

The 18th Annual International Conference on Dose-Response

*PRECONDITIONING*  
**IN BIOLOGY**  
**AND MEDICINE**

Adaptive Responses/  
Preconditioning

*The Annual Meeting of the*  
International DOSE-RESPONSE Society  
[www.Dose-Response.org](http://www.Dose-Response.org)

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

**April 16-17, 2019**  
**University of Massachusetts**  
**Amherst, MA**

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



*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](http://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 2019 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](http://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](mailto:sorensen@ehs.umass.edu) or visit the society webpage [www.dose-response.org](http://www.dose-response.org).

# PLATFORM PRESENTATIONS - Tuesday, April 16, 2019

Day 1 Moderator - **EDWARD J. CALABRESE**, *Environmental Health, University of Massachusetts, Amherst, MA*

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

**EDWARD J. CALABRESE**, Conference Director, *UMass/Amherst*

## PLENARY SESSION

**8:30AM**

[Hormesis: It's Impact on Biology, Toxicology, and Medicine](#)

Walter J. Kozumbo, *Hormesis Project, University of Massachusetts, Amherst, MA*

**9:15AM**

[Radiation Hormesis: Its Significance and Applications](#)

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

**10:00AM** BREAK

**10:30AM**

[Metabolic Management of Cancer](#)

Thomas Seyfried, *Biology Department, Boston College, Chestnut Hill, MA*

**11:15AM**

[From Jumping Genes to Genomic Instability; the Contributions of Barbara McClintock to Low Dose Radiation Biology and Toxicology](#)

Carmel Mothersill, *Department of Medical Physics and Applied Radiation Sciences, McMaster University, Hamilton, Ontario, Canada*

**NOON - 1:30PM** **LUNCH** Amherst Room, 10th Floor Campus Center

## Session I: EXERCISE

**1:30PM**

[Digitizing Physical Activity Dose: Step Counting and Cadence Tracking](#)

Catrine Tudor-Locke, *Department of Kinesiology, School of Public Health, UMass, Amherst, MA*

**2:00PM**

[Exercise Induced hormesis in Skeletal Muscle Health](#)

Ji Li, *Laboratory of Physiological Hygiene and Exercise Science, School of Kinesiology, University of Minnesota, Minneapolis, MN*

## Session II: INTERMITTENT FASTING

**2:30PM**

[Harnessing the Benefits of Intermittent Fasting by Targeting Lysosomes](#)

Abhinav Dwan, *Department of Internal Medicine, Washington University, St. Louis, MO*

**3:00PM** BREAK

**3:30PM**

[Caloric Excess or Restriction and the Human Inflammasome](#)

Michael Sac, *Center for Molecular Medicine, NHLBI, NIH, Bethesda, MD*

**5:30PM - 6:30PM** **POSTER SESSION AND SOCIAL** 10th Floor Campus Center

**6:30PM** **DINNER** Amherst Room, 10th Floor Campus Center

Dinner Speaker: **PAUL SHELBY**

[The Selby-Russell dispute regarding the non-reporting of critical data in the Mega-Mouse Experiments of Drs. William and Liane Russell that spanned many decades: What happened, Current status, and Some ramifications.](#)

# PLATFORM PRESENTATIONS - Wednesday, April 17, 2019

Day 2 Moderator - **TBA**

## Session III: ENHANCING RESILIENCE

**8:00AM**

### Biological Resilience

Rehana K. Leak, *Graduate School of Pharmaceutical Sciences, Duquesne University, Pittsburgh, PA*

**8:30AM**

### Remote Ischemic Conditioning: Trials, Tribulations and Clinical Translation

Karin Przyklenk, *Cardiovascular Research Institute, Wayne State University School of Medicine, Detroit, MI*

**9:00AM**

### Remote Ischemic Conditioning for Stroke and Vascular Dementia: an Exercise Mimetic?

David Hess, *Department of Neurology, Medical College of Georgia, Augusta, GA*

**9:30AM**

### Endoplasmic Reticulum Stress: Its Role in Adaptive Response

Danilo Medinas, *Cellular and Molecular Biology, University of Chile, Santiago, Chile*

**10:00AM BREAK AND HOTEL CHECK OUT**

**10:30AM**

### Biomarker Development for Aerobic Exercise: Applications for Assessing Performance and Pathology

Michael Moto, *McGowan Institute for Regenerative Medicine, University of Pittsburgh, Pittsburgh, PA*

**11:00AM**

### Stress Inducible Evolution from Bacteria to Cancer

Susan M. Rosenberg, *Dept. of Molecular and Human Genetics, Baylor College of Medicine, Houston, TX*

**11:30AM**

## CONFERENCE CLOSING REMARKS

Colin Seymour, *Department of Medical Physics and Applied Radiation Sciences, McMaster University, Hamilton, Ontario, Canada*

