



Peter HANTZ

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About me:

I have worked as a research scientist in various contexts. The research that I currently do is sometimes carried out in extreme underwater environments. My scientific research focuses on chemical and microbial pattern formation, while my entrepreneurial endeavors relate to translational medicine. Our goal is to disseminate the results of our research, as well as to turn scientific achievements into practical innovations.

● WORK EXPERIENCE

2020 - CURRENT - Budapest, Hungary

LECTURER IN INNOVATION MANAGEMENT - EÖTVÖS LORÁND UNIVERSITY

Teaching Innovation Management in the Chemistry PhD School. Helping students to turn their ideas into profitable businesses.

phd.chem.elte.hu

2019 - CURRENT - Cluj, Romania

CHIEF EXECUTIVE OFFICER - FIBERVAR LLC.

Managing innovations. Starting the production of an EIT award-winning food supplement and a WORT award-winning ergonomic chair. Doing research and development, screening new ideas that can be turned into products.

www.fibervar.com

2020 - 31/03/2022 - Budapest, Hungary

BIOPHYSICIST AND RESEARCH DIVER - CENTRE FOR ECOLOGICAL RESEARCH, HUNGARY

Research diving in lakes with extreme environments. Managing the collection and analysis of samples and contributing to the laboratory work (culturing, metagenomics, microscopy, instrumental analytics, electrophysiology). Recording underwater physical and chemical parameters, taking pictures and making videos. Doing experimental and theoretical work on pattern-forming reaction-diffusion systems.

Disseminating the results through presentations, popular science articles and documentary movies.

<https://www.facebook.com/szovata/posts/3239114716150831>

<https://www.facebook.com/watch/?v=252871639421275>

2017 - 2020 - Pécs, Hungary

BIOPHYSICS RESEARCHER - UNIVERSITY OF PÉCS, MEDICAL SCHOOL

Doing research in biomaterials and theoretical mechanics.

2016 - Lausanne, Switzerland

VISITING SCIENTIST – ÉCOLE POLYTECHNIQUE FÉDÉRALE DE LAUSANNE

Research on novel solar cell materials, the halide perovskites.

2011 – 2015 – Basel, Switzerland

BIOPHYSICS RESEARCHER, POSTDOCTORAL FELLOW – FRIEDRICH MIESCHER INSTITUTE FOR BIOMEDICAL RESEARCH

Building multielectrode array research setups for retina electrophysiology, doing eye surgery for transgenesis, writing software for analyzing the results.

2007 – 2010 – Heidelberg, Germany

RESEARCHER ON BIOLOGICAL PATTERN FORMATION, POSTDOCTORAL FELLOW – EUROPEAN MOLECULAR BIOLOGY LABORATORIES, HEIDELBERG

Doing laboratory molecular biology research on a living fossile marine annelid, *Platynereis dumerilii*, with a focus on its nervous system. I was member of the Arendt laboratory.

2007 – Oxford, United Kingdom

VISITING SCIENTIST – UNIVERSITY OF OXFORD

Working at the Anatomical Neuropharmacology Unit.

2003 – 2006 – Cluj, Romania

PHYSICS LECTURER – BABEȘ-BOLYAI UNIVERSITY

Teaching Theoretical Physics and Biophysics to students in three languages (Hungarian, German and Romanian).

Doing research in Physical Chemistry and Biomechanics.

● EDUCATION AND TRAINING

2006 – École de Physique, 24 quai Ernest-Ansermet, Genève, Switzerland

PHD IN PHYSICS – Université de Genève, École de Physique

I wrote my Thesis on a new class of pattern-forming chemical reactions discovered by myself.

EQF level 8 | <https://www.unige.ch/campus/numeros/87/theses/>

1998 – Pázmány Péter Sétány 1/A, Budapest, Hungary

MSC IN PHYSICS (STATISTICAL PHYSICS AND BIOPHYSICS) – Eötvös Loránd University, Institute of Physics

Last semester attended at University of Oxford

1992 – Cluj, Romania

HIGH-SCHOOL GRADUATION – Báthory István Líceum

2019 – Barcelona, Spain

EIT HEALTH INJOY SUMMER SCHOOL – European Institute of Innovation and Technology / University of Barcelona

