

FALLING WALLS LAB WROCLAW

Monday, 26. September 2022
Oratorium Marianum, University Main Building



Ambasada
Republiki Federalnej Niemiec
Warszawa



Uniwersytet
Wrocławski

FALLING
WALLS
LAB
WROCLAW

CONTENT

- 1 Concept
- 2 Programme / Timeline
- 3 Jury
- 4 Participants / Contributions
- 5 Partners / Sponsors
- 6 Contact
- 7 Feedback

FALLING
WALLS
LAB
WROCLAW

CONCEPT

The Falling Walls Foundation founded the Falling Walls Lab in 2011 in order to

... **connect** aspiring innovators

... **discover** and develop talents

... **support** interdisciplinary dialogue and international cooperation

... **develop** new ways of scientific communication

... **build up** new and strong networks

FALLING
WALLS
LAB
WROCLAW

TIMELINE

Monday, 26. September 2022

Wroclaw, University Main Building, plac Uniwersytecki 1, Senate Hall

FALLING
WALLS
LAB
WROCLAW

- | | |
|-----------------------|--|
| 1:00 – 1:30 pm | Jury briefing, Arrival and registration of participants |
| 1:30 pm | Welcome: J.M. Rector UWr, prof. Robert Olkiewicz |
| 1:40 pm | Welcome address: General Consul of Germany in Wroclaw, Mr. Martin Kremer |
| 1:50 pm | Introductory remarks: prof. David Blaschke |
| 2:00 pm | Scholar Presentations (1-10) in person |
| 3:00 pm | Networking break (scholars) / Evaluation session (jury) |
| 3:45 pm | Award ceremony / Group picture |
| 4:00 pm | Farewell |

THE JURY

Prof. dr hab. Bogusław Pawłowski, Chair of the Jury
Head of the Department of Human Biology
University of Wrocław



Prof. dr hab. Robert Wieczorek
Vice-Rector for Finance and Development
University of Wrocław



THE JURY

Prof. dr hab. Andrzej Ożyhar

Vice-Rector for Science

Wrocław University of Science and Technology



Prof. dr hab. Anna Chełmońska-Soyta

Vice-Rector for Internationalization

Wrocław University of Environmental and Life Sciences



THE JURY

Martin Kremer

General Consul

German General Consulate in Wrocław



Tomasz Janoś

Head of the Municipal Office for University Relations

Wrocław Academic Centre



THE JURY

Narine Gevorgyan

Falling Walls Lab Organizer

A. Alikhanyan National Science Lab. Yerevan



Dr Agnieszka Popiołek-Masajada

Department of Fundamental Problems of Technology

Wrocław University of Science and Technology



PARTICIPANTS

1. Beran, Pavel (Czechia)

Charles University Prague

Title: Breaking the Wall of Stress Management

Problem: Lack of knowledge and strategies that can effectively regulate emotions and body's stress response.

Solution: Training program with associated mobile application that provides not only the necessary information about stress and strategies to regulate it, but also the tools to apply them in daily life.

Teaser: As stress is related to up to 90% of chronic diseases, we want to provide training and tools that stimulate the change of habits and attitudes in order to regulate stress response in the body.

PARTICIPANTS

2. Bielejec, Hanna (Poland)

University of Warsaw

Title: Breaking the Wall of Mutual Help

Problem: Trust, safety and communication barrier limiting engagement in direct mutual help.

Solution: Community based, non-profit web application for sharing and requesting help by verified users, help progress tracking, community reviews and game-like incentives.

Teaser: Revify.org - Web app making direct mutual help safe, easy and rewarding.

PARTICIPANTS

3. Červenková, Veronika (Czechia)

Charles University Prague

Title: Breaking the Wall of Biodegradable Plastic

Problem: Plastic usage is not a problem. The problem lies in its processing. Plastic cannot fully self-degrade for hundreds of years and therefore, causes large environmental issues.

Solution: Production of non-toxic, self-degradable, and biocompatible biopolymers using atmospheric pressure plasma to enhance their mechanical properties and bactericidal activity.

Teaser: Investigation of the effects of atmospheric pressure plasma on biopolymers (chitosan, sodium alginate) in order to find the best industrial conditions for a possible plastic substitute candidate.

PARTICIPANTS

4. Dr. Grünwald, Richard (Czechia)

Institute of International Rivers and Eco-Security, Yunnan University

Title: Breaking the Wall of Water Dialogue

Problem: To date, most scientists focus on effective water utilization and improving data accuracy. Yet, many research findings serve as a political tool for justifying desirable water management practices.

Solution: I propose the Water Bias Index (WBI), an assessment analyzing the alignment with standard research procedures. This will show different quality and controversial research inputs in water dialogue.

