

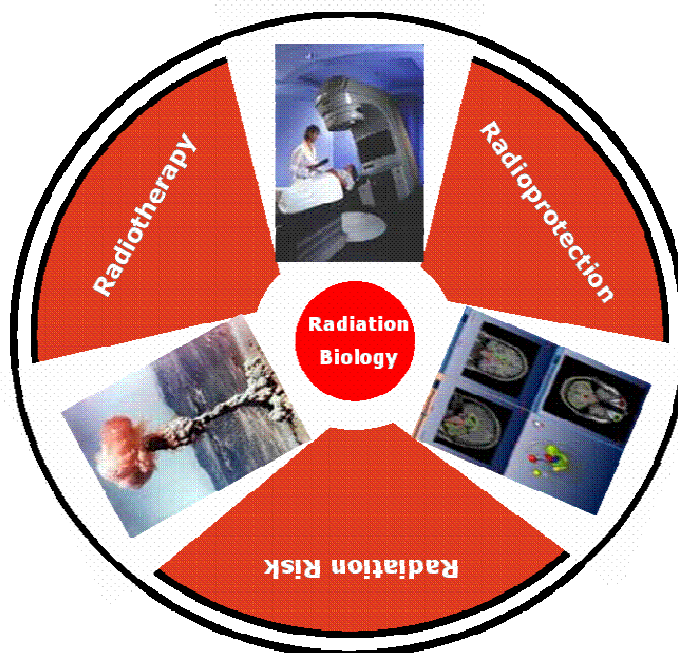


RADIATION SCIENCE TODAY

A Quarterly eNewsletter

published by

INDIAN SOCIETY FOR RADIATION BIOLOGY



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www.freewebs.com/isrbenewsletter/

Radiation Science Today

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CONTENTS

1. Profile of

Dr. Bobby Scott, Lovelace Respiratory Research Institute,
Albuquerque, NM, USA

2. From Archives of Radiation Sciences

**Changes in the villous pattern of the human jejunum associated
with heavy radiation damage**

Gut, Year: 1966, Vol.: 7(2), Page: 149–153.

3. News and views

Radiation and Cancer Biology
Nuclear Technology and Safety
Science and Society

4. Article of the Issue

5. Open Access Article Series/Reviews

6.

Letters from the Readers

7. Forthcoming Conferences and Workshop of ISRB

ICRB 2010, Shri Ramachandra Medical College and Research
Institute, Shri Ramachandra University, Porur, Chennai, Nov. 15-
17, 2010

Emerging Techniques, Tools and Probes in Radiobiology (**ETTPR-2010**) A Post Conference Workshop of (ICRB-NISRRO 2010) Nov. 18, 2010, Anupuram, Indira Gandhi Centre for Atomic Research, Kalpakkam, India

8. Upcoming Meetings/Workshops

9. New Life Members of ISRB

10. Awards and Honors to ISRB Members

11. Recent Publications/Patents of ISRB Members

12. Career Forum

Positions and Fellowships

Grants / Awards

Articles related to career issues

Important web sites

13. Useful Links

14. Important Journals

15. Recent Books

16. Contents of Indian Journal of Radiation Research

17. Notice Board

Editorial Board

Executive Council (2009-11), Indian Society for Radiation Biology

1. PROFILE of

Dr Bobby Scott

Bobby Scott, Ph.D. is a senior scientist in the Aerosol and Respiratory Dosimetry Program at Lovelace Respiratory Research Institute (LRRRI), Albuquerque, NM, USA. Dr. Scott was born in Minden, Louisiana, USA in December 1944 just 4 days before Christmas. He took interest in reading at a very young age and could always be found during the summer reading books in the shade of a giant pecan

tree in the front yard of the family home, where he, his sister (Renetta), and mom (Ethel) lived. Passers-by often raised the question “*why waste your time reading rather than engaging in manual [hard] work.*” Unfortunately work opportunities in the very small town were very limited during that period of time, pointing out the need for a good education.



Dr. Bobby Scott

A Photo appeared in article by Megan Fleming in Fall 2010 issue of Breathe:

http://www.lrrri.org/downloads/Breathe_Magazine_Fall_10.pdf.

Permission granted by LRRRI for reprinting the photo

While attending Webster High School in Minden he became quite interested in science, mathematics, music (school band), and art (oil painting and sketching) due in part to having excellent teachers. During his senior year, he was **winner of first prize** in a regional science fair for his rather complicated project that focused on *beta-radiation-induced mutations (abnormal phenotypes) in the progeny of fruit flies*. Science fair judges were quite surprised that during that early time (sixties) a high school student could carry out such a project. He was quite proud to have represented his graduating class as its valedictorian.

After starting colleague at Southern University, Baton Rouge, LA, USA, he became even more interested in mathematics and science (especially the physical sciences) and may have taken all of the advanced-level mathematics and physics courses available. While at Southern University he also took interest in Jazz Piano (self taught, starting in high school). He spent much of his spare time in one of the freely-available piano rooms in the Music Department building playing jazz (discouraged during that time but now highly encouraged by the University).

After graduating from Southern University with a B.S. Degree in physics in 1966, he entered graduate studies at the University of Illinois (Urbana Campus), initially in the Nuclear Engineering Program; he later switched to their physics program and received his M.S. Degree in physics in 1969. His Ph.D. thesis work was also conducted at the University of Illinois in the biophysics program under thesis advisor Professor Howard Ducoff. Professor Ducoff was one of the first investigators of radiation hormesis (insect studies) and is still

actively following the developments in the field. The term, **radiation hormesis**, refers to the *beneficial effects of low-dose radiation (e.g., suppression of cancer)*. His thesis work initially presented some challenges in that it was theoretical, and it was carried out under an advisor who was an experimentalist. However, this limitation was compensated for by having support from theoreticians then at the university (Eric Jakobsson and Heinz Von Foerster) and at Argonne National Laboratory (George Sacher and Sylvanus Tyler). The Ph.D. thesis was titled "*A Mechanistic State Vector Model for the Interaction of Ionizing Radiation with Cells*" and was typed by hand on a personal mechanical typewriter. Because the thesis involved many equations that employed Greek symbols, each symbol had to be hand-loaded when used and then replaced by hand with the next symbol used. Further, at that time, there were no personal computers and computations were achieved via first punching computer cards (boxed of cards with punched holes [code instructions]) that had to be delivered to a computing center on campus and read by a special device (card reader) in order to carry out the complex mathematical computations.

He performed his postdoctoral work at Argonne National Laboratory in a group (Janus Group) headed by Dr. E. John Ainsworth. "**JANUS**" [after a Roman mythology god] was the name of the reactor used to expose cells and animals to mixed neutron and gamma-ray fields. Many animal studies were being carried out at Argonne and one of Dr. Scott's first challenges was to predict the future work loads (monthly) for the pathology staff that was responsible for necropsy in the numerous studies involving whole-body irradiation of animals. Using data exploratory analysis methods and empirical functions, prediction of future work loads (based on the expected mortality rate) were made and by the end of the 2-year postdoctoral stay at Argonne, the numbers of animals that came to necropsy monthly were scattered along the curve predicted by Dr. Scott. The success of his prediction gave him confidence in being able to model radiobiological response data and make predictions of potential future occurrences (e.g., for the consequences of a nuclear accident).

Dr. Scott's first challenge after being hired at Lovelace Respiratory Research Institute (then the Inhalation Toxicology Research Institute (ITRI)) in 1977 was to develop models that predicted the casualties (lethality and morbidity) in the event of a nuclear power plant accident such as occurred at Chernobyl. Fortunately, there were abundant data (published and unpublished, animal and human) on lethality and morbidity effects of ionizing radiation. Also, there were abundant in-house data at ITRI on the biological effects of radionuclides on different mammalian species. These data were used along with exploratory analysis methods to develop risk models for lethality and morbidity from complex exposures from radionuclides as a result of a nuclear accident. The complex exposures could involve external beta and gamma radiation as well as internal (inhalation, ingestion, wound entry) exposure to alpha, beta, and gamma radiations. An especially challenging task was to be able to address the influence of the combined exposure to alpha, beta, and gamma rays and also the complex dose rate patterns (increasing over time, decreasing over time, or both). The challenge was met and led to numerous publications and to the development by others of computer codes to implement Dr. Scott's models. The codes are used internationally for assessing the health consequences of radiological incidents. His risk model for deterministic radiation effects played a key role in assessing the intake of Polonium-210 by Mr. Alexander Litvinenko during the poisoning incident in London in November 2006.