2016 – Lausanne, Switzerland
LABVIEW CORE I. – EPFL

2010 – Heidelberg, Germany
BSAC SD SCUBA DIVER – European Molecular Biology Laboratory Heidelberg - SubAqua Club

2009 – Woods Hole MA, United States
MBL WOODS HOLE NEURAL SYSTEMS AND BEHAVIOR SUMMER SCHOOL – Marine Biological Laboratory, Woods Hole, MA, USA

2008 – Plymouth, United Kingdom
MBL PLYMOUTH MICROELECTRODE TECHNIQUES FOR CELL PHYSIOLOGY SUMMER SCHOOL – Marine Biological Association, UK

2005 – Heidelberg, Germany
EMBO/EMBL PRACTICAL COURSE ON METHODS IN CELL BIOLOGY – EMBO and EMBL

2004 – St. Etienne de Tinee, France
PHYSBIO 2004 (NON-EQUILIBRIUM IN PHYSICS AND IN BIOLOGY) SUMMER SCHOOL – EWORK -PHYSBIO

2004 – Cluj, Romania
POST-GRADUATE PEDAGOGY MODULE – Babeş-Bolyai University

2003 – Dunakeszi, Hungary
C-GRADE GLIDER PILOT – MALEV Aero Club

2000 – Budapest, Hungary
PADI OW SCUBA DIVER – Galathea Diving Centre Hungary

● LANGUAGE SKILLS

Mother tongue(s): **HUNGARIAN**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C1	C2	C1	C1	C1
ROMANIAN	C1	C2	C1	C1	C1
GERMAN	B1	B1	B1	B2	A2
FRENCH	A1	A2	A1	A1	A1
RUSSIAN	A1	A1	A1	A1	

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

● DIGITAL SKILLS

Proficient User of MATLAB | Linux and Windows user | Proficiency in C and basic C++ | CorelDraw user | HTML | Basic Python and Labview

● PUBLICATIONS

The Bear Lake in Transylvania - the largest heliothermic lake of the planet with unexpected ecosystems (in German)

2021
Submitted for publication (Biologie unserer Zeit)

Floating islands and their bacterial mats (in French)

2021
In preparation

Facile isolation of sporopollenin exine from bee pollen

Nature Scientific Reports
<https://www.nature.com/articles/s41598-021-87619-8> - 2021

Dive calendars on exotic lakes in Transylvania

Fibervar Llc.
www.fibervar.com/science - 2021

Life around dormant volcanoes (in Hungarian)

GEO Hungary

<http://hantz.web.elte.hu/cikkfile/geo.pdf> – 2021

Popular science

Secrets of the Red Lake (in Romanian)

National Geographic Romania

<https://www.natgeo.ro/articole/romania/explorari-ro/37817-lacul-rosu-padurea-din-adancul-lacului> – 2021

Popular science

A Neglected Area: Methodological Preparedness of European University Teachers (in Hungarian)

Magyar Tudomány

https://mersz.hu/dokumentum/matud202010_13 – 2020

The translation of this article was published in 2021 in the Romanian language, in the periodical of the Romanian Academy of Sciences.

German and French translations are in progress.

http://hantz.web.elte.hu/cikkfile/Wieman_article_Pentek_Hantz_ro.pdf

Analyzing the Motion of Symmetric Tops Without Recurring to Analytical Mechanics

Frontiers in Physics

<https://www.frontiersin.org/articles/10.3389/fphy.2020.584294/full> – 2020

When the pseudoscience bites with the teeth of the science (in Hungarian)

Természet Világa

<https://termvil.hu/2019/11/20/amikor-az-altudomany/> – 2019

Popular science

Device for visualizing the forces arising during precession

2019

Hungarian Patent P1800078 and P1800079

Precession Intuitively Explained

Frontiers in Physics

<https://www.frontiersin.org/articles/10.3389/fphy.2019.00005/full> – 2019

Targeting neuronal and glial cell types with synthetic promoter AAVs in mice, non-human primates, and humans

Nature Neuroscience

<https://www.nature.com/articles/s41593-019-0431-2> – 2019

How Diverse Retinal Functions Arise from Feedback at the First Visual Synapse

Neuron

<https://pubmed.ncbi.nlm.nih.gov/29937281/> – 2018

Interactive Light Stimulus Generation with High Performance Real-time Image Processing and Simple Scripting

