum value chain, from the manufacture of diamond processors to the various software levels and customer applications.

RECATALYST – SLOVENIA

ReCatalyst developed a high—efficiency nano-tech process to make fuel cell catalysts based on the reduced amount of platinum, which allows for a more cost-efficient production process.

SOLCOLD – ISRAEL

SolCold is based upon 'anti-stokes fluorescence' patented technology that combines nanotechnology, physics, and chemistry and allows to use sunlight radiation to cool down objects.

THINKSONO – UK

ThinkSono built the software detecting deep vein thrombosis (DVT), which is the number one cause of preventable hospital deaths in the world. With ThinkSono's software, DVT can be detected in as little as 5 minutes, at the point of care and at a fraction of the current diagnostic cost.

TRACELESS MATERIALS GMBH – GERMANY

traceless is a female-founded circular bioeconomy startup offering a holistically sustainable alternative to conventional plastics. The innovative technology allows to use food production waste to produce materials that are home compostable.

TRUE ANGLE MEDICAL TECHNOLOGIES, INC – CANADA

True Angle helps patients with swallowing disorders by creating an affordable, convenient, data-driven health@home technology called the Mobili-T, or mobile therapist. The Mobili-T is a pocket-sized technology consisting of a small wireless sensor that provides custom exercise targets and feedback shared with a clinician.

VILLAGE DATA ANALYTICS – GERMANY

Village Data Analytics (VIDA) is a transformational project management and analytics software for infrastructure investment into remote village economies in developing countries. VIDA provides near-real time insights and transparency to plan, monitor and measure the effectiveness of large-scale investments into some of the world's poorest regions.