Teaser: My project (1) uncovers the dilemma between the politicization of science and scientization of politics, and (2) provides alternatives for accountable water dialogue in Mekong River Basin.

PARTICIPANTS

5. Dr. Patrono, Enrico (Italy)

Institute of Physiology at the Czech Academy of Sciences

Title: Breaking the Wall of Neuroscience Single-Discipline Approach

Problem: Several studies attempt to unravel the causes of excitatory/inhibitory imbalance in schizophrenia. The pitfall is the loose control of the exact target cells keeping an excessive level of abstraction.

Solution: Implementing microfluidic chips called Brain-on-a-Chip, an innovative in-vitro-silico model for neural circuits, allows high temporal and spatial control of molecules and cells in schizophrenia.

Teaser: Time/space stimulation and real-time detection combined with opto-electrophysiology on a BoC within the 3Rs concept: the test case of the excitatory/inhibitory imbalance in schizophrenia.

PARTICIPANTS

6. Pogoda, Michał (Poland)

Wroclaw University of Science and Technology

Title: Breaking the Wall of Water Management

Problem: On a daily basis, every city plans what its water consumption will be. This process depends on a lot of factors, a mistake can be costly at times

Solution: We would like to use the AI model to predict water consumption based on past consumption enriched with other exogenous variables, such as weather and the organization of mass events.

Teaser: Our solution supports water pumping stations providing them with real-time water usage estimation. The employee can read the future demand in the web application any time and adjust the water intake.

PARTICIPANTS

7. Sojka, Vladimír (Czechia)

Technical University of Liberec

Title: Breaking the Wall of Process Innovation

Problem: The use of nowadays methods for improvement of production processes is focusing on the optimum of the current process. Pursuing the optimal state is in opposition to achieving radical innovations.

Solution: By using TRIZ principles, instead of searching for the optimum, an ideal state of the process is pursued. That leads to breakthrough ideas on how to achieve the purpose of the production process.

Teaser: TRIZ is based on the research of millions of patents, where patterns of technical evolution were discovered. I am using these patterns to search for innovative solutions how to improve production.

PARTICIPANTS

8. Sonntag, Erik (Czechia)

University of Chemistry and Technology Prague

Title: Breaking the Wall of Medical Non-Compliance

Problem: Low adherence of chronic patients is a severe problem of today's medicine, primarily due to the side effects of misused medications, possible subsequent hospitalizations, and the associated cost.

Solution: Patient adherence can be significantly increased by simplifying the medication regimen by reducing the number of dosage forms the patient must daily take, which is the goal of the project.

Teaser: The project introduces a new technology (Robo-Pharmacist) for the continuous manufacture of multi-drug capsules. One such capsule is equivalent to 3-5 different single-drug dosage forms.

PARTICIPANTS

9. Dr. Szóstak, Mariusz (Poland)
Wroclaw University of Science and Technology

Title: Breaking the Wall of Unsafe Construction Sites

Problem: Construction industry, especially construction site, is one of the most dangerous workplace, with thousands of the injuries and too many fatalities taking place every year. How do we change this?

Solution: One of the best solution is application effective training method using new technology - Virtual Reality (VR). VR allow to generate a virtual environment and simulate various working conditions.

Teaser: Thanks to the use of the virtual training environment, an employee can see, feel and 'survive' accidents situations and learn about the cause and consequences. Virtual Reality is our Future.

PARTICIPANTS

10. Valentin, Marvin (Philippines)

Wroclaw University of Environmental and Life Sciences

Title: Breaking the Wall of Inefficient Carrot Planting

Problem: The manual planting of carrot seeds by farmers in the Philippines especially in the province of Benguet. Farms in Benguet are of small sizes and hilly making it difficult to mechanize.

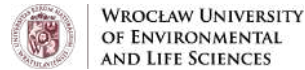
Solution: Develop a portable carrot seeding machine that will plant carrot seeds.

Teaser: A carrot seeding machine was developed which can efficiently and precisely plants carrot seeds over a plant bed resulting to reduction on the expenses of farmers as incurred in manual carrot planting.

FALLING WALLS LAB WROCLAW

WHICH ARE
THE NEXT
WALLS
TO FALL?

IN COOPERATION WITH



THANK YOU TO OUR PARTNERS AND SUPPORTERS

Supporting Partner



Network Partners



CONTACT



Prof. David Blaschke
Institute of Theoretical Physics
University of Wroclaw
david.blaschke (at) uwr.edu.pl
www.ift.uni.wroc.pl/~blaschke

FEEDBACK

What is your overall impression of the Falling Walls Lab Wrocław?

What are your concrete suggestions for improvement?

What was most challenging?

email: david.blaschke@uwr.edu.pl

FALLING
WALLS
LAB
WROCLAW