

The 11th Annual International Conference on

DOSE-RESPONSE 2012:

Implications for Toxicology, Medicine, and Risk Assessment

*The Annual Meeting of the
International Dose-Response Society*

April 24-25, 2012

University of Massachusetts, Amherst, MA

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

**THRESHOLD • ADAPTIVE • BIDIRECTIONAL • BIPHASIC
HORMETIC • NON-MONOTONIC • U/J-SHAPED • PARADOXICAL**

Continuing Education Credits will be offered through the University of Massachusetts

DEAR COLLEAGUE,

The Dose-Response Conference addresses some of the most critical challenges facing the field of toxicology, pharmacology, radiation biology and medicine today, that is, the significance of the biological effects of low level exposures. Toxicology is in rapid transition from that of a high dose hazard assessment profession to one that addresses the nature of more realistic exposures, which are predominantly in the low dose zone. Knowledge of low dose effects is becoming a driving force in the field of risk assessment and chemotherapeutics. This conference provides a significant opportunity to bring together leading scientists across a broad range of biological disciplines to seek common understandings on how biological systems respond to low level stresses and their implications within society. One of the critical goals of the conference is to recognize that professionals in different fields of biology have utilized different terminologies for similar appearing dose response phenomena. These terms include adaptive, bidirectional, dual effects, opposite effects, biphasic, hormetic, non-monotonic, u-shaped, j-shaped, and paradoxical. The convergence of scientists from multiple disciplines on this topic is designed to provide a greater interactive focus on the topic of low dose responses and hopefully prevent further professional/academic isolation with respect to language, concept and interpretation of low dose effects. The conference will also provide the most current advances in the nature of the dose response with respect to chemical and radiation induced stresses as well as a host of effects of pharmaceutical agents that have profound biomedical and risk assessment implications. It is our hope that you share the belief that determining the nature of the dose response in the low-dose zone will drive the future of toxicology, pharmacology and risk assessment and will take the opportunity to attend this conference on **DOSE-RESPONSE 2012: IMPLICATIONS FOR TOXICOLOGY, MEDICINE, AND RISK ASSESSMENT**

Edward J Calabrese, Ph.D.

Paul T. Kostecki, Ph.D.

Conference Directors

INTERNATIONAL DOSE-RESPONSE SOCIETY

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.

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).

As part of the INTERNATIONAL DOSE-RESPONSE SOCIETY membership, each member will receive a subscription to the e-journal Dose-Response, which is a peer-reviewed quarterly journal. In addition, there is a Society Newsletter developed for the membership. Members will receive a 25% reduction in registration fees to Dose-Response 2012: Implications for Toxicology, Medicine, and Risk Assessment, the Annual Meeting of the International Dose-Response Society.

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

PLATFORM PRESENTATIONS

TUESDAY, APRIL 24, 2012

Morning 8:30AM - Noon

WELCOME

BIOMEDICAL SESSION

Phytocannabinoid Metabolic Reprogramming: Explaining Medicinal Properties through Dose-Response – an Old Treatment for a Modern World

Alistar Nunn, *Imperial College London, United Kingdom*

Stress Adaptation to Enhance Neural Progenitor Cells Viability

Guanghu Wang, *Georgia Health Sciences University, Augusta, GA*

A Computational Simulation: The Effect of Signaling Strength on Tumor's Growth and Shrinkage

Hava Siegelmann, *University of Massachusetts, Amherst, MA*

Postconditioning Hormesis: Mild Stress Stimulates Recovery in Cells

FAC Wiegant, *Utrecht University, The Netherlands*

PLENARY TALK

Food Safety and Chemophobia

Gordon Gribble, *Dartmouth College, Hanover, NH*

LUNCH

Noon

CONFERENCE CONTINUING EDUCATION CREDITS

Approval is pending from the University of Massachusetts Department of Continuing and Professional Education.

CPEUs will be awarded at the rate of one credit per 10 hours of successful conference attendance.

Those applying for CPEUs from the University of Massachusetts must

- 1) check off the box on the conference registration form in this booklet and include the \$50 fee,**
- 2) record their attendance by signing in and out at the session doors with a picture ID,**
- 3) fill out and return the UMass registration form that will be included in the conference registration packet you will receive at conference check in.**

Transcripts will be mailed in June.

PLATFORM PRESENTATIONS (cont.)

TUESDAY, APRIL 24, 2012

Afternoon 1:00PM – 5:00PM

PLENARY TALK

For Nuclear Accidents, What is the Appropriate Dose-Rate Limit for Remedial Actions?

