

The Dead Sea Research Institute
First global scientific summit

Life in Extreme Conditions – A Lesson from Nature
January 8-10, 2018

The Dead Sea Region

The Dead Sea is a unique region with seminal global importance. It is the lowest inhabited place on earth, about 430m below sea level. It is also the most saline lake known to humankind, with about 32% w/v of a salt mixture. The region is part of the Great Rift Valley, which extends from Western Syria to the East African Lakes, comprising the longest geological phenomenon on the face of the earth and the pathway of civilization.

The Dead Sea area is inimitable in its extraordinary combination of nature's basic elements – Air, Sun, Earth (Mud) and Water – unparalleled anywhere else on earth. This yields a unique micro and macro biological environment, geography, geology, climate, minerals, flora, fauna, life in extreme conditions, as well as the cradle of human culture, ancient industry, therapeutic and cultural heritage.

The Dead Sea Research Institute was established in Masada to explore and study all the aspects of this unique region. So far, more than 30 areas of research and technology have been identified based on active research groups, publications, applied research, and ongoing R&D. However, we have only begun to identify the wealth of possible topics.

The purpose of our global scientific summit is to assemble diverse experts and intellects from around the world to identify, verify, and discuss research and technology development for the region. Topics may include, but are not limited to, new materials, extremophiles biology, nanotechnology, energy, geophysics, seismology, sociology, anthropology, disaster mitigation, environmental studies, health and microbiome, etc.

The participants, brainstorming at this special place and point in time, will focus on *Life in Extreme Conditions* – the translational science for the wellbeing of the planet and humanity – as a lesson from nature.

Join us live! <https://goo.gl/hD4rD8>

Monday, January 8th

10:00 – 10:30 Greetings & Opening Remarks

Dov Litvinoff- Mayor, Tamar Regional Council in Israel's Southern District

Prof. Joseph Klafter- President, Tel Aviv University (TAU)

Prof. Yona Chen- ICA Board of Directors

Introduction of:

Prof. Ehud Gazit- Chairperson, Executive Research Steering Committee

Prof. Mauro Ferrari- Chairperson, International Board of Governors
Dead Sea Research Institute (DSRI)

10:30 – 10:50 Treasures & Uniqueness of the Dead Sea: An Overview

Dr. Mira Marcus-Kalish- VC Medical Informatics HBP, Director, International Research Affairs, TAU

10:50 – 11:15 Coffee Break

11:15 – 13:00 Session I: Health & Biomedical Translational Research

Chairman: **Prof. Ehud Gazit**- Faculty of Life Sciences, TAU Executive Council member, Academic Director of the BLAVATNIK CENTER for Drug Discovery, Head of the Laura Schwartz-Kipp Institute for Biotechnology

Advanced Human Studies & Treatment: Why at the Dead Sea?

Dr. Marco Harari, MD- Joint Research Institute on Climatotherapy for Skin Diseases at the Dead Sea, Hadassah Medical Center and Dead Sea & Arava Science Center

Heat Acclimatization Mediated Cardio-Protection: A Lesson from Diastolic Chamber Stiffness Post Coronary Bypass Surgery

Prof. Michal Horowitz- Laboratory of Environmental Physiology, Hebrew University
Prof. Arthur Pollak, MD- Cardiology, Hadassah Medical Center

The Microbiome Core Facility – A New Horizon for Agriculture Medicine & Science Education at the Dead Sea

Prof. Zvi Bentwich, MD- Director, Masada Branch, Arava Dead Sea Science Center, Head, Center for Tropical Diseases and AIDS, Ben Gurion University

Dead Sea Skin Research – New Findings in Treatments & Products

Dr. Zeev Ma'or- CTO R&D, AHAVA - Dead Sea Laboratories

Desert Plants: "Green Pesticides" and Novel Metabolites for Drug Discovery

Dr. Rivka Ofir- Dead Sea & Arava Science Center and Ben-Gurion University



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13:00 – 14:30 Lunch

14:30 – 16:30 **Panel Discussion: A Lesson from Nature – The Take Home Message**
Moderator: Prof. Yoav Henis- VP R&D TAU

Panelists

Prof. Antonello Bonci, MD- Scientific Director, NIDA, NIH, USA

Prof. Lene Juel Rasmussen- Managing Director, Center for Healthy Aging,
Department of Cellular and Molecular Medicine, Copenhagen University, Denmark

Prof. Flavia Marinelli- Fermentation Chemistry and Biotechnology, University
Insubria, Varese, Italy

