

The 7th Annual International Conference

DOSE-RESPONSE 2008:

Implications for Toxicology, Medicine, and Risk Assessment

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

April 29 - 30, 2008

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**

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 2008: IMPLICATIONS FOR TOXICOLOGY, MEDICINE, AND RISK ASSESSMENT

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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 new professional association has been created 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 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 2008: 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 29, 2008

Morning

8:30am – Noon

Session I: PLENARY

Moderator: Jonathan Borak

A Perspective on the Scientific, Philosophical, and Policy Dimensions of Hormesis

George Hoffmann, *Holy Cross College, Worcester, MA*

Superoxide Dismutase and Bell-Shaped Dose Response Curves

Joe McCord, *University of Colorado Health Sciences Center, Denver, CO*

Luncheon

Noon

Afternoon

1:00pm – 5:30pm

Session II: BIOMEDICAL

Moderators: Bobby R. Scott, *Lovelace Respiratory Research Institute, Albuquerque, NM*

Role of Thioredoxin in Synaptogenesis Evoked by Preconditioning Hormesis

Mike Chuang C. Chiueh, *Taipei Medical University, Taipei City, Taiwan*

Heme Oxygenase-1 and Carbon Monoxide as Novel Anti-Inflammatory Molecules

Leo E. Otterbein, *Harvard Medical School, Boston, MA*

Mild Heat Stress Slows Down Aging, Increases Wound Healing, and Enhances Angiogenesis in Human Cells

Suresh Rattan, *University of Aarhus, Denmark*

A Summary of Dose-Response Models and Estimation in Developmental Toxicity Studies

Daniel L. Hunt, *St. Jude Children's Research Hospital, Memphis, TN*

Shesh N. Rai, *University of Louisville, Louisville, KY*

Chin-Shang Li, *University of California, Davis, CA*

Separating Stimulant and Impairing Functions in Hormetic Profiles with Independent Component Analysis (ICA)

David B. Newlin, *RTI International, Baltimore, MD*

Phillip A. Regalia

Edward J. Calabrese, *University of Massachusetts, Amherst, MA*

Hormetic and Non-Hormetic Dose-Responses in Emotional Neuroscience

David M. Diamond, *University of South Florida, Tampa, FL*

Philip R. Zoladz, *University of South Florida, Tampa, FL*

Is Possible for LDR Able to Induce Hormetic Effect on Normal Cell Growth, but not Human Tumor Cell Growth? Clinical Implication

Lu Cai, *University of Louisville School of Medicine, Louisville, KY*

Genetic Dissection of Hormesis: *Ponce d'elegans*

Thomas E. Johnson, Ph.D., *University of Colorado at Boulder, Boulder, CO*

SOCIAL & DINNER

6:30PM

Amherst Room, 10th Floor, Campus Center

PLATFORM PRESENTATIONS (cont.)

WEDNESDAY, APRIL 30, 2008

Morning

8:30am – Noon

Session III: TOXICOLOGY

Moderators: Suresh Rattan, *University of Aarhus, Denmark*

Antibiotics Have Dual Modes of Action

Julian Davies, *University of British Columbia, Vancouver BC Canada*

The Diverse Effect of Arsenic on Human DNA Repair: Implications for Risk Assessment

Peter Sykora, *Deakin University, Melbourne, Australia*
Elizabeth T. Snow, *University of Tasmania, Launceston, Tasmania, Australia*

The Polyacetylenes Falcarinol and Falcarindiol Affect Stress Responses in Myotube Cultures in a Biphasic Manner

Jette Feveile Young, *University of Aarhus, Tjele, Germany*
Lars P. Christensen, *University of Aarhus, Tjele, Germany*
Peter K. Theil, *University of Aarhus, Tjele, Germany*
Niels Oksbjerg, *University of Aarhus, Tjele, Germany*

U-shaped Dose-responses at Low Doses: Explanation with a New Model for in vitro Neoplastic Transformation

Helmut Schollnberger, *University of Salzburg, Salzburg, Austria*

Hormesis without Cell Killing in a Competing-Risks Model of Carcinogenesis

Louis Anthony (Tony) Cox, Jr., *Cox Associates, Denver, CO*

Complex Mixture-Associated Hormesis and Toxicity: The Case of Leather Tanning Industry

Giovanni Pagano, *Italian National Cancer Institute, Mercogliano, Italy*
Guiseppe Castello, *Italian National Cancer Institute, Mercogliano, Italy*
Marialuisa Gallo, *Campania Regional Environmental Protection Agency, Naples, Italy*
Ilaria Borriello, *Federico II Naples University, Naples, Italy*
Marco Guida, *Federico II Naples University, Naples, Italy*