Frontiers in Neuroinformatics

<https://www.frontiersin.org/articles/10.3389/fninf.2017.00070/full> - 2017

Large Band-Edge Photocurrent Peak in Thick Methylammonium Lead Iodide Photosensors with Symmetric Metal Electrode

ACS Photonics

<https://pubs.acs.org/doi/10.1021/acsp Photonics.7b00270> - 2017

Whole-organism cellular gene-expression atlas reveals conserved cell types in the ventral nerve cord of *Platynereis dumerilii*

PNAS

<https://www.pnas.org/content/114/23/5878> - 2017

Efficient transduction and optogenetic stimulation of retinal bipolar cells by a synthetic adeno-associated virus capsid and promoter

EMBO Molecular Medicine

<https://pubmed.ncbi.nlm.nih.gov/25092770/> - 2014

Recording from Defined Populations of Retinal Ganglion Cells Using a High-Density CMOS-Integrated Microelectrode Array with Real-Time Switchable Electrode Selection

Journal of Neuroscience Methods

<https://pubmed.ncbi.nlm.nih.gov/22939921/> - 2012

Phase Separation in the Wake of Moving Fronts: Experiments and Simulations

Physical Review Letters

<https://journals.aps.org/prl/abstract/10.1103/PhysRevLett.96.088305> - 2006

Ion-Selective Membranes Involved in Pattern-Forming Processes

J. Phys. Chem. B

<https://pubs.acs.org/doi/10.1021/jp047081w> - 2004

Voronoi Diagrams Generated by Regressing Edges of Precipitation Fronts

J. Chem. Phys.

<https://aip.scitation.org/doi/abs/10.1063/1.1635358?journalCode=jcp> - 2004

Treasures and nonsenses of the Salon International des inventions de Genève (in Hungarian)

Transindex

<https://fotok.transindex.ro/?galeria=1085> - 2014

Popular science

Germinating Surfaces in Reaction-Diffusion Systems? - Experiments and a Hypothesis

J. Chem. Phys.

<https://aip.scitation.org/doi/10.1063/1.1505437> - 2002

Regular microscopic patterns produced by simple reaction-diffusion systems

Phys. Chem.-Chem. Phys.

<https://pubs.rsc.org/en/content/articlelanding/2002/cp/b107742b#!divAbstract> – 2002

Pattern formation in the NaOH+CuCl₂ reaction

J. Phys. Chem. B.

<https://pubs.acs.org/doi/10.1021/jp992456c> – 2000

Cover-page article.

● NETWORKS AND MEMBERSHIPS

EIT Food and EIT Health Alumni Networks

EU

Romanian Society for Bioinformatics

Romania

Hungarian Diving Association - Scientific branch

Hungary

Transylvanian-Hungarian Association for Technology and Science (EMT)

Romania

Association of Young Entrepreneurs

Hungary

● DRIVING LICENCE

Driving Licence: B | 2021 – 2031

● CONFERENCES AND SEMINARS

2020 – 2021 – online / Warsaw, Poland

European Institute of Innovation and Technology - Food, Seedbed Seminars

2020 – online / Vienna, Austria

European Institute of Innovation and Technology - Manufacturing, Ideation Connection Day

2018 – Heidelberg, Germany

The Human Microbiome (European Molecular Biology Laboratories)

2016 – Reutlingen, Germany

10th International Meeting on Microelectrode Arrays

2007 – Naples, Italy

Marine Genomics Europe Network Summer School

2004 – Palma de Mallorca, Spain

Dynamics Days 2004

2002 – Oxford, United Kingdom

Gordon Research Conference on Oscillations and Dynamic Instabilities in Chemical Systems

2001 – Mt. Holyoke, USA

Gordon Research Conference on Nonlinear Science

1999 – Les Houches, France

NATO-ASI - Structure and Dynamics of Polymer and Colloid Systems

● **RECOMMENDATIONS**

Istvan Brankovits – Dive advisor

Mr. Brankovits was my dive instructor and helps my research diving by providing advice.

Prof. Krzysztof Klincewicz – Innovation advisor

Professor Krzysztof Klincewicz was my business and innovation mentor during the EIT Food Jumpstarter and Seedbed projects.

Prof. Eörs Szathmáry – Scientific Superior

Prof. Eörs Szathmáry is my present scientific superior at my workplace.