Dr. Scott along with scientists at the Southern Urals Biophysics Institute in Ozyorsk, Russia also conducted research on stochastic and deterministic radiation effects among Mayak Facility workers chronically exposed to gamma and alpha (from Plutonium-239) radiation.

More recently his research has focused on the beneficial effects (radiation adaptive response/hormesis) of low radiation doses. A 5-year research project supported by the U.S. Department of Energy Office of Science (BER) was recently initiated with the aim of elucidating the biological basis for radiation adaptive responses (hormesis) in the lung. The new project is discussed in an article by Megan Fleming titled "Researching the Highs and Lows of Radiation" that appears in the Fall 2010 Issue of *Breathe*. A video of his presentation titled "**Radiation Hormesis and Life—Mild Radiation Stress Makes You Stronger**" is available at the following link:

<http://dspace.lrrri.org:8080/xmlui/handle/123456789/891>

Other presentations given by Dr. Scott over the years are also available at the following link: <http://www.radiation-scott.org>.

For his major contributions to the area of dose-response research, Dr. Scott received the **International Dose-Response Society 2008 award** for *Outstanding Leadership in the Field of Dose-Response*. A podcast of his expert commentary presented at the society's 2010 meeting is available at the following link (click on Bobby Scott):

<http://www.dose-response.org/conference/2010/videos.htm>

Dr. Scott is especially proud of his two daughters (Robin and Renee) who are both involved in the medical field and of his granddaughter (Kaylah). He attributes his success to the strong support of the LRRRI directorate, scientific and other staff, colleagues around the world, and family.



Bobby Scott (left) receiving the 2008 **International Dose-Response Society (IDRS) Award** for *Outstanding Leadership in the Field of Dose-Response* from **Edward (Ed) Calabrese**, Director of the IDRS (right):

<http://www.dose-response.org/conference/2008/awards.htm>

2. FROM ARCHIVES OF RADIATION SCIENCES

Paper: Changes in the villous pattern of the human jejunum associated with heavy radiation damage

Source: Gut, Year: 1966, Vol.: 7(2), Page: 149–153.
(<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1552333/pdf/gut00716-0057.pdf>)

Author: Henry G Wiernik.

Laboratory: Department of Radiotherapy, St. Thomas' Hospital, London

Highlights of the paper

This research article shows the effect of gamma radiation on histopathological alterations in serial biopsy samples obtained from the jejunum of gastro-intestinal (GI) carcinoma patients undergone radiotherapy. Compared to well-organized tissue structure in control samples, biopsy samples from patients after radiotherapy, showed decrease in mitotic activity in crypts. Moreover, number of epithelial cells lining for crypt and covering the villus diminished significantly. By the end of 11th day, villi become unrecognizable and mucosa looks flat. These histopathological alterations results in loss of normal structure of tissue.

Significance of the paper

This is one of seminal paper on alterations in human intestinal tissue after radiation exposure. This paper provided significant understanding about histopathological alterations in intestinal tissue in cancer patients undergone radiotherapy. Observations in the paper provided novel understanding, which is highly relevant in accidental radiation exposure as intestine is one of the radio-sensitive organs manifesting gastro-intestinal syndrome. Moreover, results would be helpful to understand the alterations in GI patients while radiotherapy and their better clinical management.

by

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Note: Interested readers may submit the similar articles. This column is aimed to highlight the salient points and significance of a seminal research article/event in radiation biology and allied sciences, which has in further changed substantially the understanding in that particular research field.

3. NEWS AND VIEWS

Radiation and Cancer Biology

Radiation exposure and cancer risk

- **Carcinogenic Interactions between a Single Inhalation of $^{239}\text{PuO}_2$ and Chronic Exposure to Cigarette Smoke in Rats**
<http://www.bioone.org/doi/abs/10.1667/RR1907.1>
- **Dietary Curcumin Increases Antioxidant Defenses in Lung, Ameliorates Radiation-Induced Pulmonary Fibrosis, and Improves Survival in Mice**
<http://www.bioone.org/doi/abs/10.1667/RR1522.1>
- **Gender-related differences in response to mutagens and carcinogens**
<http://mutage.oxfordjournals.org/content/25/3/213.abstract?etoc>
- **Mitochondrial DNA copy number and lung cancer risk in a prospective cohort study**
<http://carcin.oxfordjournals.org/content/31/5/847.abstract?etoc>
- **Effects of Ionizing Radiation on Cell-to-Cell Communication**
<http://www.bioone.org/doi/abs/10.1667/RR1889.1>
- **A Physiological Systems Model for Iodine for Use in Radiation Protection**
<http://www.bioone.org/doi/abs/10.1667/RR2243.1>
- **Research shows CT and nuclear imaging tests during pregnancy do not boost the risk of childhood cancer**
http://www.ices.on.ca/webpage.cfm?site_id=1&org_id=117&morg_id=0&gsec_id=3086&item_id=6408&utility_link_id=3086

Radiation Protection

- **Evaluation of the fullerene compound DF-1 as a radiation protector**
<http://www.ro-journal.com/content/5/1/34/abstract>
- **The top ten list of challenges for radiation protection dosimetry in 2011**

<http://rpd.oxfordjournals.org/content/141/2/105.extract?etoc>

(Editorial)

Radiation induced Bystander effect

- Evidence of an adaptive response targeting DNA non-homologous end joining and its transmission to bystander cells
<http://cancerres.aacrjournals.org/content/early/2010/09/21/0008-5472.CAN-10-1181>
- Bystander effects induced by chemicals and ionizing radiation: evaluation of changes in gene expression of downstream MAPK targets
<http://mutage.oxfordjournals.org/content/25/3/271.abstract?etoc>
- Why do we need a new paradigm in radiobiology?
<http://www.ncbi.nlm.nih.gov/pubmed/20080113>
- IL-8 and IL-6 bystander signalling in human glioblastoma cells exposed to gamma radiation.
<http://www.ncbi.nlm.nih.gov/pubmed/20683011>
- Serum serotonin levels determine the magnitude and type of bystander effects in medium transfer experiments.
<http://www.ncbi.nlm.nih.gov/pubmed/20681806>
- The induction of bystander mutagenic effects in vivo by alpha-particle irradiation in whole *Arabidopsis thaliana* plants
<http://www.ncbi.nlm.nih.gov/pubmed/20681789>
- Investigation of adaptive responses in bystander cells in 3D cultures containing tritium-labeled and unlabeled normal human fibroblasts.
<http://www.ncbi.nlm.nih.gov/pubmed/20681788>
- Effects of ionizing radiation on cell-to-cell communication
<http://www.ncbi.nlm.nih.gov/pubmed/20726722>

Low dose radiobiology

- Review and evaluation of updated research on the health effects associated with low-dose ionising radiation
<http://rpd.oxfordjournals.org/content/140/2/103.abstract?etoc>
(Review Article)
- Effects of Low-Dose Radiation on the Immune System of Mice after Total-Body Irradiation

<http://www.bioone.org/doi/abs/10.1667/RR2160.1>

- Acceleration of Diabetic Wound Healing by Low-Dose Radiation is Associated with Peripheral Mobilization of Bone Marrow Stem Cells
<http://www.bioone.org/doi/abs/10.1667/RR1980.1>
- Do non-targeted effects increase or decrease low dose risk in relation to the linear-non-threshold (LNT) model?
<http://www.ncbi.nlm.nih.gov/pubmed/20105434> (*Review Article*)
- Life span and thymic lymphoma incidence in high- and low-dose-rate irradiated AKR/J mice and commonly expressed genes.
<http://www.ncbi.nlm.nih.gov/pubmed/20726732>

Cancer Biology and Therapy

- TRAIL treatment provokes mutations in surviving cells
<http://www.nature.com/onc/journal/v29/n36/abs/onc2010242a.html>
(Open access)
- Cancer: an old disease, a new disease or something in between?
<http://www.nature.com/nrc/journal/v10/n10/abs/nrc2914.html?lang=en>
- Integrin $\alpha 4\beta 1$ Signaling Is Required for Lymphangiogenesis and Tumor Metastasis
<http://cancerres.aacrjournals.org/content/early/2010/04/13/0008-5472.CAN-09-3761.abstract?papetoc>
- Cancer: Genomics of metastasis
<http://www.nature.com/nature/journal/v464/n7291/full/464989a.html>
- Targeting brain cancer: advances in the molecular pathology of malignant glioma and medulloblastoma
<http://www.nature.com/nrc/journal/v10/n5/abs/nrc2818.html?lang=en>
- Breast Cancer Cells in Three-dimensional Culture Display an Enhanced Radioresponse after Coordinate Targeting of Integrin $\alpha 5\beta 1$ and Fibronectin
<http://cancerres.aacrjournals.org/content/early/2010/06/01/0008-5472.CAN-09-2319.abstract?papetoc>

