



RADIATION BIOLOGY AND ITS CLINICAL APPLICATION

Global Initiative of Academic Networks (GIAN) Course

13– 21st October 2020,

Jawaharlal Nehru University, New Delhi

OVERVIEW

- “Radiation biology” is an emerging and strong interdisciplinary field at the interface of biology, physics and medicine with significant contributions from a number of preclinical and clinical disciplines. It is characterized by rapid advances in biological and technical knowledge.
- The knowledge of wanted and unwanted effects of radiation has undoubtedly evolved to an even greater necessity since the positive effects of radiation can be used beneficially in healthcare and daily normal life.
- The current course will help us to learn the effect of ionizing radiation in DNA, in cells, organs and population. Focus will be placed on how the “quality” of the physical exposure affects biological outcomes. Participants will also explore the biological responses of ionizing radiation like DNA damage, effects on cell cycle ,and radiation resistance which are the major concerns in present era.

OBJECTIVES

Upon completion of the course, participants will:

- Understand the fundamentals of radiation biology, radiation physics and radiation chemistry along with the effects of ionizing radiations.
- Understand the cellular and biological response of ionizing radiation and their interpretation along with the modification to minimize the radiation damage.
- Understand the Medical counter measure against radiation leakage, exposures and transport and risk management, detection and dosimetry.
- Become more familiar with common laboratory techniques and the model used in the field of radiation biology.
- Have an idea of medical imaging principle and their advancements in the field of radiation oncology and radiotherapy and their clinical perspective in cancer.

Accommodation is the sole responsibility of the participant. A small number of rooms may be available on request.

Venue: SCMM, JNU, New Delhi (New campus)

Register at: <http://www.gian.iitkgp.ac.in/GREGN/index>

GIAN Website: <http://www.jnu.ac.in/GIAN/>

LECTURES AND TIMINGS

DATE	Broad Topic of LECTURE
13 th Oct, 2020 (Lecture 1 & 2)Time	Aradiation oncology.(Lecture+ Tutorial) n introduction to radiation biology and modern
14 th Oct, 2020 (Lecture 3 & 4)Time	Primary and acquired radiation resistance in human tumors; (Lecture+ Tutorial)
15 th Oct, 2020 (Lecture 5 & 6) Time	Enhancing the efficacy of immunotherapy by creative use of ionizing radiations.(Lecture+ Tutorial)
16 th Oct, 2020 (Lecture 7 & 8)Time	Medical counter measures against radiation, countermeasure programs for protecting soldiers and civilians from radiation/nuclear events. (Lecture+ Tutorial)
19 th Oct, 2020 (Lecture 9 & 10) Time	Systemic effects of radiation on humans . (Lecture+ Tutorial)
20 th October, 2020 (Lecture 11 & 12)Time	Modification of cellular and systemic response to radiation; (Lecture+ Tutorial)
21 st October, 2020 (Lecture 13 & 14) Time	Medical imaging and modern trends in Radiotherapy; (Lecture+ Tutorial)

REGISTRATION

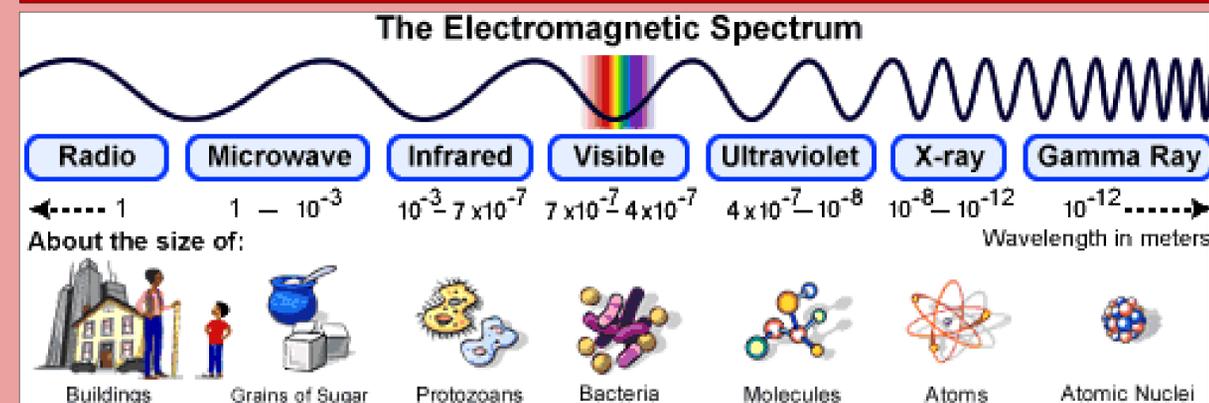
Participants	Registration fees
JNU M.Sc. And M.tech. students	Free
JNU research students (M.Phil. & Ph.D.)	Rs. 1000
JNU Faculty	Rs. 1000
Other Institutions (research students)	Rs. 2000
Other Institutions (faculty)	Rs. 4000
Other government institutions	Rs. 4000
Industry and private institutions	Rs. 5000

Who Should Attend?

- Students (all levels) and faculty from recognized academic and technical institutions.
- Executives, engineers and researchers from manufacturing, services and government organizations including R&D laboratories.



ELECTROMAGNETIC SPECTRUM



TEACHING FACULTIES



Prof. Vikram Bhadrasain

Dr. Vikram Bhadrasain is a Radiation Oncologist and serving as the Chief of the Clinical Radiation Oncology Branch at the US National Cancer Institute’s Radiation Research Program which sponsors clinical and translational research in the USA and beyond. He assists the Cancer Therapy Evaluation Program and Coordinates Center for Clinical Trials with NCI’s cooperative clinical trials groups program. He also continues his work on improving cancer prevention and control worldwide. He has more than 175 publications.
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Prof. Vibha Tandon

Prof Vibha Tandon (VT), is Professor of Special Centre for Molecular Medicine (SCMM), Jawaharlal Nehru University, New Delhi. Her teaching roles in SCMM includes biochemistry, pharmacology and Drug development. She has around 74 publications and 2 book chapters. She is doing multidisciplinary projects including Chemical Biology ,Radiation Biology & Cell Signalling, Drug Development and Study of their mechanism of Action based on Genomics & Proteomics, Development of Antibiotics for Gyrase Resistant Strains targeting Topoisomerase IA Gene in bacteria.
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