**NOON - 2:00PM**

**LUNCH** Amherst Room, 10th Floor Campus Center

# CALL FOR POSTERS

We invite you to submit an ABSTRACT for poster presentation at

*The 18th Annual International Conference on Dose-Response*

## **PRECONDITIONING IN BIOLOGY AND MEDICINE Adaptive Responses/Preconditioning APRIL 16-17, 2019**

**University of Massachusetts at Amherst**

*Sponsored by*

**International DOSE-RESPONSE Society**

[www.Dose-Response.org](http://www.Dose-Response.org)

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

### **TOPICS WILL INCLUDE:**

#### **PRE- POST-CONDITIONING:**

Alzheimer's Disease/Dementia  
Parkinson's Disease  
Depression and PTSD  
Concussions/Traumatic Brain Injury  
Improving Surgical Outcomes  
Stroke/Cardiovascular Disease  
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

### ***Call For Abstracts***

Please visit conference website

<http://dose-response.org/annual-conference>

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](mailto:mbglavin@umass.edu)

*Deadline for abstract submissions for the  
Dose-Response 2019 Conference poster session is*

**JANUARY 31, 2019**

*For further information contact:*

**Edward J Calabrese, Ph.D.**

Environmental Health Sciences

University of Massachusetts Amherst, MA 01003

Phone: (413) 545-3164 • FAX: (413) 545-4692

[edwardc@schoolph.umass.edu](mailto:edwardc@schoolph.umass.edu)

### **AREA HOTEL INFORMATION**

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

<b>Amherst</b>	<b>Single/Double</b>	<b>Hadley</b>	<b>Single/Double</b>
<b>*Campus Center Hotel* (UMass)</b>		Econo Lodge	
(413) 549-6000	\$145	(413) 582-7077	\$79-149
Allen House Inn		Hampton Inn	
(413) 253-5000	\$75-150	(413) 586-4851	\$119-179
Amherst Motel		Holiday Inn Express	
(413) 256-8122	\$59-85	(413) 582-0002	\$119-200
Black Walnut Inn		Howard Johnson	
(413) 549-5649	\$108-159	(413) 586-0114	\$85-179
Lord Jeffrey Inn		Norwottuck Inn	
(413) 253-2576	\$129-259	(413) 587-9866	\$159-179
University Motor Lodge		Quality Inn	
(413) 256-8111	\$70-150	(413) 584-9816	\$69-145
<b>Deerfield</b>	<b>Single/Double</b>	<b>Northampton</b>	<b>Single/Double</b>
Deerfield Inn		Autumn Inn	
(413) 774-5587	\$170-270	(413) 584-7660	\$99-180
Red Roof Inn		Best Western	
(413) 665-7161	\$75-125	(413) 586-1500	\$69-149
<b>Holyoke</b>	<b>Single/Double</b>	Clarion Hotel	
Country Inn & Suites		(413) 586-1211	\$100-235
(413) 533-2100	\$89-189	Hotel Northampton	
Holyoke Holiday Inn		(413) 584-3100	\$145-180
(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 by **March 18, 2019** and IDENTIFY THE CONFERENCE AS **HOTEL BLOCK DR419C** to secure a room at the rate of \$145/night.

*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](mailto: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](http://www.seemoshuttle.com)

**The Valley Transporter** - RESERVATIONS ARE REQUIRED, call (800) 872-8752 or (413) 253-1350 or visit [www.valleytransporter.com](http://www.valleytransporter.com).

### **REGISTRATION**

All Registrations for the conference must be received by the University Conference Services no later than **April 2, 2019** 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 - CS19117**

**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](mailto:mbglavin@umass.edu)

[www.dose-response.org](http://www.dose-response.org)

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**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 2, 2019** with full payment.

Mail or fax to: **Conference Registration Office - CS19117**

**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

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

**Sub Total** \_\_\_\_\_

**Hot Buffet Lunch:** \$26 each day  Tuesday  Wednesday

**Lunch Total** \_\_\_\_\_

**Hot Buffet Dinner:** \$36  Tuesday

**Dinner** \_\_\_\_\_

**Note:** All registrations received after **April 2, 2019**, will be assessed a \$50 late fee

**Late Fee** \_\_\_\_\_

**Total** \_\_\_\_\_

Visa  Amex  Master Card  Diners  Discover  Check payable to: UMass/Conference Services CS19117

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 filled to the registrant. Cancellations made by the close of business (5:00pm EST) on April 9, 2019, 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 9, 2019. Registrations should be received on or before April 2, 2019. After April 2, 2019, 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](mailto:mbglavin@umass.edu)**

**Online Conference Registration: [umass.irisregistration.com](http://umass.irisregistration.com)**