- Mitochondrial metabolism and ROS generation are essential for Kras-mediated tumorigenicity
<http://www.pnas.org/content/107/19/8788.abstract?etoc> (*Open access*)
- Targeted Nanoparticles that Deliver a Sustained, Specific Release of Paclitaxel to Irradiated Tumors
<http://cancerres.aacrjournals.org/content/early/2010/05/18/0008-5472.CAN-10-0339.abstract?papetoc>
- The colony-stimulating factors and cancer
<http://www.nature.com/nrc/journal/v10/n6/abs/nrc2843.html?lang=en>
- Implications and challenges of connexin connections to cancer
<http://www.nature.com/nrc/journal/v10/n6/abs/nrc2841.html?lang=en>
- Tumour necrosis factor-alpha expression in tumour islets confers a survival advantage in non-small cell lung cancer
<http://www.biomedcentral.com/1471-2407/10/323/abstract> (*Open access*)
- TGF- β IL-6 axis mediates selective and adaptive mechanisms of resistance to molecular targeted therapy in lung cancer
<http://www.pnas.org/content/107/35/15535.abstract?etoc> (*Open access*)
- The Balance Between Initiation and Promotion in Radiation-Induced Murine Carcinogenesis
<http://www.bioone.org/doi/abs/10.1667/RR2143.1>
- Effects of Proton Radiation Dose, Dose Rate and Dose Fractionation on Hematopoietic Cells in Mice
<http://www.bioone.org/doi/abs/10.1667/RR1979.1>
- Clinical Pharmacology of Resveratrol and Its Metabolites in Colorectal Cancer Patients
<http://cancerres.aacrjournals.org/content/70/19/7392.abstract?pagetoc=>
- Personalized Medicine: Marking a New Epoch in Cancer Patient Management

<http://mcr.aacrjournals.org/content/early/2010/08/10/1541-7786.MCR-10-0264.abstract?papetoc>

Cancer Radiotherapy

- Radiotherapy: Hypofractionation for breast cancer—clinical implications
<http://www.nature.com/nrclinonc/journal/v7/n6/full/nrclinonc.2010.65.html>
- From clinical observations of intensity-modulated radiotherapy to dedicated in vitro designs
<http://www.ncbi.nlm.nih.gov/pubmed/20178859>
- Radiotherapy of large target volumes in Hodgkin's lymphoma: normal tissue sparing capability of forward IMRT versus conventional techniques
<http://www.ro-journal.com/content/5/1/33/abstract> (*Open access*)
- Scaling Laws for Plasma Concentrations and Tolerable Doses of Anticancer Drugs
<http://cancerres.aacrjournals.org/content/early/2010/06/04/0008-5472.CAN-09-3261.abstract?papetoc>
- Immunoliposomal Delivery of ^{213}Bi for Alpha-emitter Targeting of Metastatic Breast Cancer
<http://cancerres.aacrjournals.org/content/early/2010/07/21/0008-5472.CAN-09-4548.abstract?papetoc>
- Proton therapy for Hodgkin lymphoma: does a case report make the case? Proton therapy for Hodgkin lymphoma: does a case report make the case?
<http://informahealthcare.com/doi/abs/10.3109/10428194.2010.499978?journalCode=ial>

Cancer: Prognosis and Diagnosis

- Identification of Biomarkers for Predicting Nasopharyngeal Carcinoma Response to Radiotherapy by Proteomics
<http://cancerres.aacrjournals.org/content/early/2010/04/20/0008-5472.CAN-09-4099.abstract?papetoc>

- **Preclinical Evaluation of an ¹³¹I-Labeled Benzamide for Targeted Radiotherapy of Metastatic Melanoma**
<http://cancerres.aacrjournals.org/content/early/2010/05/04/0008-5472.CAN-09-4414.abstract?papetoc>
- **Fentanyl buccal soluble film (FBSF) for breakthrough pain in patients with cancer: a randomized, double-blind, placebo-controlled study**
<http://annonc.oxfordjournals.org/content/21/6/1308.abstract?etoc>
- **Restoration of radiation therapy-induced salivary gland dysfunction in mice by post therapy IGF-1 administration**
<http://www.biomedcentral.com/1471-2407/10/417/abstract> (*Open Access*)
- **In vitro effects of imatinib mesylate on radiosensitivity and chemosensitivity of breast cancer cells**
<http://www.biomedcentral.com/1471-2407/10/412/abstract> (*Open Access*)
- **Effect of all-trans retinoic acid on the proliferation and differentiation of brain tumor stem cells**
<http://www.jeccr.com/content/29/1/113> (*Open Access*)
- **Radiosensitization and growth inhibition of cancer cells mediated by an scFv antibody gene against DNA-PKcs in vitro and in vivo**
<http://www.ro-journal.com/content/5/1/70> (*Open Access*)
- **Cellular apoptosis susceptibility (CSE1L/CAS) protein in cancer metastasis and chemotherapeutic drug-induced apoptosis**
<http://www.jeccr.com/content/29/1/110> (*Open Access*)
- **Cardiac toxicity in association with chemotherapy and radiation therapy in a large cohort of older patients with non-small-cell lung cancer**
<http://annonc.oxfordjournals.org/content/21/9/1825.abstract?etoc>
- **Modulation of radiation and cadmium induced biochemical changes in mouse kidney by Emblica officinalis Linn**
http://www.ijrr.com/browse.php?a_code=A-10-1-344&slc_lang=en&sid=1
- **Benefits of biomarker selection and clinico-pathological covariate inclusion in breast cancer prognostic models**

<http://breast-cancer-research.com/content/12/5/R66> (*Open Access*)

Technological advancement/note

- Significantly improved precision of cell migration analysis in time-lapse video microscopy through use of a fully automated tracking system
<http://www.biomedcentral.com/1471-2121/11/24/abstract> (*Open Access*)
- Development of a method for assessing non-targeted radiation damage in an artificial 3D human skin model
<http://www.ncbi.nlm.nih.gov/pubmed/20545568>
- Cell line misidentification: the beginning of the end
<http://www.nature.com/nrc/journal/v10/n6/abs/nrc2852.html?lang=en>
- Integrated microfluidic and imaging platform for a kinase activity radioassay to analyze minute patient cancer samples
<http://cancerres.aacrjournals.org/content/early/2010/09/10/0008-5472.CAN-10-0851>

Nuclear Technology & Safety

Radiation Safety

- Radiation Accident a 'Wake-Up Call' For India's Scientific Community
http://www.sciencemag.org/cgi/content/summary/328/5979/679-a?sa_campaign=Email/toc/7-May-2010/10.1126/science.328.5979.679-a
- Natural radioactivity in roadside soil along Jamshedpur-Musabani road: a mineralised and mining region, Jharkhand and associated risk
<http://rpd.oxfordjournals.org/content/140/3/281.abstract?etoc>
- Study of minimum detection limit of TLD personnel monitoring system in India
<http://rpd.oxfordjournals.org/content/141/2/168.abstract?etoc>
- Natural radioactivity and associated dose rates in soil samples from Kalpakkam, South India
<http://rpd.oxfordjournals.org/content/141/3/239.abstract?etoc>

- Measurement and analysis of electromagnetic fields from trams, trains and hybrid cars

<http://rpd.oxfordjournals.org/content/141/3/255.abstract?etoc>

Nuclear Technology

- US nuclear policy could boost basic research
<http://www.nature.com/news/2010/100413/full/464965a.html>
- X-Ray Vision, Without the Radiation
<http://news.sciencemag.org/sciencenow/2010/05/x-ray-vision-without-the-radiati.html?etoc>
- Study on the response of thermoluminescent dosimeters to synchrotron radiation: experimental method and Monte Carlo calculations

<http://rpd.oxfordjournals.org/content/140/2/137.abstract?etoc>

Science and Society

Indian Science and Technology

- Radiation Accident a 'Wake-Up Call' For India's Scientific Community
http://www.sciencemag.org/cgi/content/summary/328/5979/679-a?sa_campaign=Email/toc/7-May-2010/10.1126/science.328.5979.679-a