● **HONOURS AND AWARDS**

2020

EIT Food Seedbed Grant, 2020 – European Institute of Innovation and Technology

8000 EUR for market establishment.

2019

EIT Food Jumpstarter Competition, 3rd prize, 2019 – European Institute of Innovation and Technology

5000 EUR for our startup company.

2019

COSME WORTH Grant, 2019 – COSME

10000 EUR for building the prototype of a radically new ergonomic chair.

2018

Diaspora Startup Grant, 2018 – POCU Romania

40000 EUR for building a production laboratory for an innovative, upcycling food supplement.

2010

FMI/SNF Postdoctoral Fellowship – Friedrich Miescher Institute (Novartis) / SNF

2009

Grass Fellowship – MBL Woods Hole, MA, USA

2007

FEBS Long-term Postdoctoral Fellowship – Federation of European Biochemical Societies

● **MANAGEMENT AND LEADERSHIP SKILLS**

Leading a startup company (2019-)

Our startup company has 3 regular and 3 external employees. We have deals with about a dozen commercial and scientific collaboration partners.

www.fibervar.com

Managing research teams (2014-)

Successfully coordinated several groups of scientists; our work resulted in several peer-reviewed or popular science publications.

Leading a group working on a pattern-forming reaction, and managing two teams investigating environmental microbiology problems.

Leading an NGO standing for minority rights in education (2004-2012)

Hungarian Student Union of Cluj-Kolozsvár-Klausenburg, President (1992)

Union of Hungarian High-school Students in Transylvania, President (1990-1992)

● **HOBBIES AND INTERESTS**

Climbing in high mountains

As a member of the "Szekelyek a magasban" expeditions, I climbed five times to the summit of the Mont Blanc.

Flying

Licence for gliders, hang-gliders, and paragliders. One parachute jump.
Actively paragliding.

Diving and swimming

My hobby is my work - I am employed as a scientist and research diver.
Regularly swimming, jogging and doing gymnastics.

Baking Kürtőskalács

I like to bake a sweet Hungarian specialty, the Kürtőskalács (Kurtosh Cake).

Playing flute

Just with my family and for myself.

Photography and video

I especially like underwater and aerial photography.

● **COMMUNICATION AND INTERPERSONAL SKILLS**

Teaching and publishing for professionals and for general audience

Teaching and keeping seminars at universities, research institutes and R&D companies. Publishing in peer-reviewed journals. Giving lectures for pupils and writing popular science articles.

Investigating the best ways to explain science. We are in touch with the experts of the SEI (Science Education Initiative) led by the Nobel-laureate Physicist Karl Wieman. We published in several languages on the Wieman method.

Dealing with people in scientific collaboration and business

Organizing international teams including scientists with diverse backgrounds.

Doing business in different environments such as Eastern and Western Europe. Lecturing business psychology in my Innovation Management course.

● **PRESS ECHO**

Selected articles about my activity

[Research diving] <https://transylvanianow.com/below-the-frozen-red-lake/>

[Education] [https://eletmod.transindex.ro/?](https://eletmod.transindex.ro/?cikk=28684&hogyan_javithatunk_az_egyetemi_oktatok_szakmodszertani_kepzesen?)

[cikk=28684&hogyan_javithatunk_az_egyetemi_oktatok_szakmodszertani_kepzesen?](https://eletmod.transindex.ro/?cikk=28684&hogyan_javithatunk_az_egyetemi_oktatok_szakmodszertani_kepzesen?)

[NGO, Social responsibility] <https://index.hu/kulfold/zaklatrom/>

[Innovation] <https://transylvanianow.com/transylvanian-success-at-european-innovation-competition/>

[innovation] <https://kronikaonline.ro/szines/>

[erdelyi_kutatok_is_aranyermet_kaptak_talalmanyukert_genfben#](https://kronikaonline.ro/szines/erdelyi_kutatok_is_aranyermet_kaptak_talalmanyukert_genfben#)

[Science] https://en.wikipedia.org/wiki/Hantz_reactions

[Popular science] <https://eletmod.transindex.ro/?cikk=20899>

[Stratosphere research] <https://csillagtura.ro/a-vilagur-kapujaban-jartunk/>

[Science] <https://www.erdon.ro/erdon-helyi-hirek/bioinformatikai-mdszerek-az-oktatsban-2211150/>

[Research diving] <https://www.facebook.com/watch/?v=1022621314846631>