Prof. Eliot Siegel- VC Research Information Systems, University of Maryland
School of Medicine, Department of Diagnostic Radiology and Nuclear Medicine, USA

Prof. Patrick Hunziker, MD- Deputy Head of the Clinic for Intensive Care
Medicine, University Hospital of Basel, Switzerland

17:00 – 18:30 Cocktail Reception at **Kibutz Ein-Gedi**

20:00 Dinner

Tuesday, January 9th

09:30 – 11:00 **Session II: Life in Extreme Conditions – Lessons from Nature**
Chairman: Prof. Yaron Oz- Rector, TAU

Dead Sea Fault: A Unique Global Site

Prof. Zvi Ben-Avraham- Israel Academy of Science

Earthquake Fishing in the Dead Sea: How to Characterize Rare Invisible Processes in Real Time

Dr. Gilles Hillel Wust-Bloch- School of Earth Sciences, TAU

Life under Extreme Conditions: Diurnal Activity in Small Desert Rodents

Prof. Noga Kronfeld-Schor- Chair, School of Zoology, Head, Ecological and
Evolutionary Physiology Laboratory, Faculty of Life Sciences, TAU

The DEadSEa Research VEnue (DESERVE) Project - Lessons for the Future

Prof. Pinhas Alpert- Department of Geosciences, TAU



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11:00 – 11:30 Coffee Break

11:30 – 13:00 **Panel Discussion: Lessons from Nature**

Moderator: **Prof. Zeev Levin**- The Goldemberg Chair - Atmospheric Physics, Faculty of Exact Sciences, TAU

Panelists

Prof. Jonathan Trent- Director, OMEGA Global Initiative; Biomolecular Engineering, UC Santa Cruz, NASA, USA

Prof. Fritz Geiser- Director, Centre for Behavioral and Physiological Ecology (BPE), School of Environmental and Rural Science, New England University, Australia

Dr. Eiichi Fukuyama- Director, Earthquake and Tsunami Research Division, National Research Institute for Earth Science and Disaster Resilience (NIED), Tsukuba, Japan

13:00 – 14:30 Lunch

14:30 – 16:00 Masada Nowadays Excavation

A guided tour with **Dr. Guy Stiebel**- TAU Institute of Archeology

16:00 – 16:30 Coffee Break

16:30 – 17:30 **Session III: Environment as Cross Boundary Collaboration – A Bridge Between Conflicts**

Chairman: **Prof. Raanan Rein**- Vice President, TAU

Migrating and Resident Birds Coping with Extreme Conditions

Prof. Yossi Leshem- Zoology School, Faculty of Life Sciences, TAU, Founder & Director, International Center for the Study of Bird Migration at Latrun

Reconstructing History from Fragments: Cross-Disciplinary Research of the Dead Sea Scrolls

Dr. Noam Mizrahi- Acting Chair, Department of Biblical Studies, Faculty of Humanities

The Time-Proof Consistency of Creating Semantic Fields in Hebrew

David Ben Shabat- Head, Center for Regional Thinking, Director, DSRI

19:00 Dinner followed by a Night Tour of the **Botanical Gardens**

Wednesday, January 10th

09:30 – 11:30

Session IV: Science – Where to in the Next Decade

Chairman: **Prof. Mauro Ferrari**- President and CEO, Houston Methodist Research Institute, Director, Institute for Academic Medicine at Houston Methodist Hospital, Executive Vice President, Houston Methodist Hospital, USA

Trends in 21st Century Science

Prof. Alan Leshner- Chief Executive Officer, Emeritus, AAAS and former Executive Publisher, *Science*, USA

Information Theory and the Future of Computation

Dr. Dario Gil- Vice President of AI and IBM Q, USA

Qyo Vadis Modern Biology?

Prof. Mart Saarma- Institute of Biotechnology, University of Helsinki, Finland

Precision Medicine – Reality or a Dream in the 21st Century?

Prof. Dan Peer- Managing Director, Center for Translational Medicine, TAU

12:00 – 12:30

Session V: Science – Future Collaboration

NSF- Existing Collaborations & Future Opportunities

Dr. Rita Rodriguez- Director NSF Center, USA

Open discussion and presentation of research proposals

12:30 – 13:30

Lunch

13:30

Guided Tour of the [Dead Sea Sinkholes](#)

Return to Tel Aviv

Join us live! <https://goo.gl/hD4rD8>