Science in General

- Tobacco and Cancer: An American Association for Cancer Research Policy Statement
<http://cancerres.aacrjournals.org/content/early/2010/04/13/0008-5472.CAN-10-1087.full.pdf+html>
- Cancer: an old disease, a new disease or something in between?
<http://www.nature.com/nrc/journal/v10/n10/abs/nrc2914.html?lang=en>
- Eat Less and live long
<http://www.sciencemag.org/cgi/content/abstract/328/5976/321>

- **Carcinogenic Interactions between a Single Inhalation of $^{239}\text{PuO}_2$ and Chronic Exposure to Cigarette Smoke in Rats**
<http://www.bioone.org/doi/abs/10.1667/RR1907.1>
- **Dietary Curcumin Increases Antioxidant Defenses in Lung, Ameliorates Radiation-Induced Pulmonary Fibrosis, and Improves Survival in Mice**
<http://www.bioone.org/doi/abs/10.1667/RR1522.1>
- **Gender-related differences in response to mutagens and carcinogens**
<http://mutage.oxfordjournals.org/content/25/3/213.abstract?etoc>
- **Dangerous Dengue Provocation**
<http://stke.sciencemag.org/cgi/content/abstract/sigtrans;3/121/ec145?etoc>
- **Intake of wholegrain products and risk of colorectal cancers in the Diet, Cancer and Health cohort study**
<http://www.nature.com/bjc/journal/v103/n5/full/6605806a.html>
- **Measurement and analysis of electromagnetic fields from trams, trains and hybrid cars**
<http://rpd.oxfordjournals.org/content/141/3/255.abstract?etoc>
- **Research on cancer prevention, detection and management in low- and medium-income countries**
<http://annonc.oxfordjournals.org/content/21/10/1935.full?etoc>

Noble Prizes 2009

Medicine	Robert G. Edwards , University of Cambridge, Cambridge, United Kingdom	Development of in vitro fertilization
Physics	Andre Geim and Konstantin Novoselov University of Manchester, Manchester, United Kingdom University of Manchester, Manchester, United Kingdom	Groundbreaking experiments regarding the two-dimensional material graphene
Chemistry	Richard F. Heck University of Delaware, USA Ei-ichi Negishi Purdue University, West Lafayette, IN, USA Akira Suzuki Hokkaido University, Sapporo, Japan	Palladium-catalyzed cross couplings in organic synthesis
Literature	Mario Vargas Llosa Arequipa, Peru	Cartography of structures of power and his trenchant images of the individual's resistance, revolt, and defeat
Economics	Peter A. Diamond Massachusetts Institute of Technology (MIT), Cambridge, MA, USA Dale T. Mortensen Northwestern University, Evanston, IL, USA Christopher A. Pissarides London School of Economics and Political Science, London, United Kingdom	Analysis of markets with search frictions
Peace	Liu Xiaobo China	Long and non-violent struggle for fundamental human rights in China

4. ARTICLE OF THE ISSUE

- **Restoration of radiation therapy-induced salivary gland dysfunction in mice by post therapy IGF-1 administration**

Symptoms (like xerostomia, dysphagia, and malnutrition) associated with severe and chronic salivary gland dysfunction is major side effects in head and neck cancer patients while radiotherapy, linked to significant reductions in patients' quality of life. Currently limited treatment options are available to overcome this side effect that provides long-term results without significant side effects. The present article investigated the potential for post-therapeutic administration of IGF-1 to reverse radiation-induced salivary gland dysfunction. Irradiated animals (mice) receiving vehicle control have 40-50% reductions in stimulated salivary flow rates. Mice receiving injections of IGF-1 have improved stimulated salivary flow rates 30 days after treatment. These mice restored amylase activity in parotid tissue sections and significant reductions in total amylase area. Post-therapeutic injections of IGF-1 results in increased amylase-positive acinar cell area and improved amylase secretion. These findings could aid in the rational design of therapy protocols or drugs for the treatment of radiation-induced salivary gland dysfunction in patients who have completed their anti-cancer therapies.

Read the full article on the link below:

<http://www.biomedcentral.com/content/pdf/1471-2407-10-417.pdf>
(Open Access)

5. ARTICLE SERIES / REVIEWS

- **Nature Reviews Cancer: Focus on p53 — 30 years on**

<http://www.nature.com/nrc/focus/p53/index.html>

- **Therapeutic resistance**

<http://www.nature.com/nrc/series/therapeutic/index.html>

- **Diagnosing Cancer Earlier**

Evidence for a National Awareness and Early Diagnosis Initiative

<http://www.nature.com/bjc/journal/v101/n2s/index.html>

- Cell line-based platforms to evaluate the therapeutic efficacy of candidate anticancer agents

<http://www.nature.com/nrc/journal/v10/n4/abs/nrc2820.html?lang=en>

- Targeting metabolic transformation for cancer therapy

<http://www.nature.com/nrc/journal/v10/n4/abs/nrc2817.html>

New

- Chromatin dynamics

Chromatin is involved in proofreading and repair mechanisms during replication and in response to DNA damage, ensuring the faithful inheritance of genetic and epigenetic information and maintaining genome stability. Such organization helps in maintenance of DNA integrity and flow of life. Series of articles on the topic available on link..

<http://www.nature.com/nrm/series/chromatin/index.html>

New

- Epigenetics and genetics

<http://www.nature.com/nrc/series/epigenetics/index.html>

New

- The impact of antiretroviral therapy on HPV and cervical intraepithelial neoplasia: current evidence and directions for future research

<http://www.infectagentscancer.com/content/5/1/8/abstract> (Open Access)

New

- Cancer stem cells in solid tumors: elusive or illusive?

<http://www.biosignaling.com/content/8/1/6/abstract> (Open access)

New

- Biomarkers and surrogate end points—the challenge of statistical validation

<http://www.nature.com/nrclinonc/journal/v7/n6/abs/nrclinonc.2010.43.html?lang=en>

New

- Homologous recombination in cancer development, treatment and development of drug resistance

<http://carcin.oxfordjournals.org/content/31/6/955.abstract?etoc> (Open access)

New

- The uncertainty in physical measurements—an introduction to data analysis in the physics laboratory

<http://rpd.oxfordjournals.org/content/140/1/101.extract?etoc>

New

- Review and evaluation of updated research on the health effects associated with low-dose ionising radiation

<http://rpd.oxfordjournals.org/content/140/2/103.abstract?etoc>

New

- Do non-targeted effects increase or decrease low dose risk in relation to the linear-non-threshold (LNT) model?

<http://www.ncbi.nlm.nih.gov/pubmed/20105434>

New

- Adjuvant radiotherapy and chemotherapy in breast cancer: 30 year follow-up of survival

<http://www.biomedcentral.com/1471-2407/10/398/abstract> (*Open access*)

New

- Personalized therapies in the cancer "omics" era

<http://www.molecular-cancer.com/content/9/1/202> (*Open access*)

New

- Metabolism and proliferation share common regulatory pathways in cancer cells

<http://www.nature.com/onc/journal/v29/n31/abs/onc2010182a.html>

New

- Herbs in hemato-oncological care: an evidence-based review of data on efficacy, safety, and drug interactions

<http://informahealthcare.com/doi/abs/10.3109/10428194.2010.487622?journalCode=lal> (*Open access*)

New

- Recent advances in the biology of heavy-ion cancer therapy.

<http://www.ncbi.nlm.nih.gov/pubmed/20679739>

New

- The role of signaling pathways in the development and treatment of hepatocellular carcinoma

<http://www.nature.com/onc/journal/v29/n36/abs/onc2010236a.html>

Note: Some of the articles are open access for only limited period.

6. LETTERS FROM THE READERS

- It is a wonderful job to bring the enewsletter to this valuable standards. Efforts are highly appreciated among the readers.

- **Dr B Sreedevi**, RPAD, BARC, Mumbai

7. UPCOMING CONFERENCE & WORKSHOP OF ISRB

**International Conference on Radiation Biology:
Nanotechnology, Imaging and Stem Cell Research in
Radiation Oncology 2010 (ICRB-NISRRO 2010)**

and

**10th Biennial Meeting of Indian Society for Radiation
Biology**

November 15-17, 2010

Shri Ramachandra University, Porur, Chennai, India.

International Conference on Radiation Biology: Nanotechnology, Imaging and Stem Cell Research in Radiation Oncology (ICRB-NISRRO 2010) would be organized during November 15-17, 2010 at Shri Ramachandra Medical College and Research Institute, Shri Ramachandra University, Porur, Chennai (Madras), India. The Conference would provide unique opportunity to participants for scientific presentations and interaction with eminent scientists from India and abroad. In addition, Chennai and surroundings cities, are famous for its historical monuments, temples, traditional culture, and are attractive tourist sites in India.