Jerry Cuttler, Cuttler & Associates Inc., Mississauga, ON, Canada

TOXICOLOGY / RISK ASSESSMENT I

Beyond Dose-Response: Concentration-Responses and Food

*Jaap Hanecamp, Roosevelt Academy, Middelburg, The Netherlands and University of Massachusetts, Amherst, MA
Aalt Bast, Maastricht University Medical Centre, The Netherlands*

Chemical Hormesis in Plant Pathogenic Fungi and Fungus-Like Organisms

Carla Domenica Garzon, Oklahoma State University, Stillwater, OK

Dose Response Molecular Responses to Asbestos and Silica in Human Lung Cells

Brooke Mossman, University of Vermont, Burlington, VT

Pseudoscientific Aspects of Fine Particulate Matter (PM_{2.5}) Epidemiology, 1993-2012

James Enstrom, University of California, Los Angeles, CA

Tannins: Hormetic Longevity-Triggers or Just Energy-Allocators

Nadine Saul, Humboldt-Universität zu Berlin, Germany

POSTER SESSION AND SOCIAL

5:00PM

DINNER

6:30 PM

WEDNESDAY, APRIL 25, 2012

Morning 8:30AM - Noon

TOXICOLOGY / RISK ASSESSMENT II

Gene Expression Patterns and Adaptive Response as Mechanistic Background of Hormesis

Christian E.W. Steinberg, Humboldt-Universität zu Berlin, Germany

Promotion of Metabolic Health and Lifespan by Transiently Increasing Oxidative Stress

Michael Ristow, University of Jena, Germany

Dose-Response Assessment for Arsenic: A Case Study for why the LNT Doesn't Work

Barbara Beck, Gradient, Cambridge, MA

RADIATION

Low Dose Stresses and Gene Expression in *Drosophila melanogaster*

Michael Antosh, Brown University, Providence, RI

Chronic Radiation Exposure Induces Cellular Adaptive Response in Interventional Cardiologists

Gian Luigi Russo, Institute of Food Sciences, National Research Council, Avellino, Italy

Recent Radiation Biology and Low Dose Effects

Brant Ulsh, Colorado State University, Cincinnati, OH

LUNCH

Noon

Afternoon 1:00PM - 3:00PM

RADIATION (Continued)

Effect of Low Doses of Low-LET Radiation on the Innate Anti-tumor and Inflammatory Reactions in Radioresistant and Radiosensitive Mice

Ewa Nowosielska, Military Institute of Hygiene and Epidemiology, Warsaw, Poland

On the Nature of Radiation-Induced Bystander Signals

Carmel Mothersill, McMaster's University, Hamilton, ON

Biological Responses Induced by Low Dose Diagnostic Radiation Exposure

Doug Boreham, McMaster's University, Hamilton, ON

Hormesis and the Adaptive Response

Colin Seymour, McMaster's University, Hamilton, ON

CALL FOR POSTERS

We invite you to submit an
ABSTRACT
for poster presentation at
*The 11th Annual International
Conference on*
**DOSE-RESPONSE 2012:
IMPLICATIONS FOR
TOXICOLOGY, MEDICINE,
AND RISK ASSESSMENT**

*Sponsored by
The International
Dose-Response Society*

APRIL 24-25, 2012

University of Massachusetts at Amherst

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

Please visit conference website

www.dose-response.org

For abstract submission guidelines as well as information about the conference and the Dose-Response society

Or email Conference Coordinator,
Denise Leonard at

dleonard@schoolph.umass.edu

Deadline for abstract submissions for the Dose-Response 2011 Conference poster session is April 2, 2012.

**DEADLINE FOR SUBMISSION
April 2, 2012**

E-mail to dleonard@schoolph.umass.edu

CALL FOR PAPERS

DOSE-RESPONSE:

An International Journal

*Dose-Response is indexed in Pub Med,
Web of Science and most other indexes.*

AREAS OF INTEREST

- *Adaptive • Bidirectional • Biphasic*
 - *Hormetic • Non-Monotonic*
 - *Yerkes-Dodson Law (Psychology) • U-Shaped*
 - *J-Shaped • Subsidy-Stress Gradient (Ecology)*
 - *Reverse Dose-Responses*
-
- Molecular mechanisms
 - Pharmacological effects
 - Chemical and radiation toxicology
 - Risk assessment implications
 - Low-dose modeling
 - Evolutionary foundations
 - Ecological effects
 - Clinical/therapeutic effects
 - Psychological/behavioral responses
 - Bioengineering processes
 - Exercise science
 - Epidemiology of low doses
 - Industrial hygiene
 - Legal implications

*Please visit our website for more Information
and Instructions for Authors*

www.dose-response.com

For further Information contact

Edward J. Calabrese, Ph.D.

