

The 17th Annual International Conference on Dose-Response

PRECONDITIONING
IN BIOLOGY
AND MEDICINE

Mechanisms and
Translational Research

The Annual Meeting of the
International **DOSE-RESPONSE** Society
www.Dose-Response.org

Conference Directors: Edward J. Calabrese, Ph.D., Paul Kostecki, Ph.D

April 17-18, 2018
University of Massachusetts
Amherst, MA

Threshold
Adaptive
Bidirectional
Biphasic
Hormetic
Non-Monotonic
U/J Shaped
Linear



*Approved for CPH Recertification by the
National Board of Public Health Examiners*

INTERNATIONAL DOSE-RESPONSE SOCIETY MEMBERSHIP

The **INTERNATIONAL DOSE-RESPONSE SOCIETY** is a professional society designed to enhance understanding of the nature of the dose response and its implications for science and society. Those Individuals with a professional interest in these areas are invited to join the Society.

Applications for membership can be found at www.dose-response.org. Annual membership rates are as follows:
Corporate Membership \$5000 (US),
Sustaining Membership \$1000 (US),
Individual Membership - 1yr. \$125 (US),
Individual Membership - 2yr. \$225 (US),
Retiree Membership - 1yr. \$75 (US),
Retiree Membership - 2yr. \$125 (US),
Post-Graduate Membership (up to three years post-graduation) - 1yr. \$75 (US),
Post-Graduate Membership (up to three years post-graduation) - 2yr. \$125 (US),
Student Membership - 1yr. \$10 (US) and
Student Membership - 2yr. \$15 (US).

Members will receive a 25% reduction in registration fees to **The 2018 Dose Response Conference, Adaptive Responses in Biology and Medicine**, the Annual Meeting of the International Dose-Response Society.

To Become a Member, Visit
www.dose-response.org

A growing number of scientists, including toxicologists, pharmacologists, biostatisticians, epidemiologists, occupational and environmental medical researchers and others have begun to display considerable interest in the topic of hormesis, a dose response phenomenon characterized by a low dose stimulation and a high dose inhibition. While there are many professional societies that have a general interest in dose response relationships, none explicitly is devoted to the topic of understanding the nature of the dose response in general and hormesis in particular. The diversity of professional societies that may consider dose response issues, including hormesis, is nonetheless quite broad ranging from the agricultural to the biomedical and clinical sciences. However, nearly without exception, these societies tend to be strongly organized around professional advancement and not focused on specific scientific concepts. This makes the issue of hormesis one of diffuse interest across a broad range of professions. The present situation represents a major obstacle for the integrated assessment of the dose response in general and hormesis in particular. In order to provide intellectual and research leadership on the topic of hormesis, a professional association was created in 2005 called the International Dose-Response Society.

The Society is dedicated to the enhancement, exchange, and dissemination of ongoing global research efforts in the field of hormesis. In addition, the Society also strongly encourages the assessment of the implications of hormesis for such diverse fields as toxicology, risk assessment, risk communication, medicine, numerous areas of biomedical research, and all other biological disciplines including relevant engineering domains dealing with the dose response.

The International Dose-Response Society is administered by the School of Public Health & Health Sciences at the University of Massachusetts at Amherst.

If you would like additional information about the society including information on becoming a member, please contact Alfred Sorensen at sorensen@ehs.umass.edu or visit the society webpage www.dose-response.org.