MAJOR TOPICS TO BE DISCUSSED

Radiation Biology

- Low dose Radiobiology
- Bystander effects, Adaptive response and genomic instability

- Oxidative stress, DNA repair and apoptosis in radiation damage
- Heavy ion radiobiology in space
- Systems Biology – Significance in radiobiology
- Radiation induced cellular & molecular changes

Pre-clinical Research in Radiation Oncology

- Tumor microenvironment and radiotherapy
- Biomodifying agents and targeted cancer therapy
- Molecular imaging and nanotherapeutics
- Predictive and prognostic biomarkers in cancer therapy
- Radiation resistance and cancer initiating stem cells
- Advances in radiotherapy delivery – biological implications
- Impact of radiation on normal tissue
- High dose radiation, immunogenicity & abscopal effects

Medical Management of Radiation Exposure

- Acute radiation syndrome
- Radiomodifiers and radioprotectants
- Novel radiation countermeasure agents
- Radiological safety in the health care industry
- Hazards of radiation terrorism
- Radiation effects on population and risk assessment
- Models for radiation biodosimetry and biological monitoring on the field
- Radiation Safety Regulations

Date of Conference: November 15-17, 2010

Abstract submission deadline: Sep. 30, 2010

Registration deadline: Sep. 30, 2010

Awards: **Indian Society for Radiation Biology (ISRB)** has the following awards.
Details would be announced in due course of time.

- **Life time Achievement Award** : 1
- **M. R. Raju Award** : 1
- **Young Scientists Award** : 3
- **Poster Award** : 5

Contact Person: Dr. Solomon Paul, The Convener

Tel : +91-044-24765512 Ext 237,176

Fax: 091-44-24765995

Email : icrb2010@yahoo.com , info@icrb2010.org , secretary@icrb2010.org

For more details, abstract submission, registration and time to time update about the Conference please contact on the email or visit the web page: <http://icrb2010.org/>.

Emerging Techniques, Tools and Probes in Radiobiology (ETTPR-2010)

A Post Conference Workshop of (ICRB-NISRRO 2010)

Nov. 18, 2010

**Anupuram, Indira Gandhi Centre for Atomic Research,
Kalpakkam, India**

Organized by:

Dr. Mary N. Mohankumar

Indira Gandhi Centre for Atomic Research
Kalpakkam, INDIA

Prof. Carmel Mothersill

McMaster University
Canada

For details visit <http://www.icrb2010.org/PostConference.aspx>

8. UPCOMING MEETINGS/ WORKSHOPS

- **International Conference on Radiation Biology, 2010 (ICRB-2010)**, Shri Ramachandra Medical College and Research Institute, Shri Ramachandra University, Porur, Chennai (Madras), India

Date of Conference: November 15-17, 2010

Abstract submission deadline: Sep. 30, 2010

Registration deadline: Sep. 30, 2010

Contact Person: Dr. Solomon Paul

The Convener

Tel : +91-044-24765512 Ext 237,176

Fax: 091-44-24765995

Email : icrb2010@yahoo.com , info@icrb2010.org , secretary@icrb2010.org

For more details, abstract submission, registration and time to time update about the Conference please contact on the email or visit the web page: <http://icrb2010.org/>.

- **Emerging Techniques, Tools and Probes in Radiobiology (ETTPR-2010)** A Post Conference Workshop of (ICRB-NISRRO 2010) Nov. 18, 2010 Anupuram, Indira Gandhi Centre for Atomic Research, Kalpakkam, India
For details visit <http://www.icrb2010.org/PostConference.aspx>
- **31st Annual Conference of Association of Medical Physicists of India, Nov. 18-21, 2010**
Contact person: Dr KJ Maria Das, Organizing Secretary, AMPICON 2010, Department of Radiotherapy, Sanjay Gandhi Post Graduate Institute of Medical Sciences, Rai Bareilly Road, Lucknow 226 014, India, **Email:** info@ampicon2010.com
- **International Conference on "Radiation, Environment & Health" is scheduled at Nehru Gram Bharati University, Allahabad, UP, India, November, 19-21, 2010**
Secretariat, Organising Secretary, ICREH-2010, Nehru Gram Bharati University, 104F/3, Malviya Road, George Town, Allahabad – 211002; India,
Email : icreh.2010@gmail.com, info.ngbu@gmail.com, ngb@nehrugrambharati.org.in
Web page: <http://www.ngbu.edu.in/Conferences.aspx>
- **7th International Conference on High Levels of Natural Radiation and Radon Areas, Nov. 24-26, 2010, Park Hotel, Navi Mumbai, Mumbai, India**
Contact Person: Dr. Birajalaxmi Das, Convener, 7th HLNRRRA, Radiation Biology and Health Sciences Division, Bio-Medical Group, Bhabha Atomic Research Centre, Mumbai – 4000 085. INDIA. **Tel. :** 91-22- 2559 5047, **Email:** hlnrr7mumbai@gmail.com,
Web page: <http://www.hlnrra7.org/>
- **NAARRI International Conference (NIC - 2010) ISOTOPE TECHNOLOGIES AND APPLICATIONS - NEW HORIZONS DEC 13 - 15, 2010 MUMBAI**
Website: www.naarri.com/NIC2010
Conference Secretariat: NAARRI International Conference NIC - 2010, C/O Board Of Radiation and Isotope Technology (BRIT), Project House, V. N. Purav Marg, Mumbai 400094. Email: secretary@naarri.com

- **9th International LOWRAD Conference on "The Effects of Low Doses and Very Low Doses of Ionizing Radiation on Human Health and Biotopes", 13 - 15 December 2010, Barcelona, Spain, Web page: www.lowrad.org**

- **Nano in Cancer: Linking Chemistry, Biology, and Clinical Applications In Vivo, January 12-15, 2011, Miami, FL, USA**
Early registration deadline: Friday, October 15, 2010
Abstract submission deadline: Monday, November 1, 2010

<http://www.aacr.org/home/scientists/meetings--workshops/special-conferences/nano-in-cancer-linking-chemistry,-biology,-and-clinical-applications-in-vivo.aspx>

- **AACR-ACS Joint Meeting on Chemistry in Cancer Research: The Biological Chemistry of Inflammation as a Cause of Cancer, January 30-February 2, 2011, San Diego, CA, USA**
Early registration deadline: Monday, November 1, 2010
Abstract submission deadline: Wednesday, December 1, 2010

<http://www.aacr.org/home/scientists/meetings--workshops/special-conferences/biological-chemistry-of-inflammation-as-a-cause-of-cancer--%28aacr-ac-s-joint-meeting%29-.aspx>

- **An AACR Special Conference on Targeting PI3K/mTOR Signaling in Cancer, February 24-27, 2011, Hyatt Regency San Francisco, CA, USA**

Early registration deadline: Monday, November 22, 2010

Abstract submission and award application deadline: Monday, December 6, 2010

<http://www.aacr.org/home/scientists/meetings--workshops/special-conferences/targeting-pi3kmtor-signaling-in-cancer.aspx>

- **AACR-NCI Conference on Systems Biology: Confronting the Complexity of Cancer, February 27-March 2, 2011, San Diego, CA, USA**

<http://www.aacr.org/home/scientists/meetings--workshops/systems-biology-confronting-the-complexity-of-cancer.aspx>

- **Stem Cells, Development, and Cancer, March 3-6, 2011, Vancouver, BC, Canada**
Early registration deadline: Monday, December 6, 2010
Abstract submission deadline: Wednesday, December 15, 2010

<http://www.aacr.org/home/scientists/meetings--workshops/special-conferences/stem-cells,-development,-and-cancer.aspx>

- **AACR 102nd Annual Meeting 2011, April 2-6, 2011, Orlando, FL, USA**
Abstract submission deadline: Monday, November 15, 2010
Early registration deadline: Friday, December 24, 2010

<http://www.aacr.org/home/scientists/meetings--workshops/aacr-102nd-annual-meeting-2011.aspx>

- **Cancer Research Imaging Camp, June 19-24, 2011, St. Louis, MO, USA**
Application deadline: Friday, February 11, 2010

<http://imaging.cancer.gov/NewsAndMeetings/workshops/CRIC>

- **12th International Wolfsberg Meeting on Molecular Radiation Biology/Oncology, June 25-27, 2011** We page: www.wolfsberg-meeting.com
- **14th International Congress for Radiation Research 2011, August 28-Sept. 1, 2011, Warsaw, Poland.**

<http://www.icrr2011.org/>

- **New Horizons in Cancer Research: Biology to Prevention to Therapy, December 13-16, 2011, Gurgaon, Delhi (NCR), India**

<http://www.aacr.org/home/scientists/meetings--workshops/new-horizons-in-cancer-research.aspx>

- **ACRR Meetings & Workshops Calendar**

<http://www.aacr.org/home/scientists/meetings--workshops/meetings--workshops-calendar.aspx>

Important Notice: Are you organizing any Workshop/Meeting related to Radiation Research or in related research areas? You can add the announcement of event to this eNewsletter **free of cost!!** The announcement would reach to ISRB Community as well many more in India and abroad. The details of announcement may be communicated to: isrb_enewsletter@yahoo.co.in. Moreover, the information would be included to web page as and when it would be available.