Environmental Health Sciences

Morrill I, N344

University of Massachusetts

Amherst, MA 01003

Phone: (413) 545-3164

FAX: (413) 545-4692

edwardc@schoolph.umass.edu

or Denise Leonard, Managing Editor

Environmental Health Sciences

University of Massachusetts

Phone: (413) 545-1239

dleonard@schoolph.umass.edu

The 11th Annual International Conference
**DOSE-RESPONSE 2012: IMPLICATIONS FOR
 TOXICOLOGY, MEDICINE, AND RISK ASSESSMENT**
The Annual Meeting of the International Dose-Response Society
April 24 - 25, 2012
 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 9, 2012** with full payment.

Mail or fax to: **University Conference Services - CS12-129**

918 Campus Center

University of Massachusetts

Amherst, MA 01003

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

Mr. Mrs. Ms. Dr.

First: _____ MI: _____ Last: _____

Title: _____ Company: _____

Address: _____

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

Telephone: _____ Fax: _____

Email: _____

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

Registration: Includes all sessions and refreshment breaks

Full Two Days\$399

Full Two Days for International Dose-Response Society Members*\$299

Government and Academic Rate.....\$199

Government and Academic Rate for International Dose-Response Society Members*\$149

Student Rate.....\$99

Student Rate for International Dose-Response Society Members*\$74

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

Conference Continuing Education Credits: Approval is pending from the University of Massachusetts Department of Continuing and Professional Education. CPEUs will be awarded at the rate of one credit per 10 hours of successful conference attendance. Those applying for CPEUs from the University of Massachusetts must 1) record their attendance by signing in and out at the session and workshop doors with a picture ID and 2) fill out and return the registration form that will be included in the conference registration packet you will receive at conference check in. Transcripts will be mailed in June.

CEU Credits Administrative Charge (for UMass Continuing and Professional Education Credits)..... \$50

Hot Buffet Lunch: \$25 each day Tuesday Wednesday

Hot Buffet Dinner: \$35 Tuesday

Note: All registrations received after **April 9, 2012**, will be assessed a \$50 late fee

Sub Total _____

Lunch Total _____

Dinner _____

Late Fee _____

Total _____

Visa Amex Master Card Diners Discover Check payable to: UMass/Conference Services CS12-129

Card Number: _____ Expiration Date: _____

Name on Card (print): _____

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 at the on-site registration. Non-compliance will result in a \$35 processing fee for any resulting billings. Phone in registrations will not be accepted. Cancellations made on or before April 17, 2012 will receive a full refund minus a \$35 cancellation fee. Checks must be redeemable at US banks. Any processing fees will be billed to registrant. In order to process refunds we will need your personal social security number or your business identification number. There will be no refunds for cancellations made after April 17, 2012.

For more conference information contact: INTERNATIONAL DOSE-RESPONSE SOCIETY

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

A121615
University Conference Services CS12-129
918 Campus Center
University of Massachusetts
Amherst, MA 01003

NON PROFIT ORG.
U.S. POSTAGE
PAID
PERMIT NO. 2
AMHERST, MA 01002

The 11th International Conference

**DOSE-RESPONSE 2012:
IMPLICATIONS FOR
TOXICOLOGY, MEDICINE,
AND RISK ASSESSMENT**

*The Annual Meeting of the
International Dose-Response Society*

April 24-25, 2012

University of Massachusetts, Amherst, MA

www.dose-response.org

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

Amherst	Single/Double	Hadley	Single/Double
Allen House Inn (413) 253-5000	\$75-150	Econo Lodge (413) 582-7077	\$79-149
Amherst Motel (413) 256-8122	\$59-85	Hampton Inn (413) 586-4851	\$119-179
Black Walnut Inn (413) 549-5649	\$108-159	Holiday Inn Express (413) 582-0002	\$119-200
Campus Center Hotel (UMass) (413) 549-6000	\$109	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 1811C.

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

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 11, 2011 in order to avoid late registration fee of \$50.

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

University Conference Services - CS12-129

918 Campus Center

University of Massachusetts

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: dleonard@schoolph.umass.edu

www.dose-response.org

FOR CONFERENCE INFORMATION Please contact the conference coordinator: **Denise Leonard 413-545-1239**