PLATFORM PRESENTATIONS - Tuesday, April 17, 2018

Day 1 Moderator - **JAMES GIORDANO**, *Georgetown University, Washington, DC*

8:00AM [Welcome / Conference Overview](#)

EDWARD CALABRESE, *Conference Director, UMass/Amherst*

8:30AM – 11:00AM

PLENARY SESSION

[Carbon Monoxide and Medical Applications](#)

Augustine Choi, *Weill Cornell Medicine, NY*

[Photobiomodulation: Mechanisms, Dose Response, and Applications to the Brain](#)

Michael Hamblin, *Harvard University, Cambridge, MA*

10:00AM BREAK

[Enhancing the Amplitude and Duration of Hormetically Induced Resilience: Workshop Summary October 2017](#)

Walter Kozumbo, *Retired US Air Force*

Rehana Leak, *Duquesne University, Pittsburgh, PA*

11:00AM - Noon

Session I: PRECONDITIONING IN CARDIOVASCULAR DISEASE AND HORMESIS

[Gaseous Transmitters and Hormesis in Vascular Cells](#)

William Durante, *University of Missouri, Columbia, MO*

[Cardiovascular Protection via Endogenous Agents](#)

Sruti Shiva, *University of Pittsburgh, PA*

Noon - 1:30PM LUNCH Amherst Room, 10th Floor

1:30PM - 3:00PM

Session II: NEUROLOGICAL DISEASE AND HORMESIS

[Zinc Preconditioning Enhances Hippocampal Stem Cell Proliferation and Provides Behavioral Resiliency in a Model of Traumatic Brain Injury](#)

Cathy W. Levenson, *Florida State University, Tallahassee, FL*

[Oxidative Stress, Senescence and Hormesis in the Aging Brain](#)

Mina Konigsberg, *Universidad Autonoma Metropolitana (UAM), Departamento de Ciencias de la Salud (Health Sciences Department, Mexico)*

[Clinical Psychology and Hormesis: A Developmental Perspective](#)

Robert Liu, *Brown University, Providence, RI*

3:00PM BREAK

3:30PM - 5:00PM

Session III: DIETARY STRESS AND HORMESIS

[Fasting Mimicking Diets, Regeneration and Rejuvenation](#)

Valter Longo, *University of Southern California, Los Angeles, CA*

[Intermittent Fasting and Medical Applications](#)

James Mitchel, *Harvard University, Cambridge, MA*

[Day 1 - Closing Remarks](#)

5:30PM - 6:30PM POSTER SESSION AND SOCIAL Hadley Room Foyer, 10th Floor

6:30PM DINNER Hadley Room, 10th Floor

PLATFORM PRESENTATIONS - Wednesday, April 18, 2018

Day 2 Moderator - **COLIN SEYMOUR**, *McMaster University, Hamilton, Canada*

8:30AM Day 2 Opening Remarks

9:00AM – 11:30

Session IV: OTHER BIOMEDICAL DEVELOPMENTS

Skeletal Muscle Mitochondria and ER Stress Mediate Hormetic Mechanisms that Regulate Whole Body Glucose Metabolism

E. David Abel, *University of Iowa, Iowa City, IA*

Transcranial Direct Electrical Stimulation and Human Performance

Marom Bikson, *The City College of New York, NY*

10:00AM BREAK – HOTEL CHECK OUT

Stem Cells and Clinical Applications

Paul George, *Stanford University, Stanford, CA*

Transposons and Adaptation

Jill A. Kreiling, *Brown University, Providence RI*

11:30 - 1:00PM

LUNCH Amherst Room, 10th Floor

1:00PM - 3:00PM

Session V: RADIATION: ENVIRONMENT AND THERAPY

Low Dose Radiation and Translational Medicine

Lu Cai, *University of Louisville, KY*

Radon and Health Benefits

Benjamin Frey, *Franc Rodel, Germany*

Dose Rate in Radiation Risk Assessment and Therapy

Doug Boreham, *North Ontario School of Medicine, Sudbury, Ontario, Canada*

Barbara McClintock, Jumping Genes and Genomic Instability; Back to the Future

Carmel Mothersill, *McMaster University, Hamilton, Canada*

3:00PM

CONFERENCE IN-PERSPECTIVE

Colin Seymour, *McMaster University, Hamilton, Ontario, Canada*

CALL FOR POSTERS

We invite you to submit an ABSTRACT for poster presentation at
The 17th Annual International Conference on Dose-Response