9. NEW LIFE MEMBERS OF ISRB

Indian Society for Radiation Biology **welcomes its New Life Members.** We look forward their active participation and contribution in various activities of Society.

Name	Affiliation	Research Interest	Year
Dr Amit Kumar	Radiation Biology and Health Sciences Division, Bhabha Atomic Research Centre, Mumbai 400 085, India	Heavy metal toxicity, Radiation Oncology, Radiation Biology	April 2010
Shri P. S. Dange	Radiation Biology and Health Sciences Division, Bhabha Atomic Research Centre, Mumbai 400 085, India	Tumor models, Radiation induced Cancer Incidence	April 2010
Shri S. Jayakumar	Radiation Biology and Health Sciences Division, Bhabha Atomic Research Centre, Mumbai 400 085, India	DNA damage and repair, tumor radio-sensitivity, molecular oncology	April 2010
Shri Chandan Kumar	Radiopharmaceutical Division, Bhabha Atomic Research Centre, Mumbai 400 085, India	Radiopharmaceuticals (Cellular signaling by beta emitting radiopharmaceuticals)	June, 2010
Shri Suresh Subramanian	Radiopharmaceutical Division, Bhabha Atomic Research Centre, Mumbai 400 085, India	Development of diagnostic and therapeutic agents using radioisotopes	June, 2010

10. AWARDS/HONORS TO ISRB MEMBERS

Name of the ISRB Member	Affiliation	Award/Honors	Year/Period
Dr K. P. Mishra	Vice Chancellor Nehru Gram Bharati University Allahabad Ex Head, Radiation Biology and Health Sciences Division, Bhabha Atomic Research Center, Mumbai Past-President, ISRB	Fellowship , International Academy of Physical Sciences,	Feb. 2010
Professor P. Uma Devi	Ex-Professor, Kasturba Medical College, Manipal, Past-President, ISRB	Pt. Jawaharlal Nehru National Award for Science , 2008 of the Madhya Pradesh Council of Science and Technology, for her outstanding contributions in the field of Radiation Biology, Radioprotectors and Tumor sensitizers. The award was given by the Hon. Minister for Science & Technology of Madhya Pradesh, Shri Kailash Vijayavergeey at a function held in Bhopal on 17th September 2010 and Dr. R. Chidambaram presided. The award carries a citation and Rs. 1 lakh."	Sept. 2010

Congratulations to the Members of Indian Society for Radiation Biology for prestigious Awards and Honors!!

May God bless you many more in future!!

11. RECENT PUBLICATIONS/PATENTS OF ISRB MEMBERS

Author/Affiliation	Title	Citation	Key words
<u>Natarajan. A. T.*</u> , Palitti. F, Hill. M.A, Stevens. D.L., G. Ahnstrom *Email: natarajan@live.nl	Influence of DMSO on Carbon K ultrasoft X-rays induced chromosomal aberrations in V79 Chinese hamster cells	Mutation Research (2010)691, 23-26.	Chromosomal aberrations, lymphocytes
Mosesso, P, Palitti, F, Pinero, J, Bellasima, R, Ahnstrom, G, <u>Natatajan,</u> <u>A.T.*</u> *Email: natarajan@live.nl	Relationship between chromatin structure, DNA damage and repair following X-irradiation of human lymphocytes	Mutation Research (2010) 701, 86-91	Chromosomal aberrations, lymphocytes

12. CAREER FORUM

New

- **Postdoc Position in Radioimmunotherapy, IRCM, Montpellier, France (2011-13):** A 2-years postdoctoral position is available at the Institut de Recherche en Cancérologie de Montpellier (IRCM, Montpellier, France; <http://www.ircm.fr>). The project aims at assessing the efficiency of intraperitoneal (i.p.) RIT using alpha particles emitters (APE), alone or in combination with chemotherapy (Chem), associated or not to hyperthermia in the therapy of peritoneal carcinomatosis of small size (3–5 mm) as those remaining after cytoreductive surgery. A strong background in in vivo experiments, targeted therapy, nuclear medicine and/or radiobiology, would be an advantage. Start date should be by January, 2011 and the position will be funded for 2 years. If you are interested in this position, please send an informal application with your CV, previous research experience (list of publications) and names/phone/email of at least two references to:
jean-pierre.pouget@valdorel.fnclcc.fr

Last date for application submission is **November 15, 2010.**

Download the brochure:

<http://www.isrbindia.com/assets/Uploads/Positions-and-Others/Postdoc-position-alpha-particles-RIT-2011-13.pdf>

- **Temporary Assistant professors of Nanobiotechnology (two):** ACHARYA NAGARJUNA UNIVERSITY; NAGARJUNA NAGAR :: GUNTUR DIST 522 510, A.P., Advt.No.ANU/TS.1/2010 Date: 19-06-2010, Nagarjunanagar REGISTRAR, Dt. 19-06-2010 ACHARYA NAGARJUNA UNIVERSITY
For details visit the web page:
<http://www.nagarjunauniversity.ac.in/default.asp> Or Contact
Prof.K.R.S.Sambasiva Rao, Professor and Head, Department of Biotechnology
Acharya Nagarjuna University Nagarjunanagar - 522 510, Guntur, A.P., India
Ph - 91-863-2346172(O), 2346355 (D)
(Please check the date of application submission)
- **SCIENTIST POSITIONS AVAILABLE:** Institute of Life Sciences, Bhubaneswar, an autonomous Institute of the Department of Biotechnology, Ministry of Science & Technology, Government of India, is an emerging multidisciplinary institute engaged in advanced research in biology. The Institute invites applications from Indian citizens for core scientific positions in various grades. Interested candidates with Ph.D/M.D. Degree and Post-Doctoral experience desirous of pursuing a dedicated research career using any or all of the following tools of biology – Cell Biology, Immunology, Genomics, Proteomics, Nanotechnology, Bioinformatics and Systems Biology may send their Curriculum Vitae, list of publications, three letters of reference(s) and proposed plan of research work to the **Director, Institute of Life Sciences, Nalco Square, Bhubaneswar – 751 023, India. Email:** ilsindia.recruitment@gmail.com , **Fax: 0091-674-2300728.** Last date of application: One month from the date of publication of this advertisement (Advt. No.19/2010). Please visit <http://www.ils.res.in> for more details.
- **JRF position for DAE BRNS sanctioned project titled 'Development of bioinformatics database resources for radiomodifiers and make it available on internet to user community'. Duration:** three years, **Eligibility:** The candidates who have completed M.Sc. with at least First Class in the subject of Biophysics/Biochemistry with sound knowledge of Radiation Biology /computer programming/web designing/ .

For details may contact to Dr P M Dongre, Head, Department of Biophysics, University of Mumbai, Vidynagari, Santacruz (E), Kalina 400 098. Email: drpmdongre@yahoo.co.in, head.biophysics@mu.ac.in

- **DOE Puts Up \$85 Million for Grants to Young Scientists**

The U.S. Department of Energy (DOE) has committed \$85 million next year for a new program to help 50 young scientists establish their research careers. It is the latest federal agency to try to lend a hand to this vulnerable population.

