



## Introduction

Radiation mass casualties that occur in urban areas are likely to be partial-body exposures. Treatment based on whole-body dose assessments may not be appropriate for partial-body exposures, especially when local doses are high.

Actively proliferating systems such as bone marrow, the gastrointestinal tract and skin are among organs critically affected by radiation. The current concept for treating radiation injuries is to provide supportive care and available countermeasures to the critically exposed cohort. Treatment depends on knowledge of an individual's injury due to the absorbed dose and dose distribution.

The Armed Forces Radiobiology Research Institute's May 5-6 Workshop provides a forum for discussing diagnostic biomarkers, inter-laboratory comparisons, dose assessment approaches, as well as treatment strategies for partial-body radiation exposures. We aim to develop a consensus on the best way forward to address the requirement for partial-body diagnostic biomarkers.

Workshop lectures include oral and poster presentations. Topics include potential scenarios of radiation mass casualties, biodosimetry emergency preparedness, emergency medical management, the need for diagnostic markers of partial-body exposures and dose assessment, dose assessment to critical organs impacting acute survival and development of statistical models for partial-body exposure assessment, and expert panel discussions.

Abstracts have been published on the workshop website. Following the workshop, a consensus paper/meeting report will be developed, anticipating that participants will reflect government, academia, regulatory, and industry communities.

## Local organizing committee

Dr. T.C. Pellmar  
Dr. W.F. Blakely  
Dr. J. Kalinich  
Dr. P.G.S. Prasanna  
Dr. M.B. Grace  
Dr. N. Ossetrova  
Dr. M. Moroni

## Program committee

Dr. T.C. Pellmar  
Dr. W.F. Blakely  
Dr. P.G.S. Prasanna

For additional details, see the workshop's website:  
[www.afri.usuhs.mil/pb\\_rad\\_workshop/index.shtml](http://www.afri.usuhs.mil/pb_rad_workshop/index.shtml)



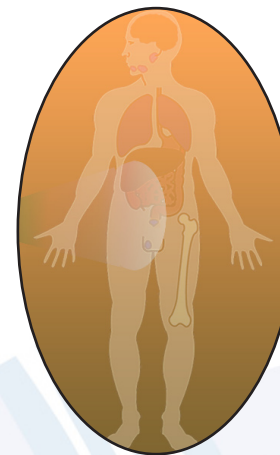
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April 2008

# Partial-Body Radiation Diagnostic Biomarkers and Medical Management of Radiation Injury Workshop

May 5-6, 2008

Sponsored by the  
**Armed Forces**  
Radiobiology Research Institute



## Agenda

### Monday, May 5

0730 Registration and continental breakfast

0830 Welcome and administrative remarks

#### SESSION I RADIATION DOSE ASSESSMENT MODELS FOR PARTIAL-BODY EXPOSURE

0900 A review of partial-body radiation accidents  
*R.E. Goans, PhD, MJW Corp., Amherst NY;  
Radiation Emergency Assistance Center/  
Training Site, Oak Ridge, Tennessee, USA*

0930 *In vitro* and animal models of partial-body dose  
exposure: Use of cytogenetic and molecular  
biomarkers for assessment of inhomogeneous  
dose exposures and radiation injury  
*W.F. Blakely, PhD, Armed Forces Radiobiology  
Research Institute, Bethesda, Maryland, USA*

1000 Break (posters)

1020 Statistical models for partial-body dose  
assessment: Gaps and approaches  
*A. Wojcik, PhD, Stockholm University, Sweden*

#### SESSION II PARTIAL-BODY EXPOSURE OF CELL RENEWAL SYSTEMS AND SURVIVABILITY: SKIN

1050 A new therapeutic approach of radiation burns  
by mesenchymal stem cell transplantation  
*J.M. Bertho, PhD, Institut de Radioprotection et  
de sûreté Nucléaire, Fontenay aux roses cedex,  
France*

1120 Role of damage to the cutaneous system in  
radiation-induced multi-organ failure  
*V. Meineke, MD, Bundeswehr Institute of  
Radiobiology, Munich, Germany*

1150 Lunch

#### SESSION III BONE MARROW AND BLOOD

1330 Cytogenetic assays for partial-body radiation  
accidents  
*D.C. Lloyd, PhD, UK Health Protection  
Agency, Centre for Radiation, Chemical and  
Environmental Hazards, Chilton, UK*

1400 Automated sample preparation and  
interlaboratory cooperative network for  
conducting the dicentric assay  
*P.G.S. Prasanna, PhD, Armed Forces  
Radiobiology Research Institute, Bethesda,  
Maryland, USA*

1430 Molecular biomarkers of bone marrow injury  
*J.P. Chute, MD, Duke University Medical Center,  
Durham, North Carolina, USA*

1500 Break (posters)

#### SESSION IV GUT

1520 Citrulline: a serological parameter for  
monitoring epithelial small bowel cancer  
treatment-induced injury  
*L.C.H.W. Lutgens, MD, PhD, Maastricht  
Radiotherapy and Oncology Clinic, Maastricht,  
the Netherlands*

1550 Novel sphingolipid biomarkers of gut injury  
induced by radiation  
*J. Saba, MD, PhD, Children's Hospital Oakland  
Research Center, Oakland, California, USA*

#### SESSION V ORGAN INJURY (LUNG, KIDNEY, LIVER, THYROID)

1620 Biomarkers for renal radiation injury  
*E.P. Cohen, MD, Medical College of Wisconsin,  
Milwaukee, Wisconsin, USA*

1650 Adjourn

1800 Working workshop dinner

### Tuesday, May 6

#### SESSION V (CONTINUED)

0730 Registration and continental breakfast

0800 Biodosimetry in skin and mitigation in lung  
following radiation exposure  
*R.P. Hill, Ontario Cancer Center/Princess  
Margaret Hospital, Toronto, Canada*

#### SESSION VI NOVEL APPROACHES

0830 Genetic molecular markers for radiation  
exposure: Applications of the gene expression  
bioassay  
*M.B. Grace, PhD, Armed Forces Radiobiology  
Research Institute, Bethesda, Maryland, USA*

0900 Improvement of radiation dose assessment  
using multiple-protein expression and  
hematological profiles  
*N.I. Ossetrova, PhD, Armed Forces Radiobiology  
Research Institute, Bethesda, Maryland, USA*

0930 Use of optically stimulated luminescence (OSL)  
in radiation dosimetry  
*E.G. Yukihiro, PhD, Physics Department,  
Oklahoma State University, Stillwater,  
Oklahoma, USA*

1000 Break (posters)

1020 Electron paramagnetic resonance biodosimetry  
in teeth and fingernails  
*A. Romanyukha, PhD, Naval Dosimetry Center,  
Bethesda, Maryland, USA*

#### SESSION VII CURRENT APPROACHES FOR TREATMENT OF PARTIAL-BODY EXPOSURES

1050 Medical treatment of radiological casualties  
*R.E. Goans, PhD, MJW Corp., Amherst NY;  
Radiation Emergency Assistance Center/  
Training Site, Oak Ridge, Tennessee, USA*

1120 Contingency planning for triage, supportive  
care, and transplantation  
*D.J. Weisdorf, PhD, University of Minnesota,  
Minneapolis, Minnesota, USA*

1150 Lunch

1310 Roundtable discussion—Partial-body dose  
assessment: Implications for treatment;  
conference summary

1530 Adjourn