PRECONDITIONING IN BIOLOGY AND MEDICINE Mechanisms and Translational Research

APRIL 17-18, 2018

University of Massachusetts at Amherst

Sponsored by

International DOSE-RESPONSE Society
www.Dose-Response.org

*The conference will address a multidisciplinary and mechanistic focus
in toxicology, medicine, pharmacology, radiation, risk assessment for
dose-response relationships.*

AREAS OF INTEREST

PRE- POST-CONDITIONING:

Alzheimer's Disease/Dementia
Parkinson's Disease
Depression and PTSD
Concussions/Traumatic Brain Injury
Improving Surgical Outcomes
Stroke/Cardiovascular Disease
Diabetes
Glaucoma
Stem Cell Transplantation Therapy

HEALTHY LIFESTYLES, AGING

AND LIFE EXTENSION:
Intermittent Fasting
Exercise
Chemical/Nutritional Supplements
Low Dose Radiation and Longevity
Adaptive response-based cosmetics
ENHANCING HUMAN PERFORMANCE:
Cognition
Endurance, Strength and Speed
Fatigue/Jet Lag: Prolong Onset/
Speed Up Recovery
Wound Healing Acceleration - skin,
tendon, muscle, bone, and vascular

Enhancing Healthy Living and Performance

Please visit conference website

www.dose-response.org

For abstract submission guidelines as well as information
about the conference and the Dose-Response society
email Conference Coordinator, Mary B. Glavin at

mbglavin@umass.edu

*Deadline for abstract submissions for the
Dose-Response 2018 Conference poster session is*

JANUARY 31, 2018

Conference Directors :

Edward J Calabrese, Ph.D., Paul T. Kostecky, Ph.D.

AREA HOTEL INFORMATION

Registrants are responsible for making their own hotel arrangements.
(We recommend you make reservations early)

Amherst	Single/Double	Hadley	Single/Double
Campus Center Hotel (UMass) (413) 549-6000	\$135	Econo Lodge (413) 582-7077	\$79-149
Allen House Inn (413) 253-5000	\$75-150	Hampton Inn (413) 586-4851	\$119-179
Amherst Motel (413) 256-8122	\$59-85	Holiday Inn Express (413) 582-0002	\$119-200
Black Walnut Inn (413) 549-5649	\$108-159	Howard Johnson (413) 586-0114	\$85-179
Lord Jeffrey Inn (413) 253-2576	\$129-259	Norwottuck Inn (413) 587-9866	\$159-179
University Motor Lodge (413) 256-8111	\$70-150	Quality Inn (413) 584-9816	\$69-145
Deerfield	Single/Double	Northampton	Single/Double
Deerfield Inn (413) 774-5587	\$170-270	Autumn Inn (413) 584-7660	\$99-180
Red Roof Inn (413) 665-7161	\$75-125	Best Western (413) 586-1500	\$69-149
Holyoke	Single/Double	Clarion Hotel (413) 586-1211	\$100-235
Country Inn & Suites (413) 533-2100	\$89-189	Hotel Northampton (413) 584-3100	\$145-180
Holyoke Holiday Inn (413) 534-3311	\$120-150		

* For those attendees wishing to stay at the Campus Center Hotel where the conference will be held, telephone the hotel directly at (413) 549-6000. IDENTIFY THE CONFERENCE AS HOTEL BLOCK DR418C.

University Conference Services does not guarantee the accuracy of any of the rates listed above.

FOR CONFERENCE INFORMATION

Please contact the conference coordinator Mary B. Glavin
413-545-1239 • mbglavin@umass.edu

LOCATION AND TRAVEL INFORMATION

The conference will take place in the Murray D. Lincoln Campus Center, **University of Massachusetts at Amherst**, located in the scenic Connecticut River Valley. Amherst is served by major airlines through **Bradley International Airport** in Windsor Locks, Connecticut (about 1 1/4 hours by car) and **Logan Airport** in Boston (about 2 1/2 hours by car). Rental cars and bus service are available from both airports.

There are two services that provide shuttle service to and from both airports, Amtrak and bus stations to the University of Massachusetts - Seemo Shuttle Service and Valley Transporter.

Seemo Shuttle Service - call (800) 908-2829 or (413) 586-1120 or visit www.seemoshuttle.com

The Valley Transporter - RESERVATIONS ARE REQUIRED, call (800) 872-8752 or (413) 253-1350 or visit www.valleytransporter.com.

REGISTRATION

All Registrations for the conference must be received by the University Conference Services no later than **April 3, 2018** in order to avoid late registration fee of \$50.

To register for the conference please fill out and return the accompanying registration form to:

Conference Registration Office - CS15-158

**810 Campus Center
University of Massachusetts
1 Campus Center Way
Amherst, MA 01003**

Phone: **413-577-8102**; Fax: **413- 577-8130**

For further information contact us at:

INTERNATIONAL DOSE-RESPONSE SOCIETY

Phone: **413-545-3164**; Fax: **413-545-4692**

Email: mbglavin@umass.edu

www.dose-response.org

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April 17-18, 2018 • University of Massachusetts, Amherst, MA

R E G I S T R A T I O N F O R M

To Register: Form should be received on or before **April 3, 2018** with full payment.

Mail or fax to: **Conference Registration Office - C18216**

810 Campus Center

University of Massachusetts

Amherst, MA 01003

Phone: 413-577-8102 • Fax: 413- 577-8130

For Office Use _____
Case No. _____
Ref. No. _____
Date _____
Payment _____
Confirmed _____

Mr. Mrs. Ms. Dr.

First: _____ MI: _____ Last: _____

Title: _____ Company: _____

Address: _____

City: _____ State: _____ Zip: _____ Country: _____

Telephone: _____ Fax: _____

Email: _____

Registration: Includes all sessions and refreshment breaks

<i>Full Two Days</i>	\$399
<i>Full Two Days for International Dose-Response Society Members*</i>	\$299
<i>Government and Academic Rate</i>	\$199
<i>Government and Academic Rate for International Dose-Response Society Members*</i>	\$149
<i>Student Rate</i>	\$99
<i>Student Rate for International Dose-Response Society Members*</i>	\$74

**Must be a member at the time of registration to receive the International Dose-Response Society Members rate*

Sub Total _____

Hot Buffet Lunch: \$26 each day Tuesday Wednesday

Lunch Total _____

Hot Buffet Dinner: \$36 Tuesday

Dinner _____

Note: All registrations received after **April 3, 2018**, will be assessed a \$50 late fee

Late Fee _____

Total _____

Visa Amex Master Card Diners Discover Check payable to: UMass/Conference Services C18216

Card Number: _____ Expiration Date: _____

Name on Card (print): _____ 3 digit CVV/Security Code: _____

Signature (all charges must be signed): _____

Hotel Reservations: CONFERENCE ATTENDEES ARE RESPONSIBLE FOR THEIR OWN HOTEL RESERVATIONS

Encumbered Purchase Orders will be accepted from institutions and agencies for the purpose of pre-registration only. Full payment including those pre-registrations secured by P.O. must be remitted on or before the on-site registration. Non-compliance will result in a \$35 processing fee for any resulting billings. Phone registrations will not be accepted. Checks must be redeemable at US banks. Any processing fees will be billed to the registrant. Cancellations made by the close of business (5:00pm EST) on April 10, 2018, will receive a full refund minus a \$60 cancellation fee and any administrative fees. There will be no refunds for cancellations made after the close of business on April 10, 2018. Registrations should be received on or before April 3, 2018. After April 3, 2018, a \$50 late fee will be assessed.

For more conference information contact: INTERNATIONAL DOSE-RESPONSE SOCIETY

Phone: 413-545-3164 • Fax: 413-545-4692 • Email: mbglavin@umass.edu

Online Conference Registration: umass.irisregistration.com