<http://www.sciencemag.org/cgi/content/summary/325/5939/375>

Grants and Awards

- Looking for **Grants, Funds, Fellowships** related to **Radiation Research**, visit the Radiation Research Web page or following link

http://www.radres.org/ECOMradres/timssnet/common/tnt_JobsFundingandFellowships.cfm

- **Pre- and Post Doctoral Fellowships from NIH**

<http://grants.nih.gov/training/extramural.htm>

- **AACR-Gertrude B. Elion Cancer Research Award**

<http://www.aacr.org/default.aspx?p=3859>

- **AACR Career Development Awards**

<http://www.aacr.org/default.aspx?p=3858>

- **AACR seeks nominations of outstanding scientists for prestigious Landon-AACR Prizes for Basic & Translational Cancer Research.**

Call for nominations now open through August 25, 2008

For information, visit <http://www.aacr.org/page13893.aspx>

- **Science Foundation Ireland, (SFI)**

The national foundation for excellence in scientific research is investing in academic

researchers and research teams who are most likely to generate new knowledge, leading edge technologies, and competitive enterprises.

www.sfi.ie

- **Pancreatic cancer research centre funding over 2 million dollars**

Please view individual grant mechanisms for eligibility and deadlines.

Grants provide funding for outstanding pancreatic cancer research .

<http://www.aacr.org/home/scientists/research-funding--fellowships.aspx>

New

- **AACR, Research Funding & Fellowships**

<http://www.aacr.org/home/scientists/research-funding--fellowships.aspx>

Article related to career issues

- **Support for Tenure-Track Jobs in Biomedical Sciences**

<http://www.sciencemag.org/cgi/content/summary/324/5923/27a>

- **No place like home**

Young Eastern European, Asian scientists are returning to their home countries to set up labs — with mixed success.

<http://www.nature.com/naturejobs/2009/091001/full/nj7264-681d.html>

- **Why your boss is incompetent**

<http://www.newscientist.com/article/mg20427392.600-why-your-boss-is-incompetent.html?DCMP=NLC-nletter&nsref=mg20427392.600>

- **Gatekeeper's burden**

It takes a special combination of thick skin and scientific enthusiasm to be a journal editor. Kendall Powell gets tips from a chosen few.

<http://www.nature.com/naturejobs/2010/100401/full/nj7289-800a.html>

- **Canadian fellowships**

<http://www.nature.com/naturejobs/2010/100902/full/nj7311-119b.html>

- **Postdocs form union**

<http://www.nature.com/naturejobs/2010/100902/full/nj7311-119c.html>

Important Web Sites

- **AACR Research Fellowships**

<http://www.aacr.org/default.aspx?p=3860>

- **GrantsNet** is resource to find funds for training in the sciences and undergraduate science education. Through the support of [HHMI](#) and [AAAS](#), this service is completely free.

http://www.grantsnet.org/start.cfm?session_id=844615

- **Naturejobs** the career magazine from Nature with the hottest science jobs and details of career related issues.

<http://www.nature.com/naturejobs/index.html>

- **Post Doc Jobs**, a site providing opportunities about Post Doc Jobs. It is a platform to bring students, Professionals and Research Institutes together.

<http://www.postdocjobs.com/>

- **Science's Next Wave** is a weekly online publication that covers scientific training, career development, and the science job market. *Next Wave* is published by *SCIENCE* magazine and the American Association for the Advancement of Science.

<http://nextwave.sciencemag.org/?CFID=789744&CFTOKEN=78870222>

- The National Academy of Sciences offers Research Associateship Awards to doctoral level scientists and engineers (US and foreign nationals). For more information go to

<http://sites.nationalacademies.org/pga/RAP/index.htm>

- **Science careers**

http://sciencecareers.sciencemag.org/tools_tips/outreach/relationships_booklet

Important Notice: If you have any vacancy in your laboratory/Institute, you can advertise the post through this eNewsletter. In addition, any award in these fields may be also announced. **It is absolutely free!!** The advertisement would reach to Members of ISRB and many more, who may be interested about the vacancy. The details of vacancy may be communicated to: isrb_enewsletter@yahoo.co.in.

13. USEFUL LINKS

- **Radiation Research Podcast**

You can listen, the telephone interviews to author(s) of selected paper published each month from the latest issue of international scientific journal ***Radiation Research***, official journal of the Radiation Research Society. In addition, you can also listen, the interviews by eminent scientists in radiation research about the current topics. Log on to

<http://lsmr1.lbl.gov:8080/xwiki/bin/view/Radiation+Research+Society/>

Or Look for Journal Podcast under category 'Journal' and then 'Journal Podcast' on following web page

<http://www.radres.org/podcast/>

Or Look for 'Radiation Research Podcast' in Google Search

- **Radiation Research Society SIT Discussion Board**

Another site, which may attract you to get information related to Scientific Meetings, vacancies and discussion in Radiation Sciences.

<http://www.radres.org/ECOMradres/timssnet/phpBB2/index.php>

- **Science's Next Wave** is a weekly online publication that covers scientific training, career development, and the science job market. *Next Wave* is published by *SCIENCE* magazine and the American Association for the Advancement of Science.

<http://nextwave.sciencemag.org/?CFID=789744&CFTOKEN=78870222>

- **Link to related other Professional / Academic Societies related to Radiation Biology and Oncology**

http://www.radres.org/ECOMradres/timssnet/common/tnt_RelatedSocieties.cfm

- **Nuclear India**

A publication by Department of Atomic Energy, Government of India about nuclear energy and various other related issues

<http://www.dae.gov.in/ni/nimain.htm>

- **Video presentation titled "Radiation Hormesis and Life-Mild Radiation Stress Makes You Stronger."** Video and a pdf file of the slides presented are available on link: <http://dspace.lrrri.org:8080/xmlui/handle/123456789/891>

One more Video Commentary related to radiation adaptive responses (hormesis)

<http://www.dose-response.org/conference/2010/videos.htm>

<http://www.radiation-scott.org/phototour/radiation/radgloss.htm>

14. IMPORTANT JOURNALS

- **Annals of Oncology**

<http://annonc.oxfordjournals.org/>

- **Acta Oncologia**

<http://www.informaworld.com/smpp/title~content=g779470932~db=all>

- **BMC Cancer (Open Access Journal)**

<http://www.biomedcentral.com/bmccancer/>

- **Cancer Epidemiology Biomarkers & Prevention**

<http://cebp.aacrjournals.org/>

- **Cancer Prevention Research**

<http://cancerpreventionresearch.aacrjournals.org/>

- **Cancer Research**

<http://cancerres.aacrjournals.org/>

- **Cell Death & Disease (Open Access Journal)**

<http://www.nature.com/cddis/index.html>

- **Cell Growth and Differentiation**

<http://cgd.aacrjournals.org/>

- **Clinical Cancer Research**

<http://clincancerres.aacrjournals.org/>

- **Clinica Chimica Acta**

http://www.elsevier.com/wps/find/journaldescription.cws_home/506018/description#description

- **DNA and Cell Biology**

<http://www.liebertpub.com/products/product.aspx?pid=13>

- **Free Radical Biology and Medicine**

http://www.elsevier.com/wps/find/journaldescription.cws_home/525469/description#description

- **Free Radical Research**

<http://www.tandf.co.uk/journals/authors/gfrrauth.asp>

- **Genome Integrity**

www.genomeintegrity.com

- **Human Gene Therapy**

<http://www.liebertpub.com/products/product.aspx?pid=19>

- **Indian Journal of Radiation Research**

For manuscript submission and, subscription and free sample copy of the Journal contact, Editor: Dr K. P. Mishra, Email: mishra_kaushala@rediffmail.com, Assistant Editor: Dr. H. D. Sarma Email: hdsarma1162@yahoo.com

- **International Journal of Radiation Biology**

<http://www.informaworld.com/smpp/title~content=t713697337>

- **International Journal of Radiation Oncology, Biology and Physics**

http://www.elsevier.com/wps/find/journaldescription.cws_home/525471/description#description

- **Iranian Journal of Radiation Research**

<http://www.ijrr.com/>

- **Journal of Cancer Research and Therapeutics**

<http://www.cancerjournal.net/>

- **Journal of Experimental and Clinical Cancer Research**

<http://www.jeccr.com/>

- **Journal of Radiation Research**

http://www.journalarchive.jst.go.jp/english/jnltop_en.php?cdjournal=jrr1960

- **Molecular Cancer Research**

<http://mcr.aacrjournals.org/>

- **Molecular Cancer Therapeutics**

<http://mct.aacrjournals.org/>

- **Radiation Measurements**

http://www.elsevier.com/wps/find/journaldescription.cws_home/286/description#description

- **Radiation Oncology**

<http://www.ro-journal.com/>

- **Radiation Physics and Chemistry**

http://www.elsevier.com/wps/find/journaldescription.cws_home/331/description#description