Luncheon Noon

Afternoon

1:00pm – 4:30pm

Session IV: BIOTERRORISM, LOW DOSE EFFECTS AND HORMESIS

Moderators: Nicholas Dainiak, *Bridgeport Hospital, Bridgeport, CT*
Carmel Mothersill, *McMaster University, Hamilton, ON, Canada*

Local, Regional and National Responses for Medical Management of a Radiological/Nuclear Incident

Nicholas Dainiak, *Bridgeport Hospital, Bridgeport, CT*

Low-Dose-Radiation-Activated Natural Protection against Cancer and Other Diseases

Bobby R. Scott, *Lovelace Respiratory Research Institute, Albuquerque, NM*

Mechanisms of Bystander Effects which Could Underlie Hormetic Effects Following Low Dose Exposure

Carmel Mothersill, *McMaster University, Hamilton, ON, Canada*

The Cutaneous Radiation Reaction at the Molecular Level

Victor Meineke, *Bundeswehr Institute of Radiobiology, Munich, Germany*

Discussion Panel: Science and Values in Bioterrorism Response - Is the Science Useful or Important?

Wayne Jonas, Chair, *Samueli Institute for Information Biology, Alexandria, VA*

Nicholas Dainiak, *Bridgeport Hospital, Bridgeport, CT*

Victor Meineke, *Bundeswehr Institute of Radiobiology, Munich, Germany*

Carmel Mothersill, *McMaster University, Hamilton, ON, Canada*

Deborah Oughton, *Norwegian University of Life Sciences, Aas, Norway*

Bobby R. Scott, *Lovelace Respiratory Research Institute, Albuquerque, NM*

Colin Seymour, *McMaster University, Hamilton, ON, L8S2C1, Canada*

CALL FOR PAPERS

The 8th International Conference

DOSE-RESPONSE 2009: IMPLICATIONS FOR TOXICOLOGY, MEDICINE, AND RISK ASSESSMENT

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

APRIL 28-29, 2009

University of Massachusetts at Amherst

- *Adaptive* • *Bidirectional* • *Biphasic* • *Hormetic* • *Non-Monotonic* • *Yerkes-Dodson Law (Psychology)*
- *U-Shaped* • *J-Shaped* • *Subsidiy-Stress Gradient (Ecology)* • *Reverse Dose-Responses*

TOPICS WILL INCLUDE:

- 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, Abstract Submission Guidelines and Abstract Submission

www.dose-response.org

For further Information contact

Edward J. Calabrese, Ph.D. or Paul T. Kostecki, 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

DEADLINE FOR SUBMISSION - December 1, 2008

Submit online or e-mail to dleonard@schoolph.umass.edu

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 TOXICOLOGY, MEDICINE, AND RISK ASSESSMENT**
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 April 29 - 30, 2008
 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 14, 2008** with full payment.
 Mail or fax to: **University Conference Services - CS08-63**

**918 Campus Center
 University of Massachusetts
 Amherst, MA 01003
 Phone: 413-545-0172 • Fax: 413- 545-0050**

For Office Use _____
Case No. _____
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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*

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*

Hot Buffet Lunch: \$25 each day Tuesday Wednesday **Lunch Total** _____

Hot Buffet Dinner: \$35 Tuesday **Dinner** _____

Note: All registrations received after April 14, 2008, will be assessed a \$50 late fee **Late Fee** _____

Total _____

Visa Amex Master Card Diners Discover Check payable to: UMass/Conference Services CS08-63

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, 2008 will receive a full refund minus a \$35 cancellation fee. Cancellations after April 17, 2008 will be charged the \$35 cancellation fee plus any food service charge. 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 22, 2008.

For more conference information contact: INTERNATIONAL DOSE-RESPONSE SOCIETY
Phone: 413-545-3164 • Fax: 413-545-4692 • Email: dleonard@schoolph.umass.edu

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	\$75-175	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	\$82-114	Howard Johnson (413) 586-0114	\$89-179
Lord Jeffrey Inn (413) 253-2576	\$129-259	Norwottuck Inn (413) 587-9866	\$65-129
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	\$149-200	Autumn Inn (413) 584-7660	\$99-180
Red Roof Inn (413) 665-7161	\$79-116	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		

University Conference Services does not guarantee the accuracy of any of the rates listed above. (Updated 6/2007)

*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 761.

** Special Conference Rate - \$59 per night for the Quality Inn and \$89 per night for the Hampton Inn. When making your reservation, state that you are attending the Dose-Response Conference and give the group code, 100597, for the Quality Inn or ECH for the Hampton Inn. Reservations for the Hampton Inn can also be made by going to www.hadley.hamptoninn.com, selecting the dates desired and typing in the group code ECH.

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

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 14, 2008 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 - CS08-63
918 Campus Center
University of Massachusetts
Amherst, MA 01003
Phone: 413-545-0172; Fax: 413- 545-0050

For further information contact us at:
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