

Abraham Haim

Light at Night (LAN) - Needs for a Healthy Environment

Speakers Profile

Education Background

1964-1969 Hebrew University of Jerusalem
Zoology Genetics B.Sc. & M.Sc.
1971-1976 Hebrew University of Jerusalem
Zoology, Environmental Physiology Ph.D.
1972-1974 Hebrew University of Jerusalem
High School Teaching Diploma Education
1978-1979 University of Pretoria, Mammal
Research Institute Ecophysiology
Post Doctoral Research

Employment

2001 – 2007; 2008 - 2009 Dean of Faculty
Faculty of Science and Science Education,
University of Haifa
2000 – 2002; 2010 - present Elected Chairman
Department of Natural Resource and Environ-
mental Management, University of Haifa
1996-present Full Professor
Department of Biology, Science Education, Uni-
versity of Haifa at Oranim Chronobiology, Eco-
physiology, Fire Ecology, Daily Rhythms

Research Activity

So far I have published 140 articles in pre-re-
ferred journals and 25 articles were published
as conference proceedings. I have also been a
guest editor of five issues of journals. Major re-
search interest: Thermoregulation, Chronobiolo-
gy, Seasonality, Non-shivering Thermo-genesis,
Daily Rhythm, Rodent Population in Post-fire
Habitat, Light Pollution and Ecological Restora-
tion. I have organized several national (10) and
International conferences (5).

As well as several Tuitional Activities, interna-
tional Lectures, Seminar activities and Publica-
tions.

Abstract

Timing is essential for the organisms fitness
to their natural environment, therefore it is
not surprising to discover that terrestrial or-
ganisms have an endogenous clock which is
entrained by light/dark cycles, (photoperiod
changes, the main Zeitgeber) thus anticipating
the daily and seasonal environmental changes



to come. Light/dark cycles are the expression
of our plant rotation on its axis while changes
in photoperiod express the rotation of our plant
around the sun. The most dramatic environ-
mental change that took place world-wide,
chasing the darkness away, started some 130
years ago with the development of the incan-
desced bulb, creating the phenomena of light at
night (LAN). In the last decades the introduction
of so called „environmentally friendly illumi-
nation“ (EFI) increased light intensity mainly
of short wave length illumination (SWLI) which
suppresses pineal melatonin secretion at night
thus, disrupting our biological rhythms and the-
refore should be treated as a source of polluti-
on.

After the extension of the light-phase with its
benefits, we would not like to return to the live
in the dark so what can we do? The solution
should be „sustainable illumination“, illumina-
tion that takes into account are environmental,
economical and social aspects. In regards to
environmental issues minimal use of SWLI,
regulating illumination in public places by mo-
nitoring light intensity and levels of SWLI, and
looking for new technologies for EFI not based
on SWLI. In regards to humans we can decre-
ase the negative impact of LAN while for con-
servation we will protect nocturnal animals.

Abraham Haim Ph.D.
The Israeli Center for Interdisciplinary Research in
Chronobiology
Department of Biology
University of Haifa
Mount Carmel
Haifa 31905
Israel
ahaim@research.haifa.ac.il