- **Radiation Protection Dosimetry**

<http://rpd.oxfordjournals.org/>

- **Radiation Research**

<http://www.rrjournal.org/perlserv/?request=get-archive>

- **Radiotherapy and Oncology**

http://www.elsevier.com/wps/find/journaldescription.cws_home/506042/description#description

- Science Signaling

<http://stke.sciencemag.org/>

15. RECENT BOOKS

- A guide to cancer genetics in clinical practice

<http://www.nature.com/bjc/journal/v102/n12/abs/6605693a.html>

- Harmonising different approaches to patient release after radionuclide therapy: iaea safety series report no. 63: 'Release of Patients after Radionuclide Therapy'

<http://rpd.oxfordjournals.org/content/140/4/408.extract?etoc>

- Chernobyl: consequences of the catastrophe for people and the environment

<http://rpd.oxfordjournals.org/content/141/1/97.extract?etoc>

- Chernobyl: consequences of the catastrophe for people and the environment

<http://rpd.oxfordjournals.org/content/141/1/101.extract?etoc>

- Management of persons contaminated with radionuclides: NCRP report no. 161 (Volume 1)

<http://rpd.oxfordjournals.org/content/141/2/215.extract?etoc>

16. CONTENTS OF INDIAN JOURNAL OF RADIATION RESEARCH

Indian Journal of Radiation Research (IJRR)

Volume 6, No. 3-4

Contents

1. REDOX REACTIONS OF PEROXO PHENANTHROLINE COMPLEX OF CU(II) : A PULSE RADIOLYSIS STUDY

Vishwabharati V. Malkar, Ridhima Chadha, Nandita Biswas, Sudhir Kapoor, Tulsi Mukherjee

2. REACTION OF HALOGENATED PEROXYL RADICALS WITH TRYPTOPHAN

Hari Mohan

3. STUDY ON MINERAL CONTENT OF SOME AYURVEDIC INDIAN MEDICINAL PLANTS BY INSTRUMENTAL NEUTRON ACTIVATION ANALYSIS AND AAS TECHNIQUES

R.S. Lokhande, P.U. Singare, M.L. Andhele

4. QUANTIFICATION OF DNA DOUBLE STRAND BREAKS IN BLOOD LYMPHOCYTES AND LUNG FIBROBLASTS CELLS (WI-38) AFTER IN-VITRO EXPOSURE TO BLEOMYCIN

R. Priyadarshini, M. Chinndurai, K. Gandhervin, I. Raheman, Solomon F.D. Paul, P. Venkatachalam

5. OPTIMISATION OF LIVE AND DEAD TIME FACTORS WITH CHOICE OF OTHER TIME PARAMETERS IN THE RNAA FOR TRACE ELEMENTS OF FORENSIC BALLISTICS INTEREST

A.B.R. Tripathi, N. Chattopadhyay, Bharti, C.A. Bhadkambekar, A.K. Basu, S. K. Shukla

6. NITROXIDE INDUCED RADIATION PROTECTION TO CALF THYMUS DNA: A BIOPHYSICAL STUDY

Chabita Saha, S.K. Dey

17. NOTICE BOARD

- **Update your email and contact address**

Dear Members of ISRB,

The eNewsletter would be send to ISRB Members by email only. If your email address is getting changed or you have any other preferred email, please communicate to us as soon as possible on isrb_enewsletter@yahoo.co.in. In case, any other ISRB Member, who is not receiving eNewsletter, please intimate us his/her email address.

In addition, if any other friend or colleague is interested to receive the eNewsletter, please let us know his/her email address to be included in our mailing list. The eNewsletter is free to ISRB Members as well as non-Members too. **The subscription of eNewsletter is absolutely free!!!**

In addition, it is frequent problem to communicate with ISRB members due to change in address. If your contact address has been changed please intimate to Secretary, ISRB. This would help us to reach you and communicate, when ever needed.

- **Join ISRB**

Are you/your colleague/friend working in Radiation Research or related field and still not a Member of Indian Society for Radiation Biology? Join ISRB.

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• Awards / Honors to ISRB Members

Editorial Board '**Radiation Science Today**' is pleased to launch a column "**AWARDS/HONORS to ISRB Members**" in the eNewsletter. We hope the column would make us more aware with each other about our awards/ scientific achievements.

This column is only for Members of Indian Society for Radiation Biology. If you are Member of ISRB and received any award or scientific honor, you are requested to send details of same in following format on email address: isrb_enewsletter@yahoo.co.in, with **subject line**: Awards/Honors.

To avoid the verification of Membership and any ambiguity from non-ISRB Members, a line of statement is requested that 'I am a Member / Life Member of Indian Society for Radiation Biology'.

Details of award or scientific recognition can be submitted in prescribed format provided below as when received, which would be included in next upcoming issue of the eNewsletter.

Please circulate the announcement to your colleagues and friends, who are Members of ISRB. Please provide complete information to avoid unnecessary delay in publication in eNewsletter.

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• Recent publications/patents of ISRB Members

Dear Members of ISRB,

It is our pleasure to mention that in last two years, '**Radiation Science Today**' the eNewsletter published by Indian Society for Radiation Biology, has made a significant contribution to link the Members of Society working in various research fields of radiation biology and allied sciences. To further strengthen the interaction amongst Members of ISRB, we initiate a new Column '**Recent Publications of ISRB Members**' **beginning** from next issue of eNewsletter i.e. **Jan-March , 2010 Issue 9**.

The publication/patents meeting following criteria would be included in the eNewsletter:

1. At least one author of citation should be Life Member of ISRB.

2. It should be published after 2009. Citations only with final page number should be provided i.e. 'In Press' citations would not be considered.
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You may communicate the message to other ISRB members, if they could not receive it.

Authors/Affiliation/Email	Title	Citation	Key Words
Kumar A, Ali M, Mishra P, <u>Pandey BN</u> , Sharma P, <u>Mishra KP</u> . Email: mishra_kaushala@rediffmail.com Radiation Biology and Health Sciences Division, Bhabha Atomic Research Centre, Mumbai - 400085, India	Thorium-induced neurobehavioural and neurochemical alterations in Swiss mice.	International Journal of Radiation Biology, 2009, 85(4):338-347.	Thorium Toxicity; Neurobehavioral, neurochmeical alterations; oxidative injury
Hazra B ¹ , <u>Pandey BN</u> , Kumar A, Ghosh S ¹ , Kumar B ¹ , <u>Mishra KP</u> Email: banasrihazra@yahoo.co.in Radiation Biology and Health Sciences Division, Bhabha Atomic Research Centre, Mumbai - 400085, India ¹ Department of Pharmaceutical Technology, Jadavpur University, Kolkata, India	Plant Products in modification of cellular damage by radiation: Implications in cancer radiotherapy.	In "Herbal Drugs: A Cancer Chemopreventive and Therapeutic Perspective" (Ed.: R. Arora, INMAS, New Delhi), Publisher: Jaypee Brothers Medical Publishers, New Delhi, 2009	Cancer radiotherapy; Natural Plant Products; Apoptosis

- **You can contribute in this eNewsletter**

You can send your contribution, which may be included in this eNewsletter under **'Reader's Column'**

Brief scientific article (maximum 1000 words, if reference needed, in 'International Journal of Radiation Biology' style) may be submitted for publication in eNewsletter. Your article may fall under following subject category: (i) radiation sciences or related research areas; (ii) your opinion on any scientific issue, technique or some general topics; (iii) any major finding or research concept from the archives of radiation sciences. The article should be original. It would be published in eNewsletter after general screening/reviewing of the article by the Editorial Board.

For any further clarification or submission of any article write to Editor on email address: isrb_enewsletter@yahoo.co

In addition, if you come across any recent journal / books published in radiation and related research areas, please send us the details of the book/journal on our email: isrb_enewsletter@yahoo.co. The details of books/journal would be included in the eNewsletter **free of cost!!!**

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We hope you will find this Newsletter as a useful resource of information. However, we look forward for your active contribution and valuable comments/ suggestions for improvement of the eNewsletter on isrb_enewsletter@yahoo.co.in or any of the Member of Editorial Board.

You are being sent the eNewsletter since either you are member of Indian Society for Radiation Biology or identified as potential reader of the eNewsletter. If you wish to discontinue receiving the eNewsletter in future write to us: isrb_enewsletter@yahoo.co.in.

Disclaimer: Every effort has been taken to provide up-to-date and correct information in the Newsletter. However, readers are advised to check the related source of information.

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INDIAN SOCIETY FOR RADIATION BIOLOGY

(Regd. No. 5-19927, dt. May 5, 1989)

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3. Date